



MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

Identifying the Profile of Scam Victim: Unveiling Vulnerabilities Behind Personality

Full paper: Psychological Profiling of Scam Victim: A Discriminant Analysis

Muhammad Aqil Mustafa, Dr Shamala Ramasamy, Dr Fredrick Boholst
International Medical University

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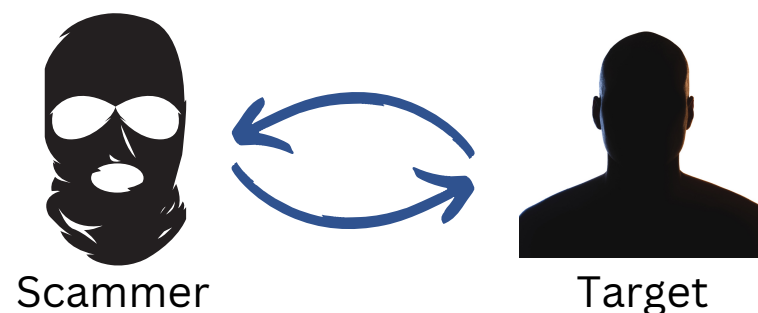


INTRODUCTION

DEFINITION

A fraudulent/ deceptive scheme designed to deceive individuals to gain valuable assets (money, personal information) through despicable means.

Tricking the victim into believing they are participating in a legitimate transaction



In 2022, more than 4,000 cases of online fraud have been reported
(MyCERT, 2023)

Online Purchase Scam
Investment Scam
Love Scam
Loan Scam
Employment Scam
Parcel Scam
Macau Scam
Phone & SMS Scam
Rental Scam

(Chapree, 2023)

OBJECTIVE

To discriminate the personality between the victim and the non victim

Personality

The Big-5 Trait

Openness
Conscientiousness
Extraversion
Agreeableness
Neuroticism

The Gullibility

- A characteristic of individuals who tend to **trust others easily without questioning** them
 - It refers to a person's inclination to accept false information; especially when there are **untrustworthy cues** present

The Susceptible to Persuasion

- The tendency of someone to **believe and comply with information they perceive as true**
- **Attracted, summoned, or felt responsible** for the narrative from the fraudster

RESEARCH QUESTIONS

- RQ1: Will the scam victim most likely be introverted, highly agreeable, low conscientiousness, highly neurotic and highly open to experience?
- RQ2: Will the scam victim most likely be gullible?
- RQ3: Will the scam victim most likely be susceptible to persuasion?

HYPOTHESES

- H1: People who are introverted, highly agreeable, low conscientiousness, highly neurotic, and highly open to experience are not likely to be a scam victim
- H2: Victims of a scam are unlikely to be gullible
- H3: Victims of a scam are unlikely to be susceptible to persuasion

METHODOLOGY

1

Research Design

Online Survey

2

Participants

82 respondents

3

Sampling

Purposive

4

Procedure

Distribution

5

Instruments

The B5-2-S

(Soto & John, 2017)

The Gullibility Scale

(Teunise et al., 2019)

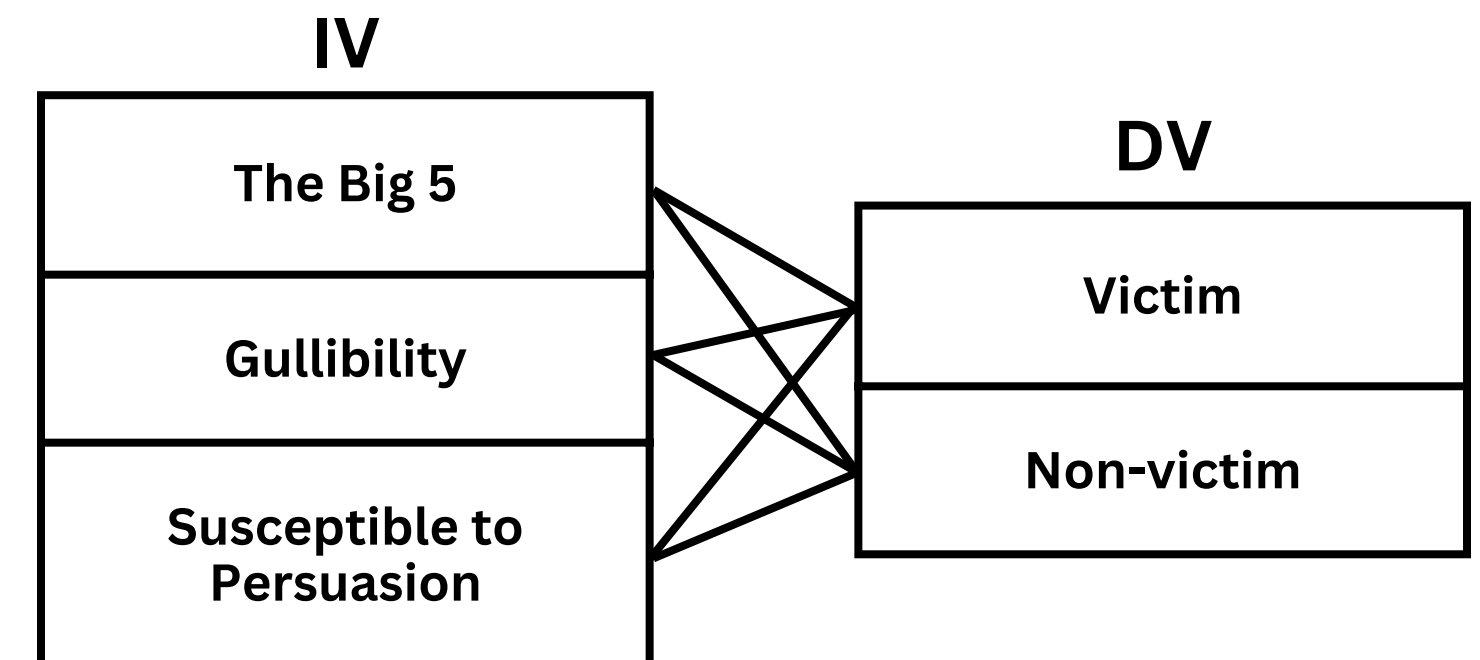
The StP II

(Modic et al., 2018)

DISCRIMINANT ANALYSIS

● To determine which variables **discriminate** between **two naturally occurring groups** or more

● Finding a **combination** of variables that maximizes the separation between the groups

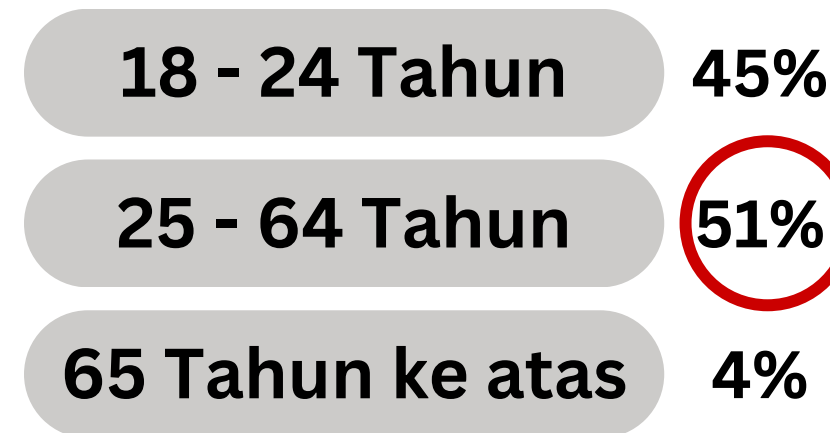


DEMOGRAPHIC

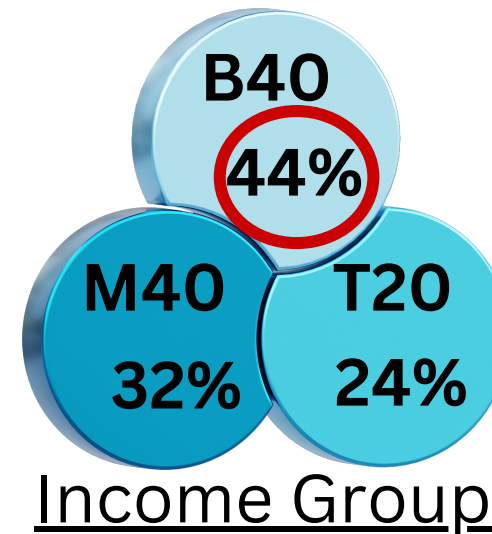
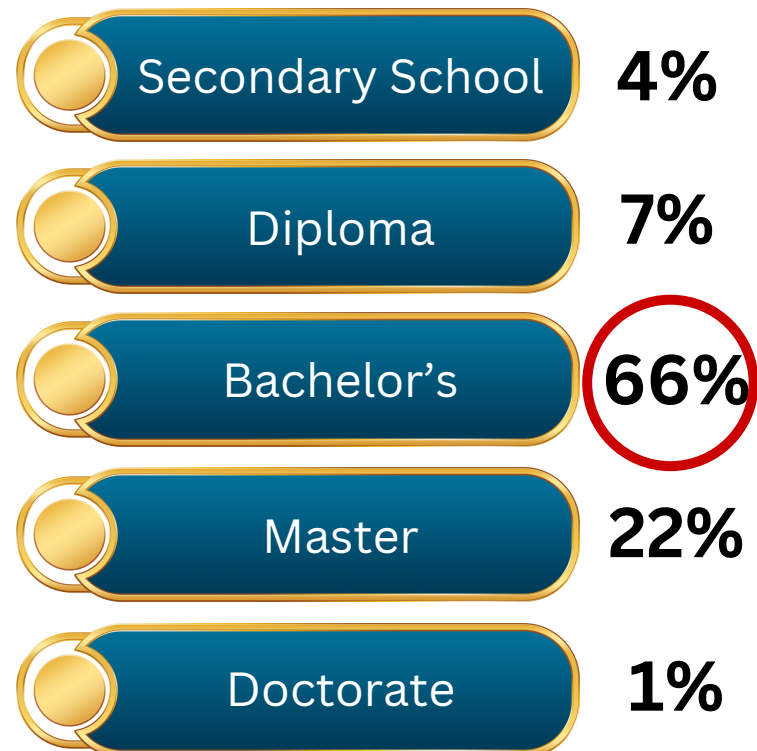
Gender



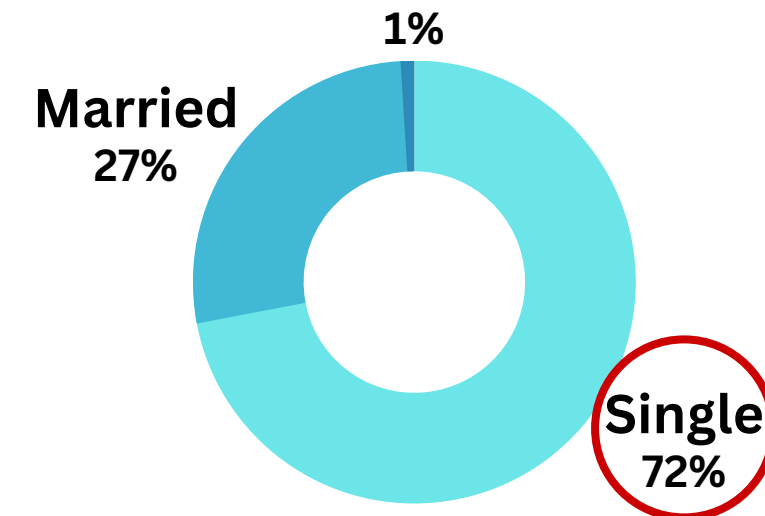
Age



Education Level



Widowed



Marriage Status

RESULT

The Profile

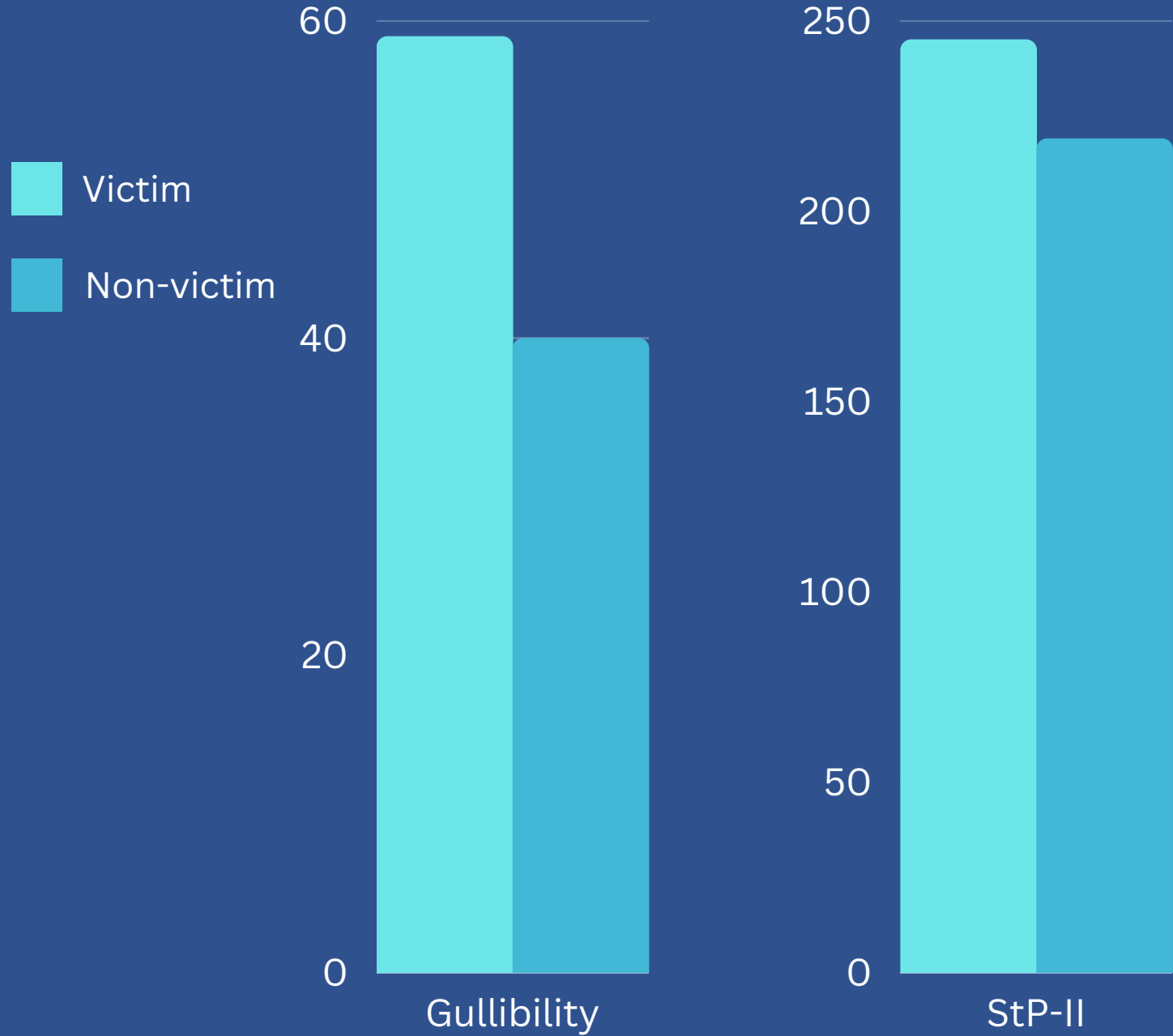


Table 2. Mean Comparison of Victim and Non-victims on Personality

Variables	Non-victim	Victim	Mean differences	F ratio	Sig.
Personality					
Extraversion	18.27	17.85	-0.42	.119	.731
Agreeableness	21.02	21.80	0.78	.646	.424
Conscientiousness	20.37	19.71	-0.66	.532	.468
Neuroticism	16.83	18.07	1.24	1.667	.200
Openness	20.41	19.78	-0.63	.885	.350
Gullibility	39.39	59.10	19.71	42.721**	<.001
Susceptible to persuasion	219.22	245.22	26.00	10.035*	.002

* $p < .05$, ** $p < .001$

Significance Differences
between the Victim and
the Non-victim

Gullibility;
 $F(1,80) = 42.721, p < .001$

Susceptible to persuasion;
 $F(1,80) = 10.035, p < .05$



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RESULT

Table 6. Ratio for Cases Selected from Personality

Actual group	No. of cases	Predicted membership			
		Correctly classified grouped		Cross validation	
		Non-victim	Victim	Non-victim	Victim
Non-victim	41	26 (63.4)	9 (22.0)	24 (58.5)	17 (41.5)
Victim	41	5 (12.2)	36 (87.8)	9 (22.0)	32 (78.0)
Percentage of 'grouped' cases correctly classified; 75.6% and 68.3% for cross validation. Numbers in italics indicate the row percentage					

Predicted Membership

75.6% correctly classified participants

Table 7. Wilk's Lambda Table (Personality)

Step	Number of Variables	Lambda	df1	df2	df3	Statistic	Exact F		Sig.
							df 1	df2	
1	1	.652	1	1	80	42.721	1	80	<.001
2	2	.595	2	1	80	33.773	2	79	<.001

Stepwise Estimation Method

2 significant variables in the combination

DISCUSSION

Why The Big-5 was not significant?

The Big-5 is not specifically linked to falling victim to a cyber scam since they are more descriptive than explanatory

The sample size was too small/too random

What's next?

- Replicate and extend the demographics and personality traits.
Demographics: study on IT literacy and cognitive affluent
Personality; MBTI, or MMPI-2
- Policymakers can apprehend the result and start developing a targeted preventive strategies.

CONCLUSION

The combination found in this study is gullibility and susceptibility to persuasion.

The personality profile of the scam victim found:

- **Highly gullible**
- **Highly susceptible to persuasion**

By acknowledging and understanding the role of personality traits, society can take proactive steps to **address vulnerabilities** and **enhance awareness**.

Integrating education, emotional intelligence, and open communication within a comprehensive framework facilitates the **cultivation of resilience** and **vigilance**, contributing to a more informed and empowered populace in the face of ever-evolving fraudulent tactics.

This study enriches the discourse surrounding scam victimization by unraveling the intricate psychological threads that underlie this pervasive issue.

REFERENCES

1. Malaysia Computer Emergency Response Team. Incident Statistics [Internet]. MyCERT. 2023 [cited 2023 Aug 30]. Available from: <https://www.mycert.org.my/portal/statistics-content?menu=b75e037d-6ee3-4d11-8169-66677d694932&id=4e056ced-6983-4487-a5d2-56c10879a24b>
2. Chapree C. PDRM Launches CCID Scam Response Centre To Cut Down Phone Scams - Lowyat.NET [Internet]. Lowyat.NET. 2021 [cited 2023 Aug 30]. Available from: <https://www.lowyat.net/2021/235967/pdrm-ccid-scam-response-centre-launch/>
3. Fintech News Malaysia. Malaysia Sets up National Scam Response Center to Coordinate Rapid Responses - Fintech News Malaysia. Fintech News Malaysia [Internet]. 2022 Oct 17 [cited 2023 Aug 30]; Available from: <https://fintechnews.my/33086/security/malaysia-sets-up-national-scam-response-center-to-coordinate-rapid-responses/>
4. Soto, C. J. (2018). Big Five personality traits. In M. H. Bornstein, M. E. Arterberry, K. L. Fingerman, & J. E. Lansford (Eds.), The SAGE encyclopedia of lifespan human development (pp. 240-241). Thousand Oaks, CA: Sage.
5. Kadoya, Y., Khan, M. S. R., & Yamane, T. (2020). The rising phenomenon of financial scams: evidence from Japan. Journal of Financial Crime, 27(2), 387–396. <https://doi.org/10.1108/jfc-05-2019-0057>
6. Whitty, M. T. (2020). Is there a scam for everyone? Psychologically profiling cyberscam victims. European Journal on Criminal Policy and Research, 26(3), 399–409. <https://doi.org/10.1007/s10610-020-09458-z>
7. Greenspan. Annals of Gullibility: Why We Get Duped and How to Avoid It. 1st ed. Praeger; 2008.
8. Teunisse AK, Case TI, Fitness J, Sweller N. I should have known better: Development of a Self-Report Measure of gullibility. Personality and Social Psychology Bulletin [Internet]. 2019 Jun 28;46(3):408–23. Available from: <https://doi.org/10.1177/0146167219858641>
9. Laroche H, Steyer V, Theron C. How Could You be so Gullible? Scams and Over-Trust in Organizations. Journal of Business Ethics [Internet]. 2018 Jun 23;160(3):641–56. Available from: <https://doi.org/10.1007/s10551-018-3941-z>
10. Mercier, H. Not Born Yesterday: The Science of Who We Trust and What We Believe. Princeton University Press; 2022
11. Nguyen A, Mosqueda L, Windisch N, Weissberger GH, Axelrod J, Han SD. Perceived types, causes, and consequences of financial exploitation: narratives from older adults. The Journals of Gerontology: Series B [Internet]. 2021 Jan 10;76(5):996–1004. Available from: <https://doi.org/10.1093/geronb/gbab010>
12. Mandel DR, Kapler IV. Cognitive style and frame susceptibility in Decision-Making. Frontiers in Psychology [Internet]. 2018 Aug 10;9. Available from: <https://doi.org/10.3389/fpsyg.2018.01461>
13. Modic D, Anderson R, Palomäki J. We will make you like our research: The development of a susceptibility-to-persuasion scale. PLOS ONE [Internet]. 2018 Mar 15;13(3):e0194119. Available from: <https://doi.org/10.1371/journal.pone.0194119>
14. Van De Weijer, S. G., & Leukfeldt, E. R. Big Five Personality Traits of Cybercrime Victims. Cyberpsychology, Behavior, and Social Networking, 20(7), 407–412. (2017). <https://doi.org/10.1089/cyber.2017.0028>
15. Dove, M. Predicting individual differences in vulnerability to fraud [PhD Dissertation]. University of Portsmouth. (2018).

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Vigilance - Resilience - Awareness

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