

# Digitalization Challenges and Implementation of Technology in Fee Management

## St Mathews Academy School Book – A Case Study

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### **Abstract**

*India is on the threshold of a digital revolution. Education is also undergoing a change both in the content as well as in the administration of educational institutions. Maintaining records of students, monitoring their attendance, examination results etc., is a challenge. Colleges and schools are adopting simple and less complicated computerized methods and avoiding the old manual paper systems of maintaining the records and accessing data. Fee collection is an onerous task for all educational institutions- tracking payments and properly maintaining records; mandatory for audit purposes, and compliance with government rules. Schools must adhere to this in order to continue to receive aid, while un-aided; private schools depend on fees for sustenance.*

*The school managements have much to gain in digitalizing the school systems, particularly the fee collection. Vigilance and control of financial transaction remain with the management. Digital school payments have an inbuilt system of auto alerts, real time notification, emails, SMS alerts and mobile push notification.*

*It can be concluded that digital payment of fees has been accepted and used effectively by the parents of the St Mathews Academy student body. St Mathews Academy has achieved 100% digitalization and is an example to other school in sub-urban India. A simple five point step towards digitalization for fee management can be implemented by any school in sub-urban India.*

**Key words:** *School Management, Digitalization, fee management, Demonetization, Education*

### **1. Introduction:**

India is on the threshold of a digital revolution. The last half decade has seen vast leaps in technology, which are believed, to be the answer to the country's problems. The current government in India; has been actively pushing for digitalization in every sector of the economy. The initiative to convert 100% of Government – Citizen Transactions to the digital platform is being lead by the NITI Aayog. <sup>1</sup> Demonetization took place on November 8, 2017

which was the turning point for the economy. This strong action on the part of the government caused a revolution in financial transactions.

Radical development in technology has ensured that no plane can fly or financial transactions take place, without the use of computers. We have entered an era of artificial intelligence. Many of the manual functions are being taken over by robots. Automation and digitalization are reducing the burden on manual work and preventing human error. Data is now more accurate and reliable. Tablets, laptops and smart phones are essential to everyday life. These devices enable unlimited access to the information, knowledge databases, and multimedia contents. Most importantly they, also, extend to the communication irrespective of time and space – effectively cyber space. The next change, which is as important, happens in the transfer and presentation of this information and knowledge.

The digital evolution of the Indian educational system and its institutions is no longer an option but a necessity. India has a large and immensely sought after private school system especially at the primary and secondary levels. These schools complement the government run schools. In the age group of 6 to 14, 29% of students receive education in private schools<sup>ii</sup>. The current generation of student is born digitally native. They understand and respond to technology better than any other tool of education. Hence, old teaching pedagogy is being replaced by the new. Chalk and talk have been replaced by e-learning modules.

However, this evolution is not uniform. Many schools and colleges in India have upgraded to the electronic medium. Though, some are still in the very nascent stages. Transition has taken place at various levels and in different formats, ranging from, highly sophisticated end-to-end digital solutions, to basic financial software. Currently only 5 % of institutions are digitally active and only 2 % use facilities such as online fee payment. Thereby, enjoying the benefits of modernization and digitalization. The remaining institutions are still lagging behind. They continue to use outdated methods for payments, which demand a lot of manpower and time.

Digitization offers transparency and accountability which are key factors in enabling and utilizing limited resources judiciously. Maintaining records of students, monitoring their attendance, examination results etc., is a challenge. Colleges and schools are adopting simple and less complicated computerized methods and avoiding the old manual paper systems of maintaining the records and accessing data. This can be done with the help computer hardware and software.<sup>iii</sup> Such records are retrievable with the click of a button.

### **1.1. Back ground of the study:**

St Mathews Academy was founded in 2000 as a pre-primary school. In 2007 the first batch of students appeared for the ICSE board exam. The first batch of ISC candidates was presented in 2011. The school is located in Urli Devachi which has recently been included within Pune corporation limits. Thus the school draws its students from Urban, suburban and fringes of semi rural areas.

St Mathews Academy started with 25 pupils and the School management was traditional. Most administration procedures were manual and pupils were admitted by registering the names in the school register. Admission forms were completed by the parents manually, and the hard copies were filed.

Paper work was filed manually and records were retained till the pupil left the school. In the year 2009, the use of computers was initiated for accounting purposes only. However by the year 2012-13, this was extended to cover administration and financial management. E.g. maintenance of pupil records via excel sheets.

The school started using emails to correspond with parents across the board. It ran in tandem with handwritten correspondence till it was slowly phased out. In 2013 the first version of the school website was launched. This website was redesigned in 2015, in its present form.

In 2015, the school management took a decision to incorporate technology into the administration of the school. The first phase, of the integration of technology into the fee management and admission process was initiated. This study will focus on the implementation of a digitized system, which eases the tracking of fee payment by students and reduces the burden on school administration staff.

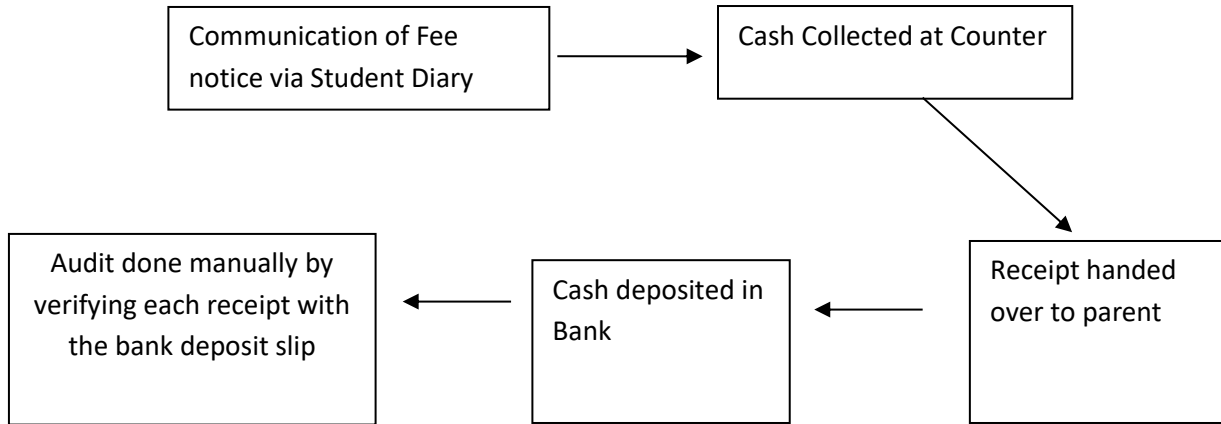
## **1.2 Challenges to digitalization and adopting of technology:**

Fee collection is an onerous task for all educational institutions- tracking payments and properly maintaining records; mandatory for audit purposes, and compliance with government rules. Schools must adhere to this in order to continue to receive aid, while un-aided; private schools depend on fees for sustenance. Therefore any hitch in the fee cycle causes a major problem in the cash flow of the institution. Smooth and transparent fee management will ensure that there is no interruption in the salary and infrastructure development of the institution. Fee collection by school staff in the form of cash collection at the school office was a time consuming and risky job. Being a small institution it was not easy to have the cash collected at a bank and St Mathews Academy collected the fee from parents at the school office during fixed fee cycles. This in turn was then deposited into the bank. Some of the many problems faced are listed below:

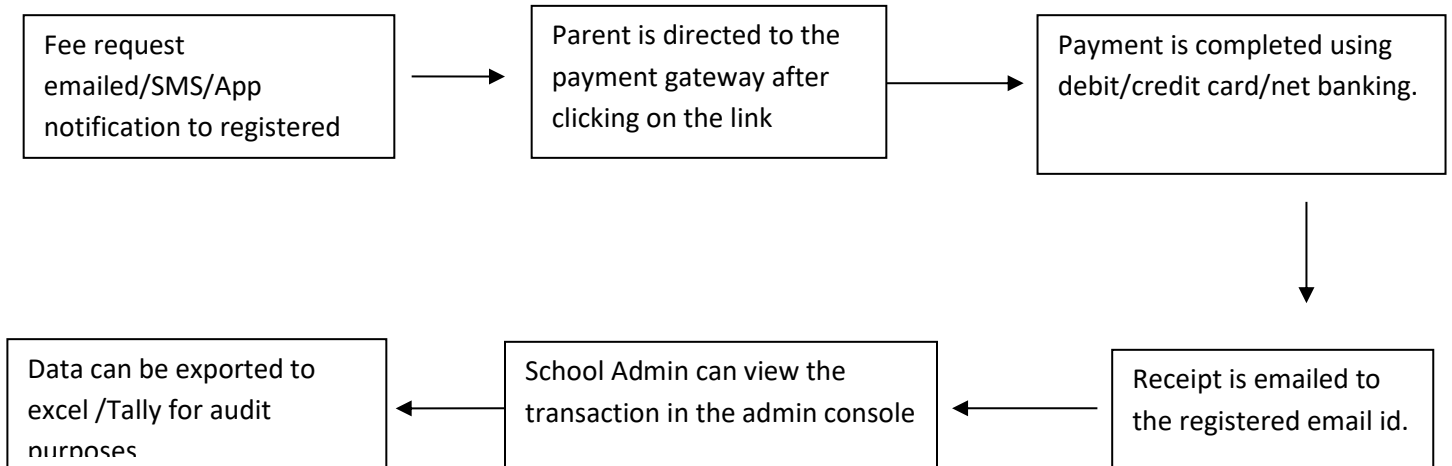
1. Problems faced by St Mathews Academy due to cash collections
  1. Cash to Bank
  2. Problem of Change
  3. Dependence on the honesty of the staff collecting the cash which affected the reputation of the school
2. Problems faced by Parents in Digital Payments.
  1. No email id to mail links
  2. Digital Illiteracy
  3. Internet problems

4. Bank problems- maintaining of minimum balance for digital payments
5. Transaction timeouts
6. Reluctance to bear the transaction charges levied by the payment gateway

**Process prior to Digitization**



**Process after Digitization**



## Advantages of Digitalization

The school managements have much to gain in digitalizing the school systems, particularly the fee collection. Once the data is available it enables the following reports to be generated; effectively fee defaulters are easily tacked and follow up possible. Cash flow is streamed lined and facilitates financial planning for salary and infra structure by the school management.

1. Outstanding fee or payment pending list
2. Payment received ledger along with the date and time of payment
3. Transfer date and time into school bank account
4. Defaulter student list
5. Term – wise payments
6. Individual student wise fee payment record

Vigilance and control of financial transaction remain with the management. Digital school payments have an inbuilt system of auto alerts, real time notification, emails, SMS alerts and mobile push notification.

## 2. Objectives of the study

The core objective of this study is to compare the ease of payment before and after digitization in 2017 & 2018 with reference to St Mathews Academy School book software. The following secondary objectives were formulated in order to achieve the above primary objective.

- 1) To determine the percentage of parents accepting the idea of making fee payments online and the comfort of digital transaction.
- 2) To identify the problems encountered by parents while paying fees on -line.
- 3) To determine if there is an improvement in the students fee tracking and use of digital receipt book.
- 4) To verify if the fee collection system is user friendly

## 3. Scope and Limitations

1. The study is limited to the SMA schoolbook software and App.
2. It does not include a detailed comparison with other software available in the market.
3. This study is limited to the challenges faced by the school during the initial year due to digitalization.

The scope of this study is that the fee collection model developed may be applied pan India. Pre-digitalization fee collection would be in the form of manual cash payment. Transition from cash to digital has proved challenging. St Mathews Academy is a private, unaided, coeducational ICSE Board school having a student population of 495 students. The school is situated in the

sub-urban fringe of Pune city and has faced these challenges positively. Many schools in sub-urban India face such similar challenges. In adherence to government directives over the next two years all schools will have to initiate this process of digitalization of their fee collections. Effectively schools will have to be digital in both collection of fees as well as payment of salaries. Transition to complete digitalization, is not as challenging in core city areas. However, suburban areas have multiple challenges. This study provides a model for other schools to adopt. Having a model on which to base their transition will undoubtedly make the journey smoother and less difficult. Software solutions available in the market may not provide the insight into the practical challenges faced and the solutions found in the actual implementation of digitalization.

#### 4. Research Methodology

1. Quantitative Study- This is an empirical study based on the data collected from the parents of St Mathews Academy.
2. The Population- The population of the study is the total strength of the parent body of pupils enrolled in the school
3. Sample Unit- Parents of Pupils studying in SMA
4. Collection of Primary Data- The data has been collected at the Parent teacher Meeting conducted on October 2018

4.1 As this research was a case study it was decided to have a quantitative study for better understanding.

4.2 The population:

Total strength of the School 516 students

Pre- Primary – 105 students

From the total of 105 parents, 81 parents completed and submitted the data. The balance parents either did not attend the Parent teacher Meeting or submitted incomplete forms which were rejected.

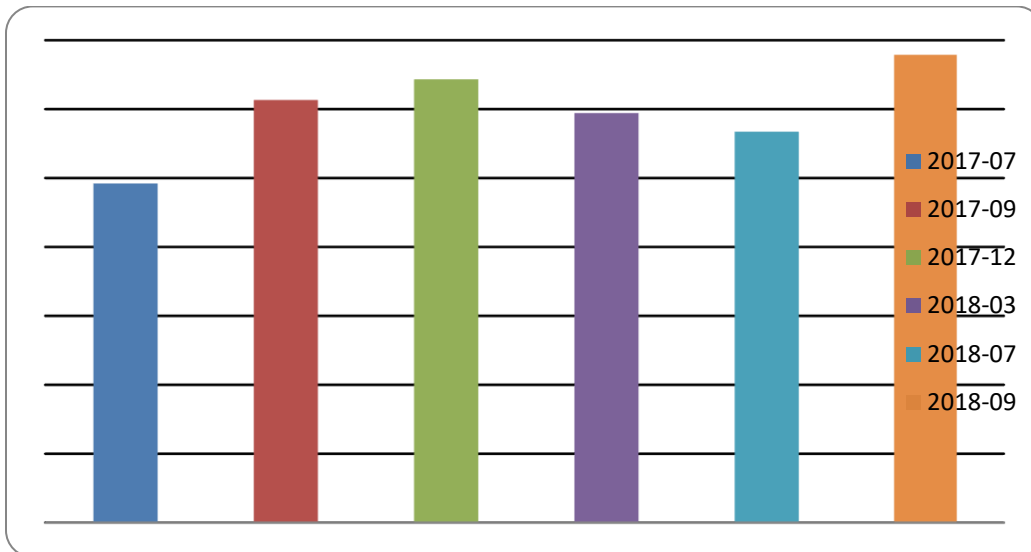
Class 1- 12 - 411

From the total of 411 parents, 345 parents completed and submitted the data. The balance parents either did not attend the Parent teacher Meeting or submitted incomplete forms which were rejected.

4.3. The collection of data was done at the Parent Teacher Meeting held in October 2018. The questionnaire was handed out by the Class Teacher to each parent who came to meet her when she collected the academic report card of their ward.

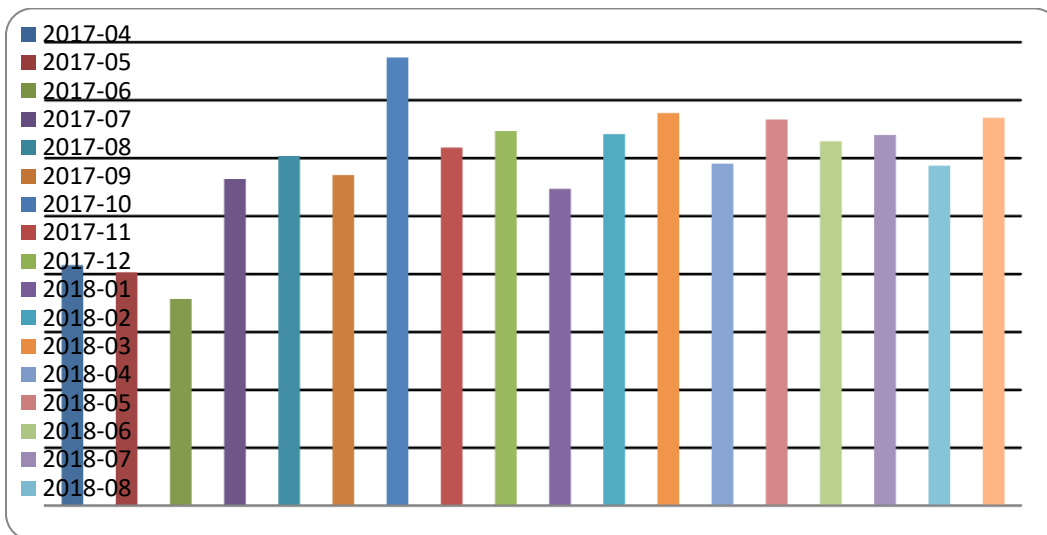
5. Tool used – A structured questionnaire administered to the parents.
6. Statistical Tool- Percentile method

### 4. Data Analysis



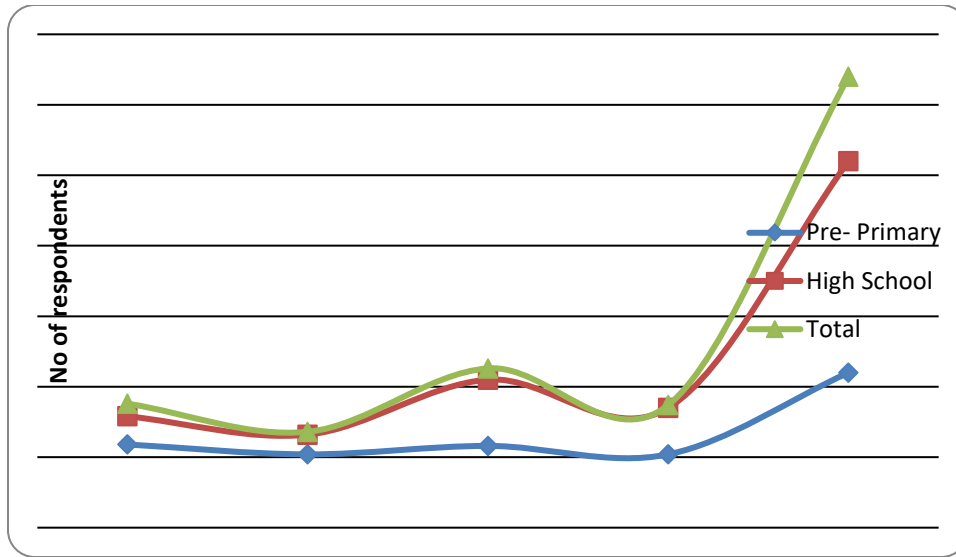
Source: Pay-U Money data for Pre- Primary School

Figure I: Digital payment from June 2017 to September 2018



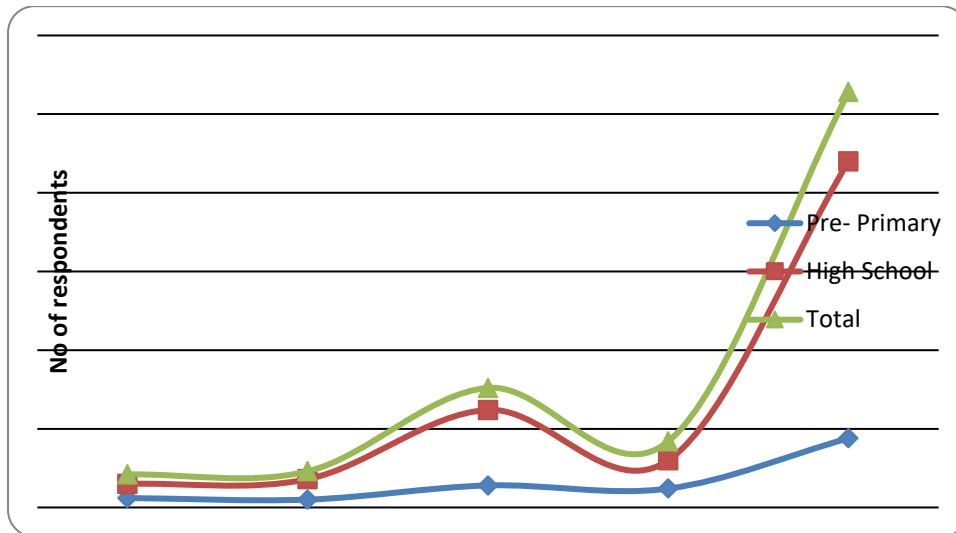
Source: Pay-U Money data for High School

Figure 2: Digital payment from June 2017 to September 2018



**Figure 3: Response to difficulty in paying Fees**

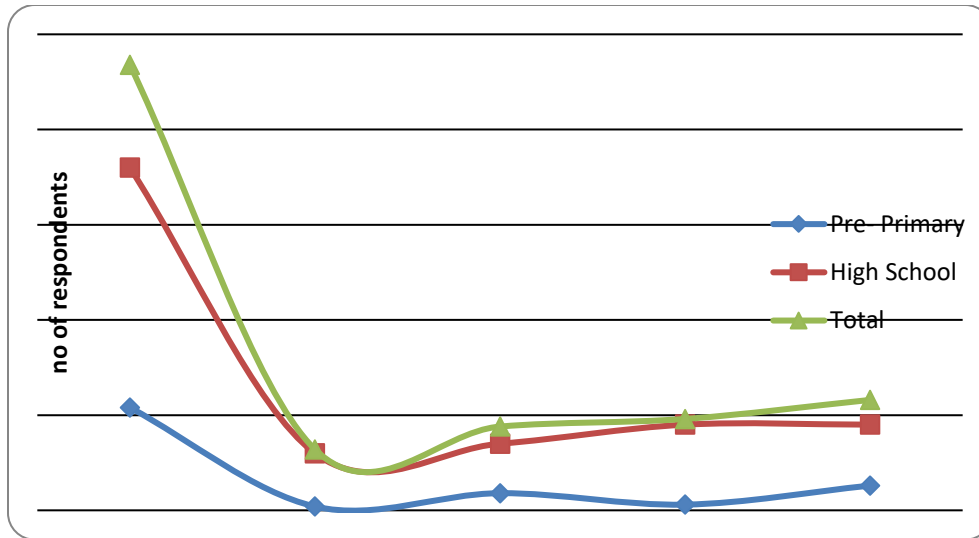
270 out of the 426 respondents never had difficulty in paying the fees online.



**Figure 4: Response to whether assistance required in paying fees**

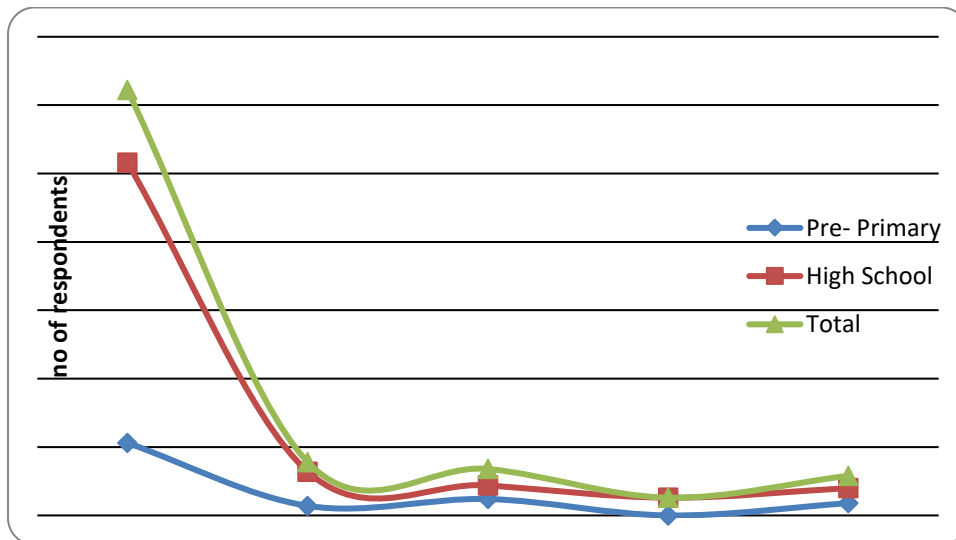
Most respondents did not require any assistance while paying fees.





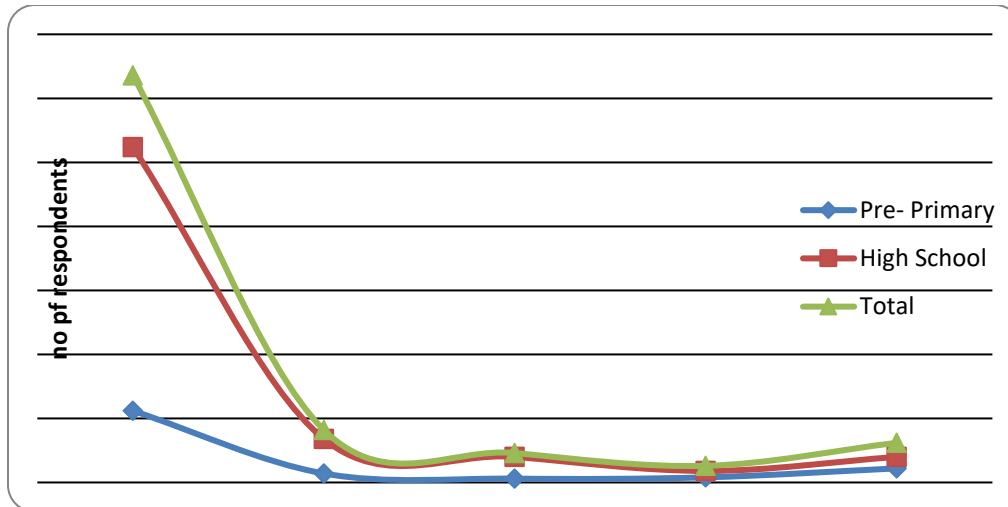
**Figure 5: Satisfaction indicator for payment gateway**

The respondents had higher expectations with the payment gateway. They indicated that the fee levied and there was scope for improvement in the services

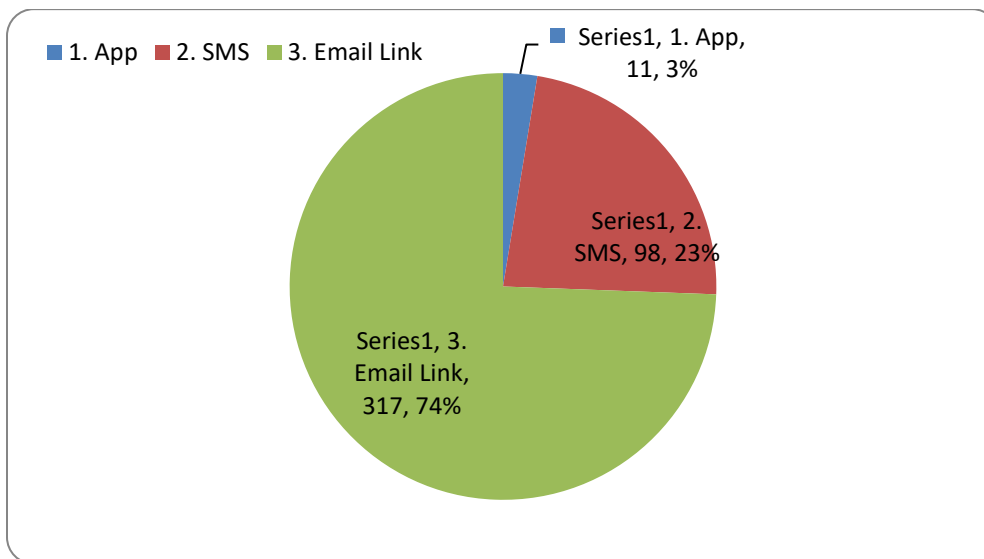


**Figure 6: Ease of tracking digital payments**

It was found that the digital payments were easily trackable and this was easily accomplished.

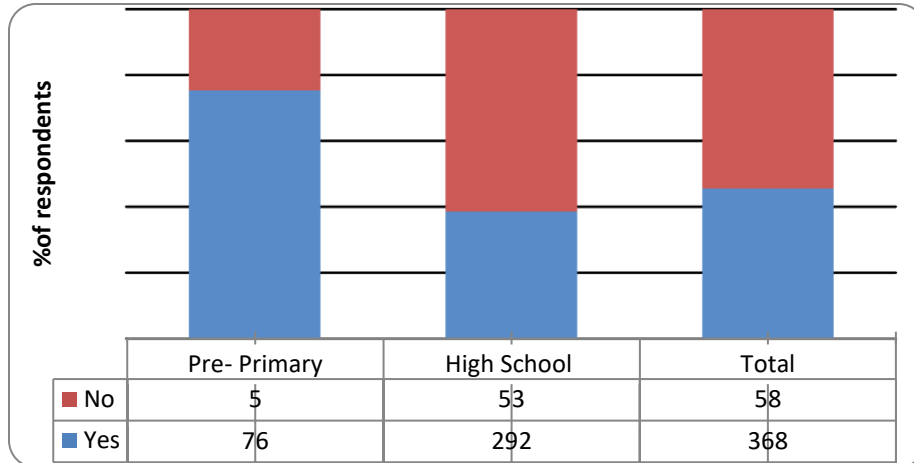


**Figure 7: Visibility of the notification of fee invoice**



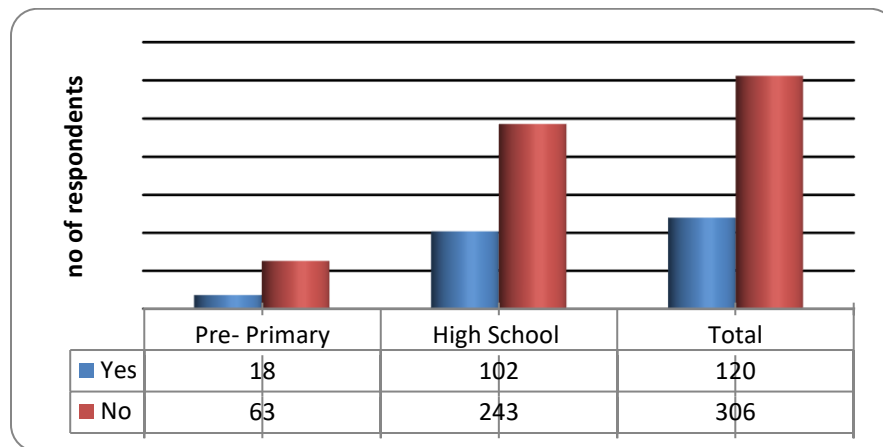
**Figure: 8 Choice of tool for payment of fees**

Here it was noted that a majority of parents preferred to pay the school fees via the link either emailed to their registered email id or use the link that was SMS to their registered mobile number. Only 7 of the 81 parents used the app to make this payment. The most important reason was the lack of visibility of the fee payment option in the app as well as the lack of familiarity with the app. The important feedback was the many parents used the app only to communicate with the class teacher or to check assignments only. Some parents were not aware that payments were possible via the app.



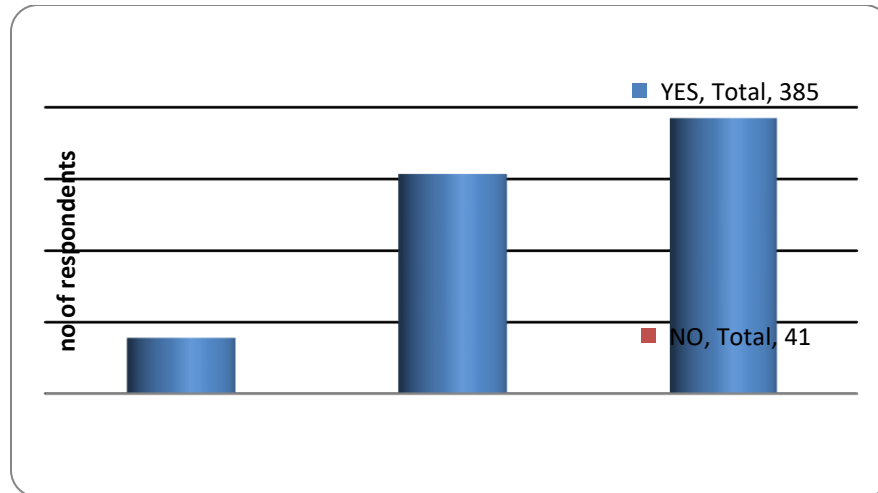
**Figure 9: User friendliness of the system determining acceptability**

One of the objectives of the study is to verify if the current system is to determine the percentage of parents accepting the idea of making fee payments online and the comfort of digital transaction.



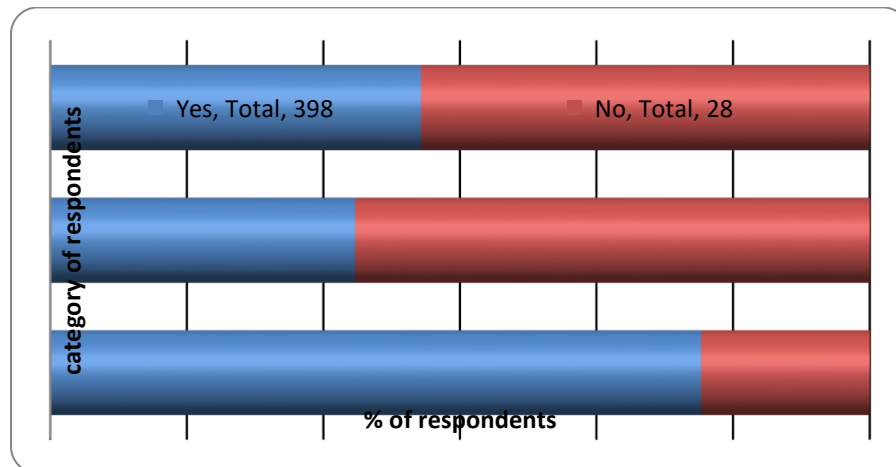
**Figure 10: Preference of method of payment: digital / cash**

The above chart clearly shows that the majority of parents would not prefer to pay cash. It is interesting to note that the parents who still preferred to pay cash are the parents of pupils in the high school classes who had previously been used to paying cash. The Pre-Primary parents who had joined the school after online payments had been made mandatory did not prefer cash transactions.



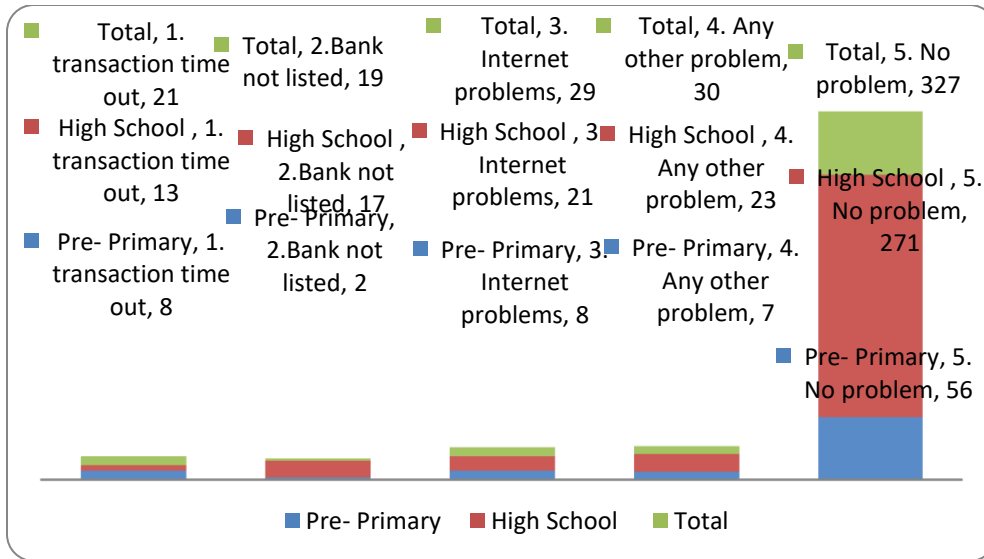
**Figure11: Ease of payment with every fee cycle**

One of the objectives of this study was to determine if the comfort of digital transaction and if it improves every time that the parent pays the school fees online. This was validated when 385 out of the 426 parents said that their comfort level increased with every fee cycle. An overwhelming number of 78 parents agreed that it became easier to pay fees online with every fee cycle. Only 3 parents disagreed.



**Figure12: Sufficient reminders for due date of payment**

398 out of the 426 respondents felt that the number of reminders for the due date to pay the fees were sufficient.



**Figure 13: Problems face by parents in digital payments**

- **No problems:** 327 out of the 426 respondents had NO problem in making the online fee payment. However, valuable feedback received was that though most parents did not have a problem in paying the fees some were unhappy with the transaction charges levied by the site Pay-U – Money. They considered that these were excessive charges
- **Any other problem:** A majority of parents listed high transaction charges of the payment gateway as problem.
- **Internet problems:** Sub urban areas did not have good internet connectivity and many parents did not have access to computers. They were dependent on making the online payments via their mobile phone device only.
- **Bank not listed** – It was found that two banks i.e. Bank of Baroda and Andhra Bank are not listed among the options at the Pay-U –Money gateway site. Hence parent wishing to pay from their accounts in these specific banks were facing difficulty.
- **Transaction time out:** This problem relates to digital illiteracy. A transaction time out or failure takes place if a person attempting the transaction fails to complete the relevant steps in the transaction procedure quickly enough. Failure to enter the Pin or One Time Password (OTP) quickly enough will result in a transaction time out. This essentially means that the entire transaction procedure needs to be reinitiated.

**Suggestion to improve the fee payment system**

Among the suggestions to improve the fee payment system, received the following suggestions.

- Use a free application, the app should show updates immediately,
- Yearly installment timetable to be visible to the parents so that the financial planning is possible.
- Lastly, it was also suggested to the school that they tie up with a payment gateway which gave a cash back option to the parent.

## 6. Conclusions, Recommendations and Suggestions

A large number of suburban and rural schools in India have common problems in the lack of infrastructure, erratic power supply and low digital literacy of the bulk of the parent body. The distrust of digital payments due to the constant threat of cyber crime has induced a resistance to change in ill informed parents. This study draws attention to the micro management of these problems, particular, and illustrates simple usable solutions. Ease and convenience of the end user is the unique selling proposition (USP) of digital fee payment by parents as well as school managements.

It is to be noted that the market is extremely price sensitive and transaction charge or convenience fee levied by the payment gateway for digital transaction are a sore point with the parents as it reflects in this study. Due to this the option of reverting to a cash system is still attractive to some in spite of the inconvenience of standing in a line to pay the fees. The study also shows that many parents want a choice and will use a payment method depending on the time constraint or resources available to them. However it is also to be noted that the parents of high school students were the ones who wished to have an option for cash. These parents had been used to paying traditionally by cash and had only switched to digital because they were presented with no choice.

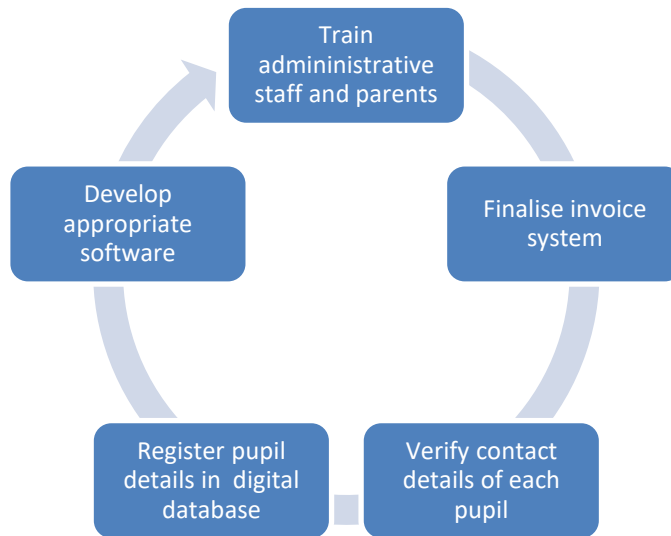
The Pre Primary parents who had admitted their children after online payments were made compulsory especially post demonetization were more comfortable with the online system and were more inclined towards digital payments. Their comfortable level with digital payments was also notably higher. Therefore the age factor of a parent of a pre-primary student of age 3 and the 10 year gap between the parents of 13 year old appears to be an important determinant in influencing the choice in mode of payment. It is also interesting to note that many of the digitally illiterate parents were dependent on the teenage children to pay the fees online. In fact it was found that it would be easier and faster to train the teen ager who in turn will either perform the function on behalf of their parents or train their parents.

It can be concluded that digital payment of fees has been accepted and used effectively by the parents of the St Mathews Academy student body. The comfort level in payment has increased with every fee cycle. Most parents would continue to prefer on online payment over cash even if they are given a choice.

St Mathews Academy has achieved 100% digitalization and is an example to other school in sub-urban India. A simple five point step towards digitalization for fee management can be implemented by any school in sub-urban India.

### **Five steps to Digitalization of Fee Management**

1. Register active email id and phone number for each pupil in the data base. Each email id and phone number will have to be verified to ensure that they are currently in use by the parent/pupil. This will require a constant update on the part of the school in case the email id or phone number of the parent changes.
2. Choice of software is a very important step. This can either be custom developed or picked from a range of pre existing software available in the market. Enter data of mobile number and email id in the software. Different software is readily available in the market. This software needs to be compatible with the financial software (Tally) so that accounting process is smooth. Legal compliance and intimation to bank is essential so that the fees are directly credited to the school bank account.
3. Ensure a multiple system of fee invoice via email, SMS and app. If the parent does not receive the invoice on time he is liable to default on the payment.
4. Ensuring a tie up with a payment gateway which will be transparent, provide instant receipt and low transaction cost. All options of Debit card, credit card and net banking should be integrated in the system and the payment gateway should provide the end user i.e. the parent with all banks being listed in the options.
5. Conduct training for parents and senior students in fee payments method. Demo payment can be shown at Parent Teacher meeting so that a comfort level with the software is ensured. This could also be backed up with instruction for payment to be emailed to them before an invoice is generated.



**Figure 14: Steps required for digitalization of fee system**

All aspects of school management can and should be digitalized, ultimately. This should cover all aspects of school management. Starting from the admission process where the digital profile of each pupil can be captured to the financial record being transparent. It can go further to digitalize parent teacher communication and the set up of a digital diary. Assignments, academic report cards, examination system and evaluation can and should be digitalized. This ensures transparency, accountability which will allow all stakeholders i.e. Teachers, school management and parents more time to focus on the main issue of academic achievement and learning outcomes.

Once this is achieved it will undoubtedly improve the quality of the academic journey of Indian students in sub-urban India. It is only when this transition is complete that the Indian educational system will be on par with that of the developed countries.

## 7. References

<sup>i</sup> <http://blog.onfees.com/digitization-india-today-tomorrow/>

<sup>ii</sup> <https://www.thehindu.com/features/education/school/over-a-quarter-of-enrolments-in-rural-india-are-in-private-schools/article5580441.ece>

<sup>iii</sup> <https://www.scribd.com/document/256044772/School-Registration-and-Fees-Management-System>

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