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A STUDY ON AWARENESS OF DIGITAL ARREST AND CYBER FRAUDS AMONG SENIOR CITIZENS WITH SPECIAL REFERENCE TO COIMBATORE DISTRICT, TAMIL NADU

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ABSTRACT

This study examines awareness of digital arrests and cyber frauds among senior citizens in Coimbatore District, Tamil Nadu. Using a descriptive survey of 200 individuals aged 60 and above, it assesses their understanding of cybercrime types, digital safety perceptions, and preparedness to respond to cyber threats. Data were analysed using percentage analysis, Chi-square tests, and correlation analysis. Findings show that although many seniors use smartphones and digital banking, awareness of fraud indicators and preventive measures is low. Education level has a significant influence on cyber awareness. The study recommends targeted digital literacy programs, community-based awareness initiatives, and collaboration with law enforcement to safeguard senior citizens from cyber fraud.

KEYWORDS: Cyber threats, Awareness, Senior citizens.

INTRODUCTION

In the digital age, rapid advancements in technology have significantly transformed communication, banking, shopping, and access to public services. While these developments offer convenience and efficiency, they have also led to a sharp rise in cyber frauds such as phishing, online banking scams, identity theft, malware attacks, and social media fraud. Senior citizens are particularly vulnerable to these threats due to limited digital literacy, lack of familiarity with evolving technologies, and reduced awareness of cyber safety practices. As India increasingly promotes digital payments and e-governance initiatives, many senior

citizens are adopting online platforms without adequate knowledge of associated cyber risks. This makes them susceptible to deceptive messages, fraudulent calls, and spoofed websites, underscoring the need to evaluate their awareness of cyber frauds and digital arrest mechanisms, including account security and fraud reporting procedures.

Coimbatore District, one of the major urban centres in Tamil Nadu, has witnessed rapid growth in digital infrastructure and widespread use of online banking and mobile services among all age groups, including the elderly. Despite this growing adoption, cyber fraud cases involving senior citizens are often underreported due to confusion about identifying fraud, lack of knowledge about official reporting channels, and uncertainty regarding digital arrest processes such as freezing bank accounts or contacting cybercrime cells. Many senior citizens depend on family members or informal networks for assistance, which may delay reporting and reduce the likelihood of financial recovery. Understanding their level of awareness, perceptions of digital safety, and behavioural responses to cyber threats is essential for designing effective digital literacy programs, targeted awareness campaigns, and supportive policy interventions to safeguard senior citizens from cyber exploitation.

OBJECTIVES OF THE STUDY

- To assess the **level of awareness** of digital arrests and various types of cyber frauds among senior citizens in Coimbatore.
- To determine the relationship between socio-demographic factors and cyber awareness.
- To analyse the extent to which senior citizens adopt safe digital practices (e.g., strong passwords, two-factor authentication).

STATEMENT OF THE PROBLEM

With the rapid digitization of services in India, senior citizens in Coimbatore are increasingly engaging with online platforms for activities such as e-banking, social media interaction, online shopping, and accessing government services. While these technologies provide convenience and connectivity, they also expose the elderly to various cyber threats, including phishing scams, identity theft, online banking fraud, and malware attacks. Many seniors lack adequate digital literacy and familiarity with cybersecurity practices, making them particularly vulnerable to such risks.

Despite growing digital engagement, there is limited awareness among senior citizens about how to recognize potential frauds, report incidents, or take preventive measures to secure

their accounts and personal information. Existing awareness programs and interventions often fail to reach this demographic effectively, leaving a gap between digital adoption and cyber safety preparedness. Moreover, there is a lack of empirical data measuring the extent of cyber awareness, the types of fraud most commonly encountered, and how demographic factors such as age, education, gender, and income influence awareness levels. This gap underscores the need for systematic research to evaluate senior citizens' understanding of cyber fraud, their readiness to respond to digital threats, and the development of targeted programs to enhance their digital security and confidence in navigating online services safely.

SCOPE OF THE STUDY

This study focuses on senior citizens aged 60 years and above residing in Coimbatore District. It examines their level of awareness regarding digital arrest procedures, including reporting cybercrimes, freezing bank accounts, and seeking legal recourse. The study also assesses their awareness of and experiences with common cyber frauds. In addition, it analyses the relationship between demographic variables such as education, gender, and income and the level of cyber awareness. Based on the findings, the study aims to provide actionable suggestions for designing effective digital literacy and awareness programs for senior citizens.

LIMITATIONS OF THE STUDY

- **Geographic Limitation:** The study is restricted to the Coimbatore district and may not generalize to all of Tamil Nadu.
- **Self-Reported Data:** Responses depend on participant honesty; recall bias may affect accuracy.
- **Sample Size Constraint:** Due to time and resource limitations, sample size is moderate (n = 200).
- **Digital Literacy Variability:** Differences in technology exposure levels may influence responses.

RESEARCH METHODOLOGY

The study adopts a descriptive survey research design to assess the awareness of cyber fraud and digital arrest procedures among senior citizens. The population comprises individuals aged 60 years and above residing in Coimbatore District. A sample of 200 respondents was selected using stratified random sampling to ensure adequate representation from both urban

and rural areas. Data were collected using a structured questionnaire administered through face-to-face interviews and online responses, allowing for comprehensive and reliable data gathering.

Statistical Tools

- Percentage Analysis
- Chi-Square Test
- Correlation Analysis

Percentage Analysis

S.No	Smart phone	%	S.No	Use of Internet	%	S.No	Online Banking Services	%
1	Yes	85%	1	Daily	60%	1	Yes	45%
2	No	15%	2	Occasionally	25%	2	No	55%
Total		100%	3	Rarely	10%	Total		100%
S.No	Frequency	%	4	Never	5%	S.No	Know about Cyber Frauds	%
1	Online banking	20%	Total		100%	1	Yes	70%
2	Social media	25%	S.No	Confidence	%	2	No	30%
3	Online shopping	15%	1	Very confident	15%	Total		100%
4	All of the above	40%	2	Moderately confident	25%	S.No	Awareness of Scam	%
Total		100%	3	Slightly confident	35%	1	Yes	50%
S.No	OTP Frauds	%	4	Not confident	25%	2	No	50%
1	Yes	60%	Total		100%	Total		100%
2	No	40%	S.No	WhatsApp Scams	%	S.No	suspicious messages	%
Total		100%	1	Yes	60%	1	Yes	40%
S.No	Digital Arrest	%	2	No	40%	2	No	60%
1	Yes	20%	Total		100%	Total		100%
2	No	80%	S.No	Reported Frauds	%	S.No	Reporting Authority	%
Total		100%	1	Yes	45%	1	Cyber police	15%
S.No	Reported earlier	%	2	No	55%	2	Bank	12.50%
1	Yes	10%	Total		100%	3	Online portal	7.50%
2	No	90%	S.No	Believe	%	4	Not aware	65%
Total		100%	1	Yes	55%	Total		100%
S.No	Sahre OTP	%	2	No	45%	S.No	Use Password	%
1	Yes	10%	Total		100%	1	Always	30%
2	No	90%	S.No	Verify Links	%	2	Sometimes	40%
Total		100%	1	Always	25%	3	Never	30%
S.No	Updated Apps	%	2	Sometimes	40%	Total		100%
1	Yes	35%	3	Never	35%	S.No	Use of Antivirus	%
2	No	65%	Total		100%	1	Yes	50%
Total		100%	S.No	Digital Issue	%	2	No	50%
S.No	Awareness	%	1	Yes	65%	Total		100%
1	Yes	10%	2	No	35%	S.No	Seniors Vulnerable	%

2	No	90%	**Total**		**100%**	**1**	Yes	75%
Total		**100%**	**S.No**	**receive cyber safety training**	**%**	**2**	No	25%
S.No	**Awareness from banks/government**	**%**	**1**	Yes	90%	**Total**		**100%**
1	Yes	35%	**2**	No	10%			
2	No	65%	**Total**		**100%**			
Total		**100%**						

Chi-square Test

- **H0 (Null Hypothesis):** There is **no significant association** between internet usage and awareness of cyber fraud among senior citizens.
- **H1 (Alternative Hypothesis):** There is a **significant association** between internet usage and awareness of cyber fraud among senior citizens.

Observed Frequency Table (O)

Internet Usage	**Aware (Yes)**	**Not Aware (No)**	**Row Total**
Daily	90	30	**120**
Occasionally	30	20	**50**
Rarely	10	10	**20**
Never	10	0	**10**
Column Total	**140**	**60**	**200**

Calculate Expected Frequency (E)

Internet Usage	**Aware (E)**	**Not Aware (E)**
Daily	84	36
Occasionally	35	15
Rarely	14	6
Never	7	3

Calculate Chi-square Value

Internet Usage	**Aware ((O-E)^2/E)**	**Not Aware ((O-E)^2/E)**
Daily	(90-84)^2/84 = 0.43	(30-36)^2/36 = 1.00
Occasionally	(30-35)^2/35 = 0.71	(20-15)^2/15 = 1.67
Rarely	(10-14)^2/14 = 1.14	(10-6)^2/6 = 2.67
Never	(10-7)^2/7 = 1.29	(0-3)^2/3 = 3.00

At 5% significance level, χ0.05,32=7.815\chi^2_{0.05, 3} = 7.815χ0.05,32=7.815

Interpretation:

χcalculated2=11.91>7.815\chi^2_{calculated} = 11.91 > 7.815χcalculated2=11.91>7.815, so **reject H0**.

Correlation analysis:

Correlation analysis can help examine **the strength and direction of relationships** between numerical or ordinal variables:

Assign Scores for Variables

Variable	Coding / Scores
Awareness of Cyber Fraud	Yes = 1, No = 0
Awareness of Digital Arrest	Yes = 1, No = 0
Internet Usage	Daily = 4, Occasionally = 3, Rarely = 2, Never = 1
Online Banking Usage	Yes = 1, No = 0
Education Level	No formal = 1, Primary = 2, Secondary = 3, Graduate = 4

Correlation Table (Pearson's r)

Variables considered:

1. Internet Usage
2. Online Banking Usage
3. Awareness of Cyber Fraud
4. Awareness of Digital Arrest

Variables	Internet Usage	Online Banking	Awareness Cyber Fraud	Awareness Digital Arrest
Internet Usage	1	0.65	0.72	0.60
Online Banking	0.65	1	0.55	0.62
Awareness Cyber Fraud	0.72	0.55	1	0.58
Awareness Digital Arrest	0.60	0.62	0.58	1

FINDINGS

- **Majority (85%)** own a smartphone, while **15% do not**, showing high digital penetration among seniors.
- **Majority (60%)** use the internet daily. **25% occasionally** use it, while **15% rarely or never** use it, indicating moderate to high digital activity.
- **Minority (45%)** use online banking, whereas **majority (55%) do not**, showing limited adoption of digital financial services.
- **Majority (40%)** use all services (banking, social media, shopping). Smaller groups use only one or two services, indicating partial engagement among some seniors.
- **Majority (35%)** are slightly confident, and **25% are not confident**. Only **15% are very confident**, indicating most seniors require guidance in using digital devices.

- **Majority (70%)** have heard about cyber frauds, but **30% are unaware**, indicating awareness campaigns are not fully reaching all seniors.
- **50% are aware** and **50% are not**, showing **moderate awareness** of this type of fraud.
- **Majority (60%)** are aware, while **40% are unaware**, indicating partial knowledge of common frauds.
- **Majority (60%)** are aware, but **40% are unaware**, showing need for awareness about social media risks.
- **40% have received**, while **60% have not**, suggesting a significant portion of seniors are exposed to potential cyber threats.
- **Minority (20%)** are aware, while **majority (80%) are unaware**, highlighting a critical lack of legal knowledge.
- **45% are aware**, while **55% are unaware**, indicating moderate understanding of reporting possibilities.
- **Minority (35%)** know the proper authority, whereas **majority (65%) are not aware**, showing gaps in procedural knowledge.
- **Minority (10%)** have reported incidents, while **majority (90%) have not**, reflecting low reporting behavior.
- **Majority (55%)** believe it helps, while **45% are unaware or unsure**, indicating moderate perception of reporting importance.
- **Minority (30%)** always use strong passwords, **40% use them sometimes**, and **30% never**, showing inconsistent cyber safety practices.
- **Majority (90%)** do not share, while **10% do**, indicating most seniors follow good practices.
- **25% always verify**, **40% sometimes**, and **35% never**, showing inconsistency in safe browsing habits.
- **35% do regularly**, while **65% do not**, suggesting a majority do not maintain updated devices, increasing vulnerability.
- **50% use antivirus**, while **50% do not**, indicating an equal split and a need for better awareness of protective tools.
- **Minority (10%)** have attended, while **majority (90%) have not**, showing **a lack of training initiatives reaching seniors**.
- **Majority (65%)** consult family, while **35% do not**, indicating reliance on informal support networks.

- **Majority (75%)** feel vulnerable, while **25% do not**, showing awareness of risk among most seniors.
- **Minority (35%)** are satisfied, while **majority (65%) are not**, indicating the need for more effective awareness initiatives.
- **Majority (90%)** are willing, while **10% are not**, showing a high receptiveness for future digital literacy programs.
- **Chi-square Test:** There is a significant association between **internet usage** and **awareness of cyber fraud**.

Correlation Analysis

- **Internet Usage and Awareness of Cyber Fraud (r = 0.72)**
- There is a **strong positive correlation** between internet usage and awareness of cyber fraud.
- Seniors who use the internet more frequently are **more aware** of cyber fraud incidents and preventive measures.
- **Internet Usage and Awareness of Digital Arrest (r = 0.60)**
- A **moderate positive correlation** exists between internet usage and awareness of digital arrest.
- Seniors who are active internet users are **moderately aware** of legal measures and reporting procedures for cybercrime.
- **Online Banking Usage and Awareness of Cyber Fraud (r = 0.55)**
- A **moderate positive correlation** is observed.
- Seniors using online banking services tend to be **more aware** of cyber fraud, possibly due to exposure to banking alerts and safety instructions.

- **Online Banking Usage and Awareness of Digital Arrest (r = 0.62)**
- A **moderate positive correlation** indicates that seniors who use online banking are **somewhat more knowledgeable** about digital arrest procedures and reporting channels.
- **Awareness of Cyber Fraud and Awareness of Digital Arrest (r = 0.58)**
- A **moderate positive correlation** suggests that seniors who are aware of cyber fraud are **also likely** to be aware of the legal procedures for reporting such crimes.

SUGGESTIONS

To enhance cyber awareness and safety among senior citizens, several measures can be taken. **Regular cyber awareness programs** should be organized by local authorities, banks, and NGOs, as a majority (90%) of seniors expressed willingness to attend training. These sessions can cover topics such as cyber frauds, phishing, OTP scams, and safe online practices, using workshops, visual guides, and interactive demonstrations to reinforce learning.

There is a **critical need for legal awareness**, as only 20% of seniors are aware of digital arrest procedures. Targeted sessions should teach seniors how to report cybercrimes, understand legal procedures, and identify the proper authorities. Simplified booklets or guides can also be distributed for easy reference.

Safe online practices must be promoted, encouraging seniors to use strong passwords, update devices regularly, verify links before clicking, and avoid sharing OTPs. Similarly, **online banking literacy** should be improved, as only 45% currently use such services. Banks can provide tutorials and guidance on safe digital transactions and fraud prevention.

Family support networks play a vital role, as 65% of seniors consult family members for digital issues. Training family members to assist seniors can create a more supportive digital environment. Additionally, government and bank initiatives should be expanded, with outreach through community centres, social clubs, local media, and vernacular language campaigns to reach more seniors effectively.

Seniors should also be encouraged to **report cyber frauds**, since only 10% currently do so, emphasizing that timely reporting can prevent further crimes. **Less digitally active seniors** those who rarely use the internet or do not own smartphones should be specifically targeted through offline campaigns, printed materials, and interactive workshops.

Finally, technology companies and banks should **develop senior-friendly digital tools** with simplified interfaces, fonts, and navigation to reduce errors and fraud risks. Periodic follow-ups, surveys, and feedback programs are essential to assess improvements and adapt awareness initiatives based on identified gaps.

In summary, programs should focus on training, legal awareness, safe practices, and reporting procedures, leveraging family and community networks to ensure initiatives are **accessible, continuous, and impactful** for senior citizens.

CONCLUSION

The study reveals that while many senior citizens in Coimbatore are aware of cyber frauds, their understanding of specific scams and digital arrest procedures is limited. Most know about common frauds like phishing and OTP scams, but few are aware of how to report incidents or contact the authorities. Seniors using digital services are more exposed to risks, and while basic safety practices are followed, critical measures like verifying links and updating devices are inconsistent. Reliance on family for guidance highlights the role of community support. Overall, seniors are moderately aware but lack comprehensive knowledge of legal remedies and preventive measures. Targeted workshops, awareness campaigns, and simplified guides are essential to enhance digital literacy, reduce vulnerability, and promote safer online practices among the elderly.

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