Social Ageing: Evaluating the Use of Digital Technologies to Engage the Elderly Socially

Prepared By: Chia Rui Yang (FTFNCE), Cheong Shiu Hong (FTFNCE), Glennis Lee Jun Wei (FTFNCE), Leroy Lim Yong Shen (FTFNCE)

Introduction

- Singapore is transforming into a digitally enabled nation.
- By 2030, the elderly will form 27% of population.
- Despite the Smart Nation initiative, the elderly population is not motivated to adopt digital technologies.
- We will examine the factors affecting use of phone applications due to its pervasiveness as a technology.

H_1: Elderly citizens who think mobile phone applications are useful, easy-to-use, gives them social influence, trust phone applications and have a good attitude towards phone applications (factors in the Almere) are more likely to use phone applications.

H_2: Elderly who do not live with younger generations will tend to use phone applications less frequently than younger elderly who live with younger generations.

H_3: Older elderly who receive higher education and have a higher household income per capita will tend to use phone applications more than elderly who receive lower to no formal education and have lower household income per capita.

H_4: Anxiety is a mediating variable between trust and use.

Methodology and Measures

Methodology

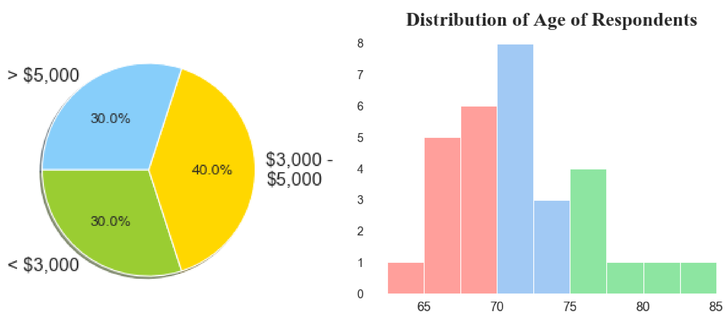
- Using Ordinary Least Squares (OLS) regression to test the Almere Model, demographic and socioeconomic variables.
- Interviews/surveys conducted in person.
- Respondents recruited via word of mouth.

Measures

- Dependent variable: index of usage of phone applications
- Survey consists of different categories of phone applications and purpose of use.
- All constructs were formulated by taking the mean score of responses on a Likert scale (Anxiety, Perceived Usefulness).

Chief Explanatory Variables

- Initial analysis consisted of social influence, attitude, perceived usefulness, trust and perceived ease of use as primary predictors of usage.



Findings

- Findings do not support H_1 with only the elderly who score higher on trust, social influence and perceived usefulness index having a higher score on the use index.
- Findings do not support H_2 that younger elderly are more likely to use phone applications that older elderly.
- Findings do not support H_3 as higher SES in elderly does not increase likelihood to use phone applications.
- Findings support H_4 based on the outcomes of our four models of regression analyses.

Linear Regression for Use Index of Phone Applications

	Model 1 Coefficient (Standard Error)	Model 2 Coefficient (Standard Error)	Model 3 Coefficient (Standard Error)	Model 4 Coefficient (Standard Error)
Psychological Factors				
Attitude Towards Technology	-0.62 (2.83)	-1.87 (2.72)		
Perceived Ease of Use	1.77 (1.85)	1.14 (1.76)		
Trust	5.33 (2.68)$^+$	3.17 (2.72)		
Social Influence	-3.12 (1.69)$^+$	-1.45 (1.78)		
Perceived Usefulness	3.30 (1.70)$^+$	3.00 (1.60)$^+$	2.36 (1.12)*	1.86 (1.31)
Anxiety		-4.99 (2.42)$^+$	-6.16 (1.38)***	-6.50 (1.65)**
Demographic Variables				
Age group (Ref. 65-70 years old)				
Between 71-75 years old inclusive			-3.38 (2.58)	-4.04 (2.86)
Over 75 years old			-10.83 (3.20)**	-10.41 (3.63)*
Types of Household (Ref. Two-generation household)				
Single-generation Household			7.03 (2.88)*	6.35 (3.34)$^+$
Three-generation Household			-0.57 (2.81)	-1.62 (3.05)
Socio-economic Variables				
Education (Ref. No Formal Education)				
Basic Education (Primary &Secondary School)				-0.72 (3.23)
Higher Education (Polytechnic, JC, ITE & University)				1.01 (3.60)
Household Income Per Capita (Ref. Between $3,000-$5,000)				
Under $3,000				-2.21 (2.82)
Over $5,000				-3.76 (3.18)
(Constant)	4.77 (9.98)	32.65 (16.49)$^+$	41.69 (7.24)***	43.12 (8.27)***
Adjusted R^2	0.43	0.49	0.72	0.69
Observations	30	30	30	30

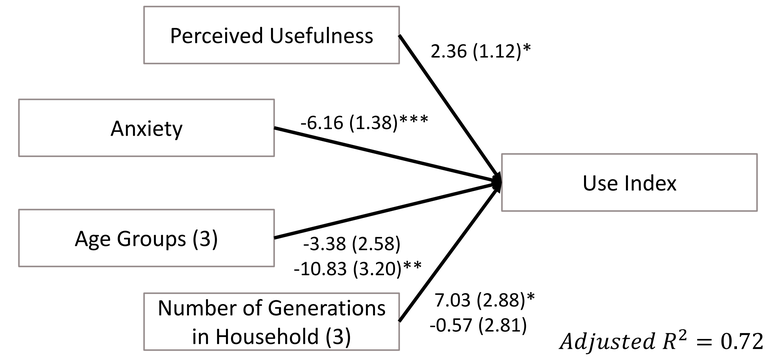
$^+$: p < 0.1. *: p < 0.05. **: p < 0.01. ***: p < 0.001.

Mediation Analysis on Use Index Against Trust and Anxiety

	Model 1 Coefficient (Standard Error)	Model 2^ Coefficient (Standard Error)	Model 3 Coefficient (Standard Error)
Trust	7.73 (2.14)**	-0.61 (0.17) **	3.83 (2.26)
Anxiety			-6.44 (2.09)**
(Constant)	5.40 (6.01)	5.11 (0.48)***	38.34 (11.90)**
Adjusted R^2	0.29	0.29	0.46
Observations	30	30	30

Note: ^Dependent variable = anxiety.

$^+$: p < 0.1. *: p < 0.05. **: p < 0.01. ***: p < 0.001.



Discussion

- Findings suggest that socioeconomic factors do not affect use of phone applications among the elderly.
- The constructs in the Almere Model do not fully support the use of phone applications.
- Perceived usefulness positively impacts phone application use.
- Anxiety is a complete mediator of trust in the context of the use of phone applications.
- Elderly living in single-generation households tend to use phone application more.

Recommendations

- Design of phone applications (Uncluttered, easy mistake recovery, large visible icons, less texts).
- User experience for phone applications should be easy to use and meets the needs of the elderly.
- Family members should encourage the elderly to use phone applications to communicate and connect (helps to promote digital literacy and enhance social intimacy).

Conclusion

- Are the elderly benefiting from technological advancements?
- Actual adoption is not consistent despite supporting literature.
- Prevalent issue identified as age being moderately significant in predicting usage.
- Perceived usefulness differs because of one's ability to learn diminishing as one ages.
- Important to tailor solutions to address these problems and provide adequate support for digital transition.

Future Research

- Systematic sampling on sample size > 30 with incentives & translators.
- Sample different geographical regions of Singapore.
- Study constituents of anxiety, relationship of trust and anxiety.
- Relationship between age and use of technology, age and willingness to learn.
- Further analysis of distributions across demographic categories.

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