***Abstract:*** *Automated Teller Machine(ATM) enables the clients of a bank to have access to their account without going to the bank. As the number of ATM units increase, the machines are prone to hacker attacks, fraud, robberies and security breaches. In the past, the ATM machines main purpose was to deliver cash in the form of bank notes and to debit a corresponding bank account. However, ATM machines are becoming more complicated, and they serve numerous functions, thus becoming a high priority target to robbers and hackers. This paper gives the intersection between the ATM cards standards followed in the banks and the financial frauds. It undertakes two primary tasks: namely understanding of the traditional standard ATM card provided by the banks and a proposed methodology to make them more secure to reduce the ATM card frauds. The methodology uses the face detection procedure and online based account activation procedure which plays a prominent role to authenticate the user. This authentication mechanism is useful while transaction to secure ATM card from being cloned via skimming device, card trapping. This paper provides a generalized solution for financial fraud by the ATM card cloning or trapping that is being done in the field of E-banking.*