Portable Privacy: Mobile Device Adoption

Joseph H. Schuessler

Bahorat Ibragimova

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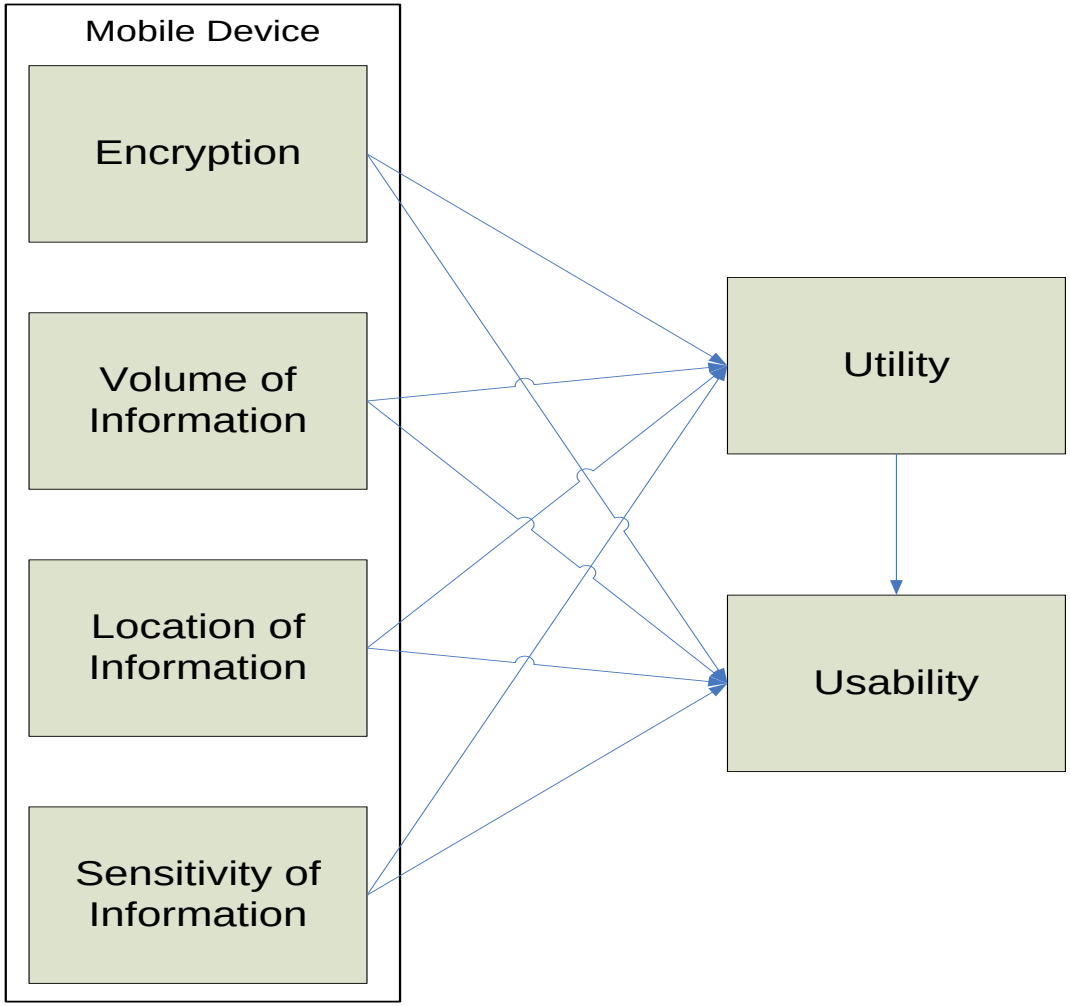
“Relying on the government to protect your privacy is like asking a peeping tom to install your window blinds.”

(John Perry Barlow)

Motivation

- What is information privacy?
- What are portable devices?
  - Examples
  - Characteristics
  - Uniqueness
- Relevance
- Purpose of research

Conceptual Model



Theoretical Background

- Privacy in online environments
- Consumer versus Organizational understanding of privacy
- Privacy versus Security
- Major drivers/inhibitors:
  - Sensitivity
  - Encryption
  - Location of data
  - Volume

Theoretical Background (Continued)

- Sensitivity
  - *H1a: Sensitivity will be negatively related to utility.*
  - *H1b: Sensitivity will be negatively related to intention to use.*
- Encryption
  - *H2a: Encryption will be related to utility.*
  - *H2b: Encryption will be related to intention to use.*
- Location
  - *H3a: Location of information will be related to utility.*
  - *H3b: Location of information will be related to intention to use.*
- Volume
  - *H4a: Volume of communication will be positively related to utility.*
  - *H4b: Volume of communication will be positively related to intention to use.*
- Utility and Intention to Use
  - *H5: Utility will be positively related to intention to use.*

Method

- Self-Administered Survey
- 339 Surveys were collected
- 322 usable
- 94.99% Response Rate
- Lisrel SEM

Method (Continued)

Exogenous Variable Factor Analysis	Encryption	Location	Sensitivity	Volume
(E1) Encryption helps protect my data on portable devices.	.815			
(E2) Information on portable devices has different encryption needs.	.798			
(E5) Transmissions of information between a portable device and other devices should be encrypted.	.719			
(L1) Portable devices are safe to store personal information on.		.742		
(L3) Information should be stored on portable devices rather than a backend database.		.847		
(L5) The location of information (whether on a portable device or in a backend database) should change depending on my needs.			.701	
(S1) Information stored on portable devices varies in their sensitivity.			.684	
(S3) The more sensitive information is, the more a portable device should secure that information.			.685	
(S4) There are different sensitivity levels of information stored on portable devices.			.727	
(V2) The more often I use a portable device, the less secure it will be.				.741
(V3) The volume of communication my portable device has with other devices increases the risk of stolen/captured information.				.683
(V4) Communication is less secure when there are many portable devices trying to communicate.				.757
(V5) Portable devices that automatically communicate with other devices are less secure.				.662
Cronbach's alpha	.722	.444	.706	.724
Total variance explained (59.990%)	17.40	17.07	15.41	10.11

Method (Continued)

Endogenous Variable Factor Analysis	Utility	Use
(T3) I am less likely to use portable devices that aren't secure.	.793	
(T5) I am more likely to use a portable device when my personal information is protected.	.758	
(T2) I would not use portable devices because of security concerns.	.713	
(U1) The utility of a portable device is strongly associated with the security of the technologies involved.		.763
(U5) Portable devices with many features are difficult to use.		.734
(T5) I am more likely to use a portable device when my personal information is protected.		.716
Cronbach's alpha	.647	.592
Total variance explained (58.261%)	30.86	27.40

Measurement Model

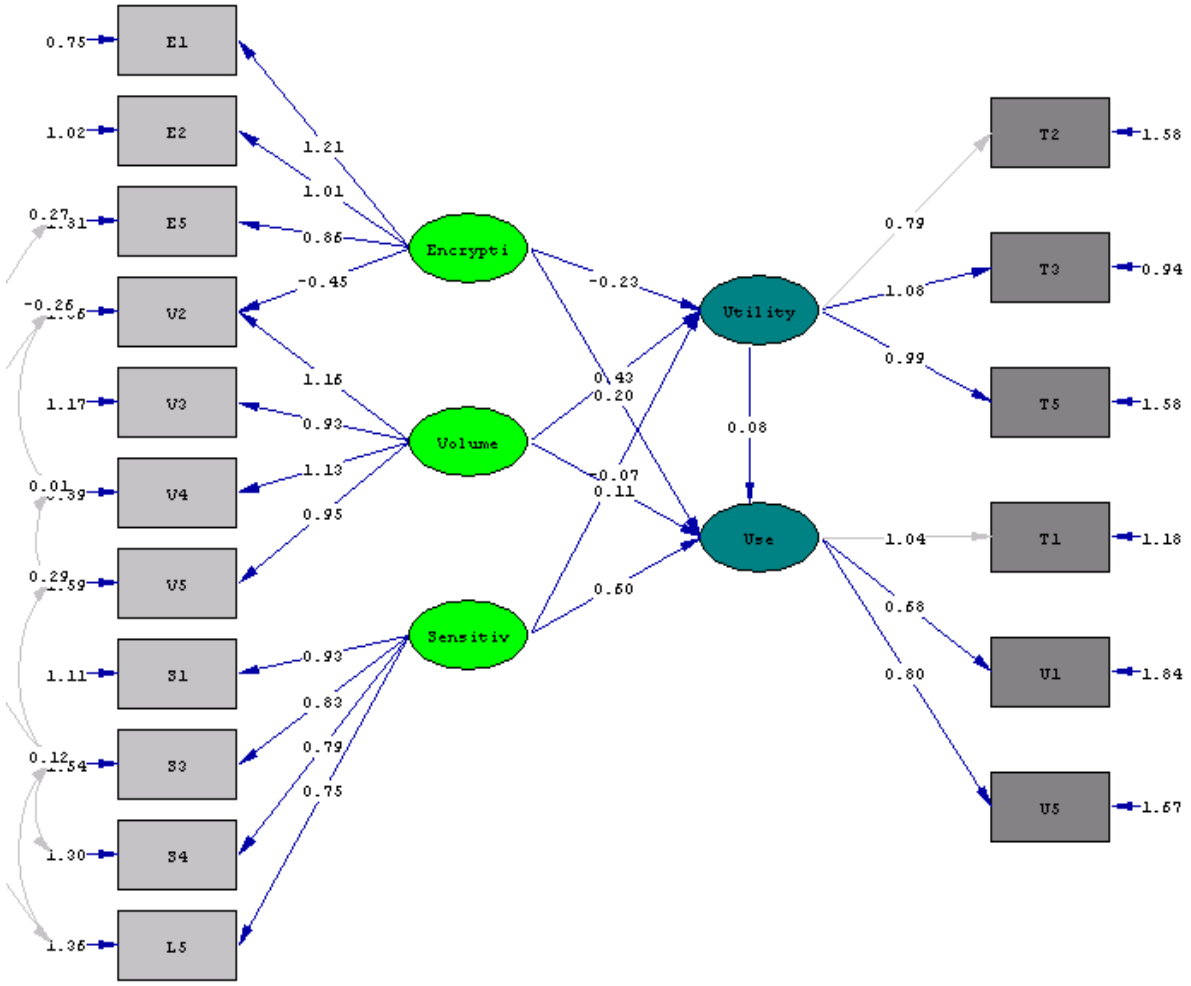
			Factor Structure Diagnostics				
	Reliability	X^2 (df)	P-Value	RMSR	GFI	AGFI	NFI
Encryption	0.722	0(0)	1.000	-	-	-	-
Volume	0.724	5.07(2)	0.079	0.043	1.00	0.98	0.99
Sensitivity	0.706	11.42(2)	0.003	0.057	0.99	0.95	0.98
Utility	0.647	0(0)	1.000	-	-	-	-
Use	0.592	0(0)	1.000	-	-	-	-

Structural Model

		Path	Hypotheses	Estimate	t-value
Test of Hypotheses:					
	Sensitivity to Utility	γ_{13}	1a	-0.07	-.55
	Sensitivity to Use	γ_{23}	1b	0.6	5.05*
	Encryption to Utility	γ_{11}	2a	-0.23	-2.23*
	Encryption to Use	γ_{21}	2b	0.2	2.03*
	Location to Utility	γ_{14}	3a	-	-
	Location to Use	γ_{24}	3b	-	-
	Volume to Utility	γ_{12}	4a	0.43	3.98*
	Volume to Use	γ_{22}	4b	0.11	1.04
	Utility to Use	β_{21}	5	0.08	.89
Global Model Fit Diagnostics:					
	Chi-squared	164.1			
	Degrees of Freedom	108			
	P-value	0.000			
	GFI	0.940			
	AGFI	0.920			
	RMSR	0.120			
	Bentler & Bonett's NFI	0.930			
	Bentler's CFI	0.970			

(*Significant at the .05 level)

LISREL SEM



Chi-Square=164.10, df=108, P-value=0.00041, RMSEA=0.040

Discussion

- Sensitivity
- Encryption
- Volume
- Utility

Limitations/Conclusions

- Purpose of use of portable devices
- Contributions
  - Practitioners
  - Researchers
- Closing thoughts

Questions

- Contact Information:
  - Joseph H. Schuessler
  - 2122 W Prairie
  - Denton, Texas 76201
  - joseph.schuessler@schuesslersounds.com
  - http://joseph.schuesslersounds.com