

Perception Towards Debit/Credit Card Frauds of Police in Bengaluru City

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ABSTRACT

Card and digital transaction fraud is constantly developing. debit and credit card fraud is getting more widespread. Cloning, phishing, cyberstalking, identity theft, malware attack, email spoofing, cyber extortion, and loss through IT theft are some of the most common types of fraud. This study provides information about debit and credit card frauds that are difficult to track down, as well as the problems and difficulties that police officers and lawyers encounter in such cases. The data was collected from hundred Police officials. The participants were randomly selected from different parts of Bengaluru city. The researcher took permission from the respected authorities to carry the research study. The research visited each participant and explained the purpose of the study. Later, the structured questionnaire was given to the participants with clear instructions. The participants were requested to answer all the statements to avoid respondent mortality. After collection of the data, they were scored and analysed using SPSS for Windows. The study used descriptive statistics which included frequency, percentage, mean and standard deviation along with inferential statistics which included chi-square, t-test and one-way ANOVA. The findings were drawn and discussed with supporting literature later. The results revealed that 75% of the police officers had high level of Awareness, while 99% of the officers had high level opinion and 93% of the officers had high level of knowledge regarding Preventive measures. All the Police officers had significantly lesser score on Awareness, opinion, knowledge regarding preventive measures and Total perception regarding Credit/Debit card frauds. Further on opinion, Sub-Inspectors had significantly higher score while assistant sub-inspector had significantly lower score. The possible reasons behind the findings were explained in the study.

Keywords: Digital Transaction, Police Officers, Awareness and Perception.

Introduction:

Card and digital transaction fraud is constantly developing. debit and credit card fraud is getting more widespread. Cloning, phishing, cyberstalking, identity theft, malware attack, email spoofing, cyber extortion, and loss through IT theft are some of the most common types of fraud. debit and credit card fraud costs the world \$21.84 billion per year. In Bangalore itself, from the past 4 years cybercrime has been rocketing up. In 2019, the number of Police reported cases Police reported case was on the verge of exceeding 9999 (Indian Express, 2022). The police software only allowed for the registration of Police reported cases with four-digit serial numbers, hence the software could not register any further cases (Kshetri, 2016). As a result, the station was forced to close on November 23 and reopened only on December 10 after the software was changed to allow for the entering of five-digit FIR serial numbers.

From the above example it was seen that police themselves are not been given enough resources to go further in their work, and a study related to the similar problem was conducted in the United Kingdom. Most UK police agencies do not consider fraud to be a serious criminal concern unless it is tied to organised crime or terrorism. This is understandable given the police's limited resources to deal with such a complex crime. The Fraud Review and Fraud Act 2006, on the other hand, are likely to result in more scams being reported to the police and more victims seeking 'justice.' This could put more

on police to respond to the crime and reassure victims. These victims could be people, national or international organisations putting pressure on police to use their arrest powers and search or question a suspect under caution. This article presented findings from a series of interviews with public and private sector employees about fraud, as well as other statistics on their perceptions of their interactions with police. Based on this information, the paper advocated for a new nationalised fraud agency to better deal with the problem of fraud (Brooks, & Button, 2011).

Another study was done on Orienting the Development of Crime Analysis Processes in Police Organisations Covering the Digital Transformations of Fraud Mechanisms. A sizable, and most likely overwhelming, fraction of fraud is now committed online. Police are struggling to incorporate this growing reality into their processes, despite the fact that expectations of this institution are high (Wall, 2007). These sorts of cybercrimes increase the volume and complexity of problems compared to prior manifestations, necessitating substantial changes in crime investigation methods to address them proactively. Many challenges face these advancements, such as the quality of available data, the lack of existing analytical models, and the need to expand police awareness of fraud methods at all levels of organisations (Jansen & Leukfeldt, 2018). To address these barriers, they proposed using a strategy that integrates theories from

many domains in criminology and forensic intelligence to investigate the digital transformations of certain criminal processes. As an example, consider how a generic script that expresses the anatomy of a current type of fraud may be used to comprehend its new digital forms. This modelling activity provides new insights into individual frauds while also highlighting significant features that can be used to guide the development of crime analysis systems (Rossey, & Ribaux, 2020).

However the studies mentioned above focused on issues faced by the police department and why they consider fraud as not a serious crime and also about all the facilities they are not provided with to look out for such crimes and investigate them. But it failed to know their perspectives about these crimes or about how much of knowledge and awareness they have about banking frauds. It also failed to find alternatives and suggestions for further development and also how much effort they have put in order to improve the system and bring a change.

This study provides information about debit and credit card frauds that are difficult to track down, as well as the problems and difficulties that police officers and lawyers encounter in such cases. These are crimes in which there is no crime scene, it is a faceless crime, and it is committed using a network management system or

The details on various domains of the questionnaire along with number of questions given below for police.

Sl no	Domains	No. of statements	Statement numbers
1	General Awareness	21	1-21
2	Opinion based	29	22-50
3	Preventive Measures	14	51-64
	Total	64	1-64

Procedure:

The researcher took permission from the respected authorities to carry the research study. The research visited each participant and explained the purpose of the study. Later, the structured questionnaire was given to the participants with clear instructions. The participants were requested to answer all the statements to avoid respondent mortality. Any doubts or difficulty to understand statements, the research explained it clearly to the participants. The researcher also mentioned that they were so no time limit to answer the statements and asked the participants to answer genuinely. After collection of the data, they were scored and analysed

the internet, where information is stored in binary form and is found using the relevant debit and credit cards. If obvious trends are available based on the current state of both physically and technologically, it is valuable for future inquiry. It can avoid further debit and credit card fraud if professionals recommend and apply problem-solving strategies based on proper research and implement the findings of the research outcomes to prevent the different types of card frauds.

Method:

Data: The data was collected from 100 Police officials. The participants were randomly selected from different cyber police stations of Bengaluru city. There were 65 Policemen and 35 policewomen in the study. Age-wise, there were 37% of them below <35 years, while there were 46% of them between 36-45 years of age while the remaining 17% of them were above 45 years of age.

Tools employed: The questionnaire consists of 64 questions for Police officials with close ending as “Yes” or “NO” responses. It was prepared by the researcher, consultation with the research Supervisor, Associate Professor & Chairman, Dr. G. S. Venumadhva The Dept of Criminology and Forensic Science, Karnataka University Dharwad

using SPSS for Windows. The study used descriptive statistics which included frequency, percentage, mean and standard deviation along with inferential statistics which included chi-square, t-test and one-way ANOVA. The findings were drawn and discussed with supporting literature later.

Results:

Table 1 shows the Frequency and Percent distribution of Police officers on Levels of awareness, opinion, knowledge on preventive measure and total Perception regarding credit/debit card frauds

Variables	Levels	Frequency	Percentage
Awareness	Low	1	1.0
	Medium	24	24.0
	High	75	75.0
Opinion	Low	-	-
	Medium	1	1.0
	High	99	99.0
Preventive	Low	-	-
	Medium	7	7.0
	High	93	93.0

Total	Low	-	-
	Medium	1	1.0
	High	99	99.0

Awareness: We see that 75% of the police officers had high level of awareness on credit/debit card frauds while 24% of them had medium level of awareness and 1% of them had low level of awareness.

Opinion: There were 99% of the police officers who had high level of opinion on credit/debit card frauds while 1% of them had medium level of opinion.

Preventive measures: The table shows that 93% of the police officers had high level of knowledge on

preventive measures of credit/debit card frauds while 7% of them had medium level of knowledge on the same.

Total: On total perception of credit/debit card frauds, 99% of them had high level of perception while 1% of them had low level of perception.

Table 2 shows the Expected and observed mean on components of Perception towards debit/credit card frauds and test statistics

Variables	Expected Mean	Observed Mean	Std. Deviation	Test statistics
Awareness	29.00	22.47	3.010	t= -21.695; p= .001
Opinion	48.00	42.65	2.409	t= -22.204; p= .001
Preventive Measures	31.00	24.94	2.330	t= -26.004; p= .001
Total	108.00	90.06	4.589	t= -39.086; p= .001

Awareness: The expected and observed mean scores of police officers on the awareness of credit/debit card frauds was seen to be 29 and 22.47 respectively. The One-sample t-test revealed a significant difference (t= -21.695; p= .001) which indicates that the police officers had level mean scores on awareness of credit/debit card frauds.

Opinion: The expected mean score of police officers on opinion on credit/debit card frauds was 48 while the observed mean score was 42.65. The One-sample t-test revealed a significant difference (t= -22.204; p= .001) indicating that the mean scores of police officers on opinion on credit/debit card frauds was low.

Preventive measures: The expected and observed mean scores of police officers on knowledge of preventive measures of credit/debit card frauds were 31 and 24.94 respectively. The One-sample t-test revealed a significant difference (t= -26.004; p= .001) indicating low knowledge on preventive measures of credit/debit card frauds among police officers.

Total: On total perception of credit/debit card frauds, the expected and observed mean scores of police officers were 108.00 and 90.06 respectively. The One-sample t-test revealed a significant difference (t= -39.086; p= .001) which indicates that the observed mean was lower than the expected mean score for the police officers.

Table 3 shows the Mean scores of components of Perception towards debit/credit card frauds by gender and test statistics

	Gender	Mean	Std. Deviation	Test Statistics
Awareness	Male	22.43	3.061	t= -.177
	Female	22.54	2.953	p= .860
Opinion	Male	42.60	2.898	t= -.281
	Female	42.74	1.038	p= .779
Preventive	Male	25.26	1.946	t= 1.905
	Female	24.34	2.848	p= .060
Total	Male	90.29	4.547	t= .688
	Female	89.62	4.703	p= .493

Awareness: It was observed that male police had a mean score of 22.43 and female had a mean score of 22.54 on Awareness regarding Credit/Debit card frauds. Further, the independent sample t-test revealed a non-significant difference (t= -.177; p= .860) indicating similarity in the

Awareness regarding Credit/Debit card frauds among Policemen and Policewomen.

Opinion: Policemen had mean score of 42.60 while Policewomen 42.74 on opinion regarding Credit/Debit

card frauds. However, the independent sample t-test revealed a non-significant difference ($t = -.281$; $p = .779$) indicating male and female police had similar opinion regarding Credit/Debit card frauds.

Preventive: The mean score of Male police was 25.26 and female 24.34 on knowledge regarding preventive measures. Further, the independent sample t-test revealed a non-significant difference ($t = 1.905$; $p = .060$) indicating similarity in the mean scores.

Total: It was observed that Policemen had a mean score of 90.29 while policewomen had a mean score of 89.62 on total perception regarding Credit/Debit card frauds. The independent sample t-test revealed a non-significant difference ($t = .688$; $p = .493$) revealing that both male and female police officers had similar perception on Credit/debit card frauds.

Table 4 shows the Mean scores of components of Perception towards debit/credit card frauds by Age groups and test statistics

		Mean	Std. Deviation	Test statistics
Awareness	<35	22.10	3.247	F= .923 p=.401
	36-45	22.91	2.950	
	45+	22.05	2.609	
	Total	22.47	3.009	
Opinion	<35	43.10	.906	F= 3.068 p=.050
	36-45	42.73	1.124	
	45+	41.41	5.327	
	Total	42.65	2.409	
Preventive	<35	24.97	2.179	F= .797 p=.454
	36-45	24.69	2.554	
	45+	25.52	2.003	
	Total	24.94	2.330	
Total Perception	<35	90.18	4.175	F= .553 p=.577
	36-45	90.34	4.285	
	45+	89.00	6.164	
	Total	90.06	4.589	

Awareness: The table shows that police officers below 35 years had a mean score of 22.10 on awareness regarding credit/debit card frauds while the mean scores of police officers within 36-45 years and above 45 years were 22.91 and 22.05 respectively. The One-way ANOVA test revealed a non-significant difference ($F = .923$; $p = .401$) which shows that police officers of different age groups had similar mean scores on awareness of credit/debit card frauds.

Opinion: The mean scores of police officers below 35 years, 36-45 years and above 45 years were 43.10, 42.73 and 41.41 respectively on opinion regarding credit/debit card frauds. The One-way ANOVA test revealed a non-significant difference ($F = 3.068$; $p = .050$) which indicates that the mean scores of police officers of different age groups had similar mean scores on opinion regarding credit/debit card frauds.

Preventive measures: We see that police officers below the age of 35 years had a mean score of 24.97 while the

mean scores of police officers within 36-45 years and above 45 years were 24.69 and 25.52 respectively. The One-way ANOVA test revealed a non-significant difference ($F = .797$; $p = .454$) indicating that police officers had similar mean scores irrespective of their age groups.

Total: It was observed that police officers below 35 years had a mean score of 90.18 while police officers within 36-45 years and above 45 years had a mean score of 90.34 and 89 on the total perception of credit/debit card frauds. The One-way ANOVA test revealed a non-significant difference ($F = .553$; $p = .577$) which indicates that the mean scores on total perception were more or less similar across different age groups of police officers.

Table 5 shows the Mean scores of components of Perception towards debit/credit card frauds by Professional rank and test statistics

		Mean	Std. Deviation	Test Statistics
Awareness	Police Constable	22.51	3.327	F= .463 p= .709
	Head Constable	22.79	2.614	
	Ass Sub Inspector	21.60	2.716	
	Sub Inspector	22.09	3.238	
	Total	22.47	3.009	
Opinion	Police Constable	43.06	1.009	F= 3.377

	Head Constable	42.50	.929	p= .021
	Ass Sub Inspector	40.60	6.963	
	Sub Inspector	43.27	1.009	
	Total	42.65	2.409	
Preventive	Police Constable	24.40	2.443	F= 1.516 p= .215
	Head Constable	25.44	2.162	
	Ass Sub Inspector	25.20	2.616	
	Sub Inspector	25.36	1.858	
	Total	24.94	2.330	
Total Perception	Police Constable	89.97	4.408	F= 1.468 p= .228
	Head Constable	90.73	3.847	
	Ass Sub Inspector	87.40	7.705	
	Sub Inspector	90.72	3.408	
	Total	90.06	4.589	

Awareness: The mean scores of police constables and head constables were 22.51 and 22.79 respectively on the awareness regarding credit/debit card frauds. Furthermore, the mean scores of Asst. Sub inspectors and Sub inspectors were 21.60 and 22.09 respectively. The One-way ANOVA test revealed a non-significant difference ($F= .463$; $p= .709$) indicating that the mean scores of police officers were similar irrespective of their professional ranks.

Opinion: The mean scores of Police constables, Head constables, Asst. Sub inspectors and Sub inspectors were 43.06, 42.50, 40.60 and 43.27 respectively on the opinion regarding credit/debit card frauds. The One-way ANOVA test revealed a significant difference ($F= 3.377$; $p= .021$) which indicates that the mean scores of police constables was the highest in the group.

Preventive measures: We see that the mean score of police constables was 24.40 while the mean score of head constables was 25.44 on knowledge regarding credit/debit card frauds. However, the mean score of Asst. Sub inspectors and Sub inspectors were 25.20 and 25.36 respectively. The One-way ANOVA test revealed a non-significant difference ($F= 1.516$; $p= .215$) which indicates that the pattern mean scores of police officers remained the same irrespective of their professional ranks.

Total: The mean scores of police constables and head constables were 89.97 and 90.73 respectively. Furthermore, the mean scores of Asst. sub inspectors and Sub inspectors were 87.40 and 90.72 respectively. The One-way ANOVA test revealed a non-significant difference ($F= 1.468$; $p= .228$) indicating that police officers had similar mean scores on total perception of credit/debit cards irrespective of their professional ranks

Major findings of the study:

- 75% of the police officers had high level of Awareness, while 99% of the officers had high level opinion and 93% of the officers had high level of knowledge regarding Preventive measures.

- All the Police officers had significantly lesser score on Awareness, opinion, knowledge regarding preventive measures and Total perception regarding Credit/Debit card frauds.
- Male and female Police did not significantly differ on Awareness, opinion, knowledge regarding preventive measures and Total perception regarding Credit/Debit card frauds.
- Police officers in different age groups did not significantly differ on Awareness, knowledge regarding preventive measures and Total perception regarding Credit/Debit card frauds. However, on opinion, Police below the age of 35 years had significantly higher score.
- Police officers with Professional rank did not significantly differ on Awareness, knowledge regarding preventive measures and Total perception regarding Credit/Debit card frauds. Further on opinion, Sub-Inspectors had significantly higher score while assistant sub-inspector had significantly lower score.

Police officers are the Police reported cases go to help when Credit/Debit card frauds or any other financial frauds have taken help. Therefore, they are assumed to have good awareness and prevention ideas about it. There has been and will always be a never-ending race between the Police officials and the Criminal as the realm of financial crimes is not an exception (Burns, et.al, 2004). The police officials who participated in the survey were provided with questions related to awareness, opinions, and knowledge regarding preventive measures and total perception regarding Credit/Debit card fraud which included questions such as their knowledge of the IT laws, how to handle fraud-related crimes, etc and the scores were displeasing as the officials scored significantly fewer scores under all the above criterias.

Male and female Police did not significantly differ in Awareness, opinion, knowledge regarding preventive measures, and Total perception regarding Credit/Debit card frauds. Similarly, Police officers with different educational qualifications did not significantly differ in

Awareness, opinion, knowledge regarding preventive measures, and Total perception regarding Credit/Debit card frauds. Though there was not much difference in scores of police officers from different age groups, police officers above the age of 35 had significantly higher scores, this might be because of their experience in their field and they might have come across such cases during their service and might have eventually gained information from it.

Further on opinion, Sub-Inspectors had significantly higher scores while assistant sub-inspector had a significantly lower score. The experience and exposure come into consideration here, as Sub inspectors are in charge of other police personnel, they gradually come across every case that comes to their police station. The government should make sure that officials are trained and provided with information to assess a financial fraud case. With the ever-increasing financial well-being, the instances of financial fraud are expected to increase. Under such a scenario, the Police officers need to be well trained to face the possible eventualities (Beek, 2016). Police should evolve and improve their SoPs, especially when dealing with economic crimes in cyberspace. Police officers on the front lines of dealing with financial fraud should be appropriately taught, with adequate provisions for upgrading their learning and knowledge through timely inputs and interventions. In this aspect, society has a significant and constructive role to play. To avoid possible instances of financial fraud, police officers must stay ahead of the curve.

Conclusions:

The data purely focused on the individuals involved in protecting the society from financial fraud such as Police officials. The questionnaires were formed to obtain their take on Awareness, opinion, knowledge regarding preventive measures, and Total perception regarding Credit/Debit card frauds. It was disappointing to find that all three of them significantly scored fewer scores in the criteria's presented. Though there were some exceptions with rank, age, and gender, the majority of them were not aware of the precautions that were needed to be taken by individuals in the society to protect themselves from being a victim of financial fraud. It was clear that Police officials do have significantly higher levels of perception towards debit/and credit card frauds. However, training can be given to the lower cadre Police also to strengthen the system. The policy makers and stakeholders should add policies and enrol ethical hacking with cooperation of law enforcement- agencies which can strengthen the cyber system of the nation.

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