

AN ENHANCED FEAR APPEAL RHETORICAL FRAMEWORK: LEVERAGING THREATS TO THE HUMAN ASSET THROUGH SANCTIONING RHETORIC

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Appendix A

Fear Appeal Rhetoric

Password Theft Fear Appeal (Password Change Response)

There have been frequent recent reports of increased threats to our computers and to data stored on the network. Our computers may be under attack by individuals and software designed to capture the password you use to log you into the network. Hackers can now use various technologies and techniques to capture or guess your password so they can gain access to your files.

Changing your password more frequently is an easy and effective way to counter this threat and protect your personal computer and your workplace data. You should use a “strong” password of at least eight characters that includes letters, numbers, and special characters. It is also recommended that each employee changes his password this week, and remembers to change it frequently. Further information about passwords is available on our website.

By following these few basic steps, you can help protect the city and your colleagues from damage that could result from data theft and system compromise. However, by failing to take these recommended steps, you are violating policy and letting down your peers and administrators. Further, failure to follow the recommended steps may result in sanctions (punishment)—some of which may be swift and serious, depending on the nature of the violation.

USB Theft Fear Appeal (USB Usage Response)

There have been frequent recent reports of increased threats to our computers and to data stored on the network. Sensitive city data may fall into the wrong hands because city workers do not encrypt data files before taking sensitive data home on USB sticks. If the stick is lost or

stolen, sensitive data that is not encrypted could compromise the security and privacy of this data. If unauthorized persons gained access to that data, it could allow them to improperly use that data.

Encrypting sensitive data files before transporting it on USB sticks is an easy and effective way to counter this threat and protect your workplace data. You should use the encryption process established by ITS before copying the data to the USB stick, or do not copy any sensitive data to USB sticks. Further information about encryption is available on our website.

By following these few basic steps, you can help protect the city and your colleagues from damage that could result from data theft and system compromise. However, by failing to take these recommended steps, you are violating policy and letting down your peers and administrators. Further, failure to follow the recommended steps may result in sanctions (punishment)—some of which may be swift and serious, depending on the nature of the violation.

Data Theft from Not Logging off Fear Appeal (Logging Off Response)

There have been frequent recent reports of increased threats to our computers and to data stored on the network. Sensitive city data may fall into the wrong hands because city workers do not always log off or lock workstations before walking away. If the wrong person accessed sensitive data on a workstation that was logged into, it could compromise the security and privacy of this data. If unauthorized persons gained access to that data, it could allow them to improperly use that data.

Always logging off or locking every workstation before walking away is an easy and effective way to counter this threat and protect your workplace data. You should routinely log off or lock workstations before leaving them, even for just a minute. Further information about security is available on our website.

By following these few basic steps, you can help protect the city and your colleagues from damage that could result from data theft and system compromise. However, by failing to take these recommended steps, you are violating policy and letting down your peers and administrators. Further, failure to follow the recommended steps may result in sanctions (punishment)—some of which may be swift and serious, depending on the nature of the violation.

Appendix B

Model Validation

Based on the guidance of Gefen and Straub (2005), the following discussion is intended to articulate the PLS validation process used to establish factorial validity and reliability for the measurement model. First, convergent validity was assessed by examining the loading of indicators on their respective latent constructs. All of the indicator loadings (see Table B1) were significant at either the .05 or .005 level, suggesting that convergent validity is sufficiently demonstrated. As a secondary test of convergent validity, Fornell and Larcker (1981) suggest that the average variance extracted (AVE), the amount of variance observed by a latent construct's measurement items, should be greater than or equal to 0.50. As indicated in Table B2, the AVE values for all latent constructs are in excess of 0.50, thereby demonstrating a high degree of convergent validity.

As depicted in Table B3, the difference in loadings between an item and its intended construct and that of any other construct was at least 0.10, thereby suggesting a high degree of discriminant validity. Gefen and Straub also contend that discriminant validity is demonstrated if the square root of each construct's AVE is greater than the interconstruct correlations. As depicted in Table B4, these conditions have also been met, thereby further supporting the notion that the independent construct indicators discriminate well.

Finally, reliability of the scales was determined via composite reliability scores provided in the PLS output. Fornell and Larcker and Gefen and Straub contend that composite reliability scores in excess of 0.70 demonstrate an acceptable level of construct measurement reliability. As indicated in Table B4, this condition has been met.

Construct	Indicator	T-Statistic
Threat Severity	TSEV1 ← TSEV	95.31***
	TSEV2 ← TSEV	226.01***
	TSEV3 ← TSEV	115.96***
Threat Susceptibility	TSUS1 ← TSUS	2.31*
	TSUS2 ← TSUS	3.07*
	TSUS3 ← TSUS	2.87*
Self-Efficacy	SEFF1 ← SEFF	100.81***
	SEFF2 ← SEFF	183.97***
	SEFF3 ← SEFF	63.93***
Response Efficacy	RESP1 ← RESP	86.78***
	RESP2 ← RESP	115.45***
	RESP3 ← RESP	37.17***
Formal Sanction Severity	FSEV1 ← FSEV	3.49*
	FSEV2 ← FSEV	4.49*
	FSEV3 ← FSEV	4.25*
Informal Sanction Severity	ISEV1 ← ISEV	60.25***
	ISEV2 ← ISEV	24.16***
	ISEV3 ← ISEV	32.47***
Formal Sanction Certainty	FCRT1 ← FCRT	191.82***
	FCRT2 ← FCRT	168.99***
	FCRT3 ← FCRT	125.61***
Informal Sanction Certainty	ICRT1 ← ICRT	32.23***
	ICRT2 ← ICRT	82.01***
	ICRT3 ← ICRT	72.32***
Sanction Celerity	SCEL1 ← SCEL	12.54**
	SCEL2 ← SCEL	12.39**
	SCEL3 ← SCEL	13.40**
Compliance Intention	CINT1 ← CINT	85.44***
	CINT2 ← CINT	85.47***
	CINT3 ← CINT	36.35***

*p < 0.05; **p < 0.01; ***p < 0.005

Construct	AVE
Threat Severity	0.9283
Threat Susceptibility	0.7487
Self-Efficacy	0.9180
Response Efficacy	0.8354
Formal Sanction Severity	0.8285
Informal Sanction Severity	0.8788
Formal Sanction Certainty	0.9510
Informal Sanction Certainty	0.8410
Sanction Celerity	0.7958
Compliance Intention	0.8600

Table B3. Cross Loadings of Measurement Items to Latent Constructs

	Item	CINT	FCRT	FSEV	ICRT	ISEV	RESP	SCEL	SEFF	TSEV	TSUS
CINT	CINT1	0.940	0.203	-0.112	0.305	0.210	0.434	0.148	0.413	0.354	-0.134
	CINT2	0.947	0.206	-0.043	0.295	0.193	0.387	0.157	0.327	0.279	-0.092
	CINT3	0.893	0.216	-0.016	0.254	0.210	0.372	0.127	0.291	0.270	-0.071
FCRT	FCRT1	0.226	0.976	0.030	0.642	0.304	0.079	0.610	0.048	0.304	-0.045
	FCRT2	0.211	0.977	0.043	0.650	0.307	0.059	0.614	0.034	0.307	-0.025
	FCRT3	0.217	0.972	0.053	0.650	0.298	0.050	0.617	0.040	0.303	-0.039
FSEV	FSEV1	-0.022	0.183	0.761	0.241	0.303	-0.093	0.193	-0.118	-0.020	-0.018
	FSEV2	-0.066	0.019	0.976	0.116	0.288	-0.075	0.051	-0.129	-0.119	0.092
	FSEV3	-0.070	0.016	0.976	0.121	0.274	-0.093	0.052	-0.124	-0.141	0.086
SCEL	SCEL1	0.130	0.596	0.076	0.536	0.309	0.062	0.927	0.041	0.249	-0.123
	SCEL2	0.108	0.610	0.101	0.520	0.332	0.052	0.932	0.000	0.226	-0.145
	SCEL3	0.145	0.606	0.099	0.532	0.343	0.067	0.941	0.026	0.247	-0.128
ICRT	ICRT1	0.250	0.549	0.149	0.879	0.379	0.120	0.457	0.077	0.240	-0.029
	ICRT2	0.286	0.661	0.118	0.934	0.481	0.129	0.547	0.098	0.324	-0.027
	ICRT3	0.307	0.611	0.132	0.935	0.497	0.132	0.495	0.094	0.299	-0.034
ISEV	ISEV1	0.213	0.280	0.258	0.448	0.928	0.211	0.327	0.110	0.256	0.085
	ISEV2	0.179	0.306	0.289	0.468	0.939	0.150	0.368	0.065	0.195	0.051
	ISEV3	0.222	0.289	0.297	0.481	0.944	0.201	0.316	0.111	0.213	0.072
RESP	RESP1	0.400	0.037	-0.087	0.104	0.174	0.931	0.061	0.593	0.395	-0.036
	RESP2	0.387	0.044	-0.102	0.106	0.197	0.945	0.076	0.511	0.384	-0.062
	RESP3	0.394	0.097	-0.058	0.173	0.184	0.862	0.147	0.437	0.340	-0.088
SEFF	SEFF1	0.356	0.021	-0.109	0.090	0.120	0.563	0.029	0.958	0.435	-0.031
	SEFF2	0.380	0.055	-0.126	0.111	0.098	0.557	0.046	0.969	0.429	-0.037
	SEFF3	0.342	0.045	-0.147	0.081	0.080	0.499	0.048	0.945	0.424	-0.065
TSEV	TSEV1	0.274	0.299	-0.123	0.291	0.212	0.366	0.268	0.424	0.961	0.002
	TSEV2	0.320	0.304	-0.107	0.310	0.229	0.408	0.275	0.448	0.976	-0.005
	TSEV3	0.352	0.300	-0.121	0.310	0.240	0.405	0.262	0.422	0.951	-0.000
TSUS	TSUS1	0.067	0.113	0.060	0.058	0.092	-0.039	0.037	0.021	0.145	0.833
	TSUS2	0.026	0.046	0.080	0.043	0.055	-0.090	-0.055	-0.016	0.093	0.622
	TSUS3	-0.091	-0.008	0.080	-0.022	0.095	-0.059	-0.111	-0.034	0.028	0.969

Table B4. Reliability and Interconstruct Correlations

Construct	CRel	Inter-Construct Correlations									
		CINT	FCRT	FSEV	SCEL	ICRT	ISEV	RESP	SEFF	TSEV	TSUS
CINT	0.949	0.927									
FCRT	0.983	0.224	0.975								
FSEV	0.935	-0.066	0.044	0.910							
SCEL	0.951	0.156	0.623	0.076	0.892						
ICRT	0.941	0.309	0.664	0.145	0.546	0.917					
ISEV	0.956	0.221	0.311	0.301	0.359	0.497	0.937				
RESP	0.938	0.431	0.065	-0.091	0.103	0.139	0.203	0.914			
SEFF	0.971	0.376	0.042	-0.133	0.044	0.099	0.105	0.564	0.958		
TSEV	0.975	0.329	0.313	-0.121	0.279	0.316	0.238	0.409	0.449	0.963	
TSUS	0.903	-0.110	-0.040	0.078	-0.139	-0.033	0.075	-0.068	-0.047	-0.014	0.864

Bolded items are square root of average variance extracted (AVE); CRel = Composite Reliability

References

Fornell, C., and Larcker, D. F. 1981. "Evaluating Structural Equations with Unobservable Variables and Measurement Error," *Journal of Marketing Research* (18:1), pp. 39-50.
 Gefen, D., and Straub, D. 2005. "A Practical Guide to Factorial Validity Using PLS-graph: Tutorial and Annotated Example," *Communications of the AIS* (16:5), pp. 91-109.

Appendix C

Scales and Instrument Items (for Password Theft Threat Fear Appeal)

Section 1: General Purpose

Think about your usage and maintenance responsibilities for a specific computer system. Please select a single score from 1 to 5 where, 1 means you strongly disagree with the statement, and 5 means you strongly agree with the statement.

	Strongly Disagree (1)	(2)	Neutral (3)	(4)	Strongly Agree (5)
1. I maintain important data on a specific computer or device	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I am responsible for the detection, prevention, and/or removal of threats on that computer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I am concerned for the protection of the data on that computer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 2: Password Threat Concerns

The following statements concern passwords and password protection. Please select a single score from 1 to 5 where 1 means you strongly disagree with the statement and 5 means you strongly agree with the statement.

Treat Severity (reflective)					
4. If my password was stolen, the consequences would be severe (TSEV1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. If my password was stolen, the consequences would be serious (TSEV2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. If my password was stolen, the consequences would be significant (TSEV3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Threat Susceptibility (reflective)					
7. My password is at risk of being stolen (TSUS1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. It is likely that my password will be stolen (TSUS2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. It is possible that my password will be stolen (TSUS3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Disagree (1)	(2)	Neutral (3)	(4)	Strongly Agree (5)
Self-Efficacy (reflective)					
10. Changing my password is easy to do (SEFF1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Changing my password is convenient to do (SEFF2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I am able to change my password without much effort (SEFF3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Response Efficacy (reflective)					
13. Changing my password works for protection (RESP1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Changing my password is effective or protection (RESP2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. By changing my password, my password is more likely to be protected (RESP3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intention to Comply with Recommended Protective Strategies (reflective)					
16. I intent to change my password within the next week (CINT1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I predict I will change my password within the next week (CINT2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I plan to change my password within the next week (CINT3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Formal Sanctions – Certainty (reflective)					
19. It is likely that I would be formally sanctioned (punished) if management learned that I didn't change my password regularly (FCRT1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I would receive sanctions if I didn't change my password regularly (FCRT2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. It is likely that I would be sanctioned if management learned that I didn't change my password regularly (FCRT3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Formal Sanctions – Severity (reflective)					
22. It would create a problem in my life if I were formally reprimanded for not changing my password regularly (FSEV1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. It would be a problem if I received sanctions for not changing my password regularly (FSEV2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. It would create a problem in my life if I were formally sanctioned for not changing my password regularly (FSEV3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Informal Sanctions – Certainty (reflective)					
25. It is likely that I would lose the respect and good opinion of my colleagues for not changing my password regularly (ICRT1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. It is likely that my career would be adversely affected if management learned that I didn't change my password regularly (ICRT2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. It is likely that I would lose the respect and good opinion of my manager for not changing my password regularly (ICRT3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Disagree (1)	(2)	Neutral (3)	(4)	Strongly Agree (5)
Informal Sanctions – Severity (reflective)					
28. It would create a problem in my life if my career was adversely affected for not changing my password regularly (ISEV1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. It would create a problem in my life if I lost the respect and good opinion of my colleagues for not changing my password regularly (ISEV2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. It would create a problem in my life if I lost the respect of my manager for not changing my password regularly (ISEV3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sanction Celerity (reflective)

31. The punishment from policy non-compliance would be swift (ICEL1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. I would be punished quickly for policy non-compliance (ICEL2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. The sanctions (punishments) I would receive at work from policy non-compliance would be delivered quickly (ICEL3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 3: Demographic Information

The demographic information in this section will only be used in aggregate form and will not be used to identify individual respondents. Please select one item in each category. Experience refers to your experience using computer passwords.

Gender	<input type="checkbox"/>	male (2)	Experience	<input type="checkbox"/>	< 6 months	Age	<input type="checkbox"/>	18 to 29
	<input type="checkbox"/>	female (1)		<input type="checkbox"/>	6 months to 12 months		<input type="checkbox"/>	30 to 39
				<input type="checkbox"/>	> 1 year to 2 years		<input type="checkbox"/>	40 to 49
				<input type="checkbox"/>	> 2 years to 3 years		<input type="checkbox"/>	50 to 59
				<input type="checkbox"/>	> 3 years		<input type="checkbox"/>	60 and over
Education	<input type="checkbox"/>	high school						
	<input type="checkbox"/>	some college						
	<input type="checkbox"/>	bachelor’s degree						
	<input type="checkbox"/>	master’s degree						
	<input type="checkbox"/>	doctorate						
	<input type="checkbox"/>	other						

Thank you for participating in this study.