A feedback model
to understand information system usage

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Outline

• Introduction
• Theoretical frameworks
• Our model & hypotheses
• Questionnaire items, reliability & validity
• Conclusion
Introduction

• In information systems is inherently risky
• People are unwilling to use the IS, even if it could improve their job performance [40]
• Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB)
• Ignore the feedback from past behavior
• Cognitive dissonance and self-perception
Theoretical frameworks (1/2)

• TRA
  – $A = \text{consequences of behavior} \times \text{evaluation of consequences}$
  – $SN = \text{perceived expectations} \times \text{motivation to comply with expectations}$
Theoretical frameworks (2/2)

- TAM

Fig. 2. Original technology acceptance model.

- Cognitive dissonance theories
- Self-perception theories
Our model
Pilot study

• 27 subjects who participated in the study
  – Two who dropped out
  – 8 females and 17 males
  – The average age was between 24 and 25
Questionnaire items

- 7-point Likert scale
- **Perceived Ease of Use & Perceived Usefulness**
  - Extremely agree / extremely disagree
- **Attitude towards Usage**
  - Extremely bad / extremely good
  - Extremely undesirable / extremely desirable
  - Much worse / much better
- **Usage**
  - Very infrequent / very frequent
  - Not at all, week, day
  - In the past week
Reliability & validity

- Reliability
- Discriminant validity

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Mean</th>
<th>$\alpha$</th>
<th>Attitude</th>
<th>Usage</th>
<th>Ease of use</th>
<th>Usefulness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>4.59</td>
<td>0.92</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usage</td>
<td>3.12</td>
<td>0.90</td>
<td>0.53$^a$</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of use</td>
<td>3.84</td>
<td>0.87</td>
<td>0.54$^a$</td>
<td>0.32$^a$</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Usefulness</td>
<td>3.01</td>
<td>0.96</td>
<td>$-0.23^a$</td>
<td>$-0.20^a$</td>
<td>0.00</td>
<td>1.0</td>
</tr>
</tbody>
</table>
### Testing of hypotheses

<table>
<thead>
<tr>
<th>Hypo. No.</th>
<th>Statement of hypothesis</th>
<th>Coeff.</th>
<th>$t$ value</th>
<th>Lag coeff.</th>
<th>$t$ value</th>
<th>Hypo. Supported?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Attitude will positively affect Usage(^a)</td>
<td>0.51</td>
<td>1.68</td>
<td>-0.34</td>
<td>-1.06</td>
<td>Yes</td>
</tr>
<tr>
<td>2.</td>
<td>Usefulness will positively affect Usage</td>
<td>-1.36</td>
<td>-1.25</td>
<td>-0.04</td>
<td>-0.37</td>
<td>No</td>
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<tr>
<td>3.</td>
<td>Past usage will positively affect Ease of Use(^c)</td>
<td>NA</td>
<td>NA</td>
<td>0.62</td>
<td>13.72</td>
<td>Yes</td>
</tr>
<tr>
<td>4.</td>
<td>Ease of Use will positively affect Usefulness</td>
<td>-0.087</td>
<td>-0.67</td>
<td>-0.0134</td>
<td>-0.37</td>
<td>No</td>
</tr>
<tr>
<td>5.</td>
<td>Ease of Use will positively affect Attitude(^b)</td>
<td>0.34</td>
<td>2.19</td>
<td>-0.02</td>
<td>-0.28</td>
<td>Yes</td>
</tr>
<tr>
<td>6.</td>
<td>Usefulness will positively affect Attitude(^b)</td>
<td>-1.35</td>
<td>-3.82</td>
<td>-0.01</td>
<td>-0.15</td>
<td>Contrary</td>
</tr>
</tbody>
</table>

\(^a\) $p<0.10$

\(^b\) $p<0.05$

\(^c\) $p<0.0001$

$N=75$
Conclusion
Thanks for attention