





















in turn directly influenced Internet banking behaviour (*H7*). In fact, Internet technology has become popular in Bangladesh since the early 1990s. Young students are already accustomed to using the Internet in other purposes of academic and nonacademic uses. In Table 1, it is obvious that more than 96 per cent of the respondents

own personal computers. Thus, respondents who believed in their abilities to successfully engage in Internet banking behaviour engaged in Internet Banking practices. As expected, similar findings were also found in the cases of normative structure (*H4*) and subjective norms (*H5*) to affect Internet banking behaviour.

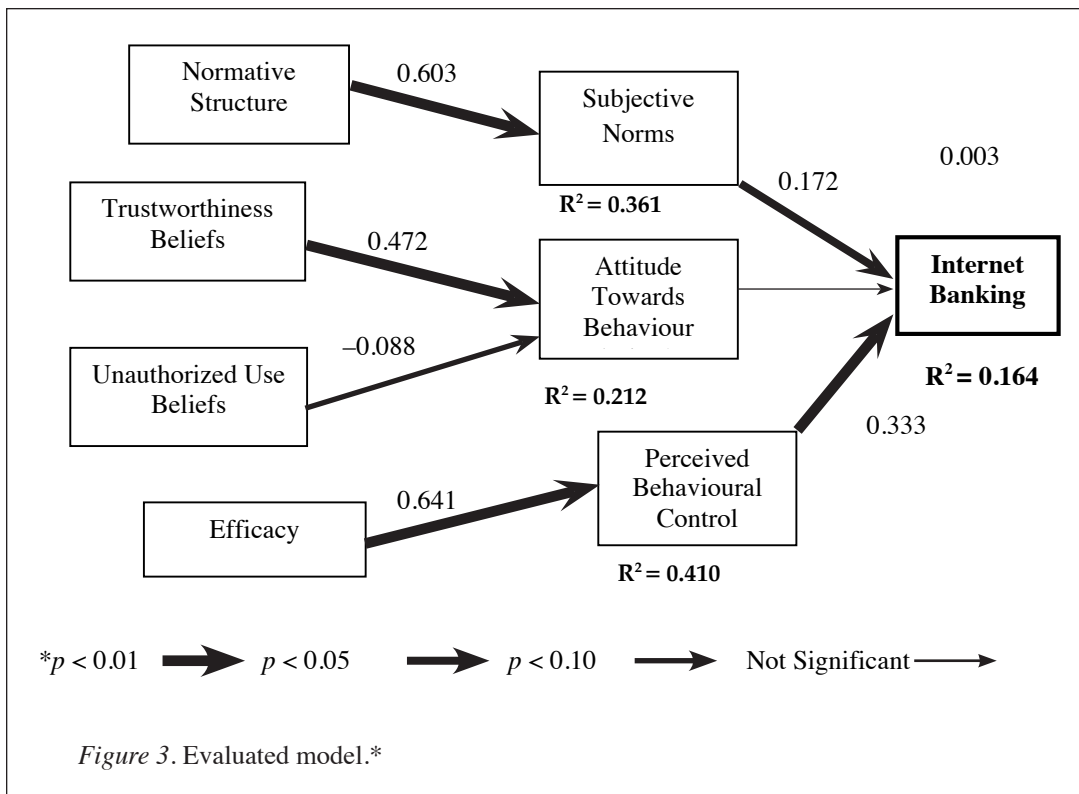
Table 3

*Correlation Coefficients and Reliability Measures*

Constructs	Reliability	Internet Banking	Attitude	Unauthorized	Trust	Subjective Norm	Normative Structure	PBC
Internet Banking	1.00							
Attitude	0.82	0.212						
Unauthorized	(0.14)	0.034	(0.009)					
Trust	0.89	0.264	0.458	0.167				
Subjective Norm	0.85	0.260	0.395	(0.012)	0.458			
Normative Structure	0.84	0.281	0.319	0.045	0.406	0.603		
PBC	0.83	0.379	0.420	0.003	0.335	0.257	0.280	
Efficacy	0.82	0.418	0.618	(0.013)	0.466	0.420	0.361	0.641

Similar findings are reported in many other studies. For instance according to, like George (2002), Pavlou (2002), and Suh and Han (2003), there was a strong relationship between trust and attitudes toward internet banking. Battacherjee (2000) and Song and Zahedi (2001) showed a similar strong relationship between normative structure and subjective norms. Limayem et al. (2000) and Khalifa and Limayem (2003) also found a similar strong relationship between PBC and actual Internet purchasing. Like Battacherjee (2000) but unlike Song and Zahedi (2001), there was a strong relationship between self-efficacy and PBC. However, the lack of a relationship between attitude and Internet banking contradicts the findings of such a relationship in Jarvenpaa and Todd (1997a, b) and George (2002).

In the present study, TPB served as a useful foundation to help explain Internet banking, even though the model used here deviated from TPB traditions by not including the intentional component. The direct relationship in TPB between perceived behavioural control and behaviour was found active here and the relationship between self-efficacy and PBC was strong. Typically in TPB models, the effects of subjective norms on behaviour would also be mediated by intention instead of the direct relationship posited here. That hypothesized direct relationship was fully supported showing the expected positive relationship between normative structure and subjective norms. In this case, it may be that parents, friends, professors and classmates were important to the students



who listened to them to determine their Internet banking behaviour.

In this study of Internet banking behaviour, the findings imply that consumers are swayed more by their perceptions about the trustworthiness of the Internet than by concerns they might have about unauthorized use of their personal information by other Internet users. Beliefs about improper access to personal information were less significant determinants of attitudes toward Internet banking than trustworthiness. As the secondary use of personal information has always been a robust topic in IS-related privacy literature (Byford, 1998; Culnan, 1993; Smith et al., 1996), so the finding of the present study is in perfect congruence with them. This finding could be due to the youth of the respondent group; with an average age just over 25. This age group may not maintain the same perspectives about secondary use of information as the older generations.

### Conclusions, Implications for Future Research and Limitations of The Study

This paper investigates the relations between Internet banking and beliefs about the privacy and trustworthiness of the Internet among the consumers in Bangladesh. From a research perspective, the study results demonstrate the robustness of the TPB in helping to explain Internet banking behaviour. The findings of the study reveal that both antecedents are important for forming the attitude from the respondents' perspectives, but trustworthiness is found comparatively more important than privacy or unauthorized uses of Internet banking. The study also exhibits that attitude towards Internet use for adopting online banking is at a budding stage in Bangladesh, since this antecedent is found statistically insignificant to affect actual Internet banking behaviour. With a considerable time lag in future, this scenario may change with

the changing attitude towards Internet banking behaviour.

This study considers only two antecedents to examine attitudes toward the adoption of Internet banking behaviour. There may well be others that ought to be included in future research, such as other aspects of privacy which are used by Byford's (1998); social relationship and property views of privacy. However, suitable and reliable scales for these constructs need to be developed in order to incorporate them in future studies (George, 2002).

Future research could take account of measures of both the intention to adopt and the actual Internet banking behaviour. Since intention measures future behaviour and actual purchasing measures past behaviour, there should be a time lag between when intention is measured and when behaviour is measured. How long such a time lag should be is not always comprehensible. For instance, Davis et al. (1989) who tested the Technology Acceptance Model by incorporating TRA and waited 14 weeks between measuring intention and measuring behaviour. Fourteen weeks may be a long period to linger between measures of intention and actual Internet banking, but some time lag is essential. Nevertheless, measures of both intention and actual behaviour reinforce the outcomes of all TPB-based studies, even though past studies have typically showed a strong association between these two constructs (Azjen, 1991).

As with any study, there are limitations to this study as well. One possible shortcoming is the use of university students as respondents, even though they have extensive experience with the online world. In the sample used here, more than 45 per cent had 4 or more years of experience with the Internet. University students should have enough knowledge about the Internet and to answer questions about carrying out internet banking, and their beliefs about privacy and trustworthiness of the Internet. If anything, students may not be completely representative of the population at large only because they have more Internet experience. They may in

fact represent the vanguard of Internet banking behaviour, providing insight into the potential behaviour of consumers to come.

Nevertheless, the customary cautions about over-generalizing results from this sample may apply to the population for which it is not strictly representative. The sample was not randomly taken to represent a population to which outcomes could be generalized, because it was a convenience sample for which the ability to generalize the findings very far beyond the sample was limited. However, the study would at least focus on the present status of the adoption of Internet banking in Bangladesh which might be useful to the public and private agents in order to boost this kind of practice in society in the near future.

## References

- Akinci, S., Safak, A., & Eda, A. (2004). Adoption of internet banking among sophisticated consumer segments in an advanced developing country. *International Journal of Bank Marketing*, 22(3), 212–232.
- Albrechtslund, A. (2008). Online social networking as participatory surveillance. *First Monday*, 13(3), 11–11.
- Awal, M. A. (2004). *Internet in Bangladesh: Past, present & a better future*. Indonesia, Asia Pacific Networking Group.
- Azam, M. S. (2007). Implementation of B2C e-commerce in Bangladesh: The effects of buying culture and e-infrastructure. *Advances in Global Business Research*, 3(1), 55-81.
- Azjen, I. (1985). From intentions to actions: A theory of planned behavior. In Kuhl, J. & Beckman, J. (Eds.), *Action-control: From cognition to behavior* (pp. 11–39). Heidelberg, Springer.
- Azjen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179–211.
- Azjen, I., & Fishbein, M. (1980), *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

- Bakta, N. C., & Sarder, M. M. R. (2007). *Online banking: Bangladesh perspectives*. Paper prepared for presentation at the XVI Biennial Conference.
- Bandura, A. (1997). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191–215.
- Baraghani, S. N. (2007). *Factors influencing the adoption of Internet banking* (Unpublished doctoral dissertation). Department of Business Administration and Social Sciences, Lulea University of Technology.
- Battacherjee, A. (2002). Individual trust in online firms: Scale development and initial trust. *Journal of Management Information Systems*, 19(1), 211–41.
- Baten, M. A., & Kamil, A. A. (2010). E-Banking of economical prospects in Bangladesh. *Journal of Internet Banking and Commerce*, 15(2), 1–10.
- Byford, K. S. (1998). Privacy in cyberspace: Constructing a model of privacy for the electronic communications environment. *Rutgers Computer & Technology Law Journal*, 24, 1–74.
- Byron, R. K., & Ahmed, N. I. (2009). Banking enter new era. *Daily Star*, Nov. 3, 1–1.
- Chang, H. H., & Hamid, M. R. (2010). An empirical investigation of Internet banking in Taiwan. *Global Journal of Business Research*, 4(2), 39–47.
- Cole, M., & Brooks, L. (2009). Social aspects of social networking. *International Journal of Information Management*, 29, 248.
- Coppola, N., S. R. Hiltz, & N. Rotter (2004). Building trust in virtual teams. *IEEE Transactions on Professional Communication*, 47(2), 95–104.
- Cranor, L. F. (2000). Beyond concern: Understanding net users' attitudes about online privacy. In Vogelsang, I. & Compaine, B.M. (Eds.), *The Internet upheaval: Raising questions, seeking answers in communications policy* (pp. 47–70). Cambridge, MA: The MIT Press.
- Culnan, M. (1993). How did they get my name? An exploratory investigation of consumer attitudes toward secondary information use. *MIS Quarterly*, 17(3), 341–63.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982–1003.
- DeVellis, R. F. (2003). *Scale development: Theory and applications* (2nd ed.). Thousand Oaks: Sage Publishers.
- Doyle, S. (2006). The evolution of self service environments and their potential business impact. *Journal of Database Marketing & Customer Strategy Management*, 13(3), 236–243.
- Durkin, M. (2007). In search of the Internet-banking customer: Exploring the use of decision styles. *International Journal of Bank Marketing*, 22(7), 484–503.
- Encyclopedia Britannica (2006). *New Delhi, India, Encyclopedia Britannica* (India) Pvt. Ltd. and Impulse Marketing.
- Fogel, G., & Nehmad, E. (2009). Internet social network communities: Risk taking, trust, and privacy concerns. *Computers in Human Behavior*, 25, 153–160.
- Frye, N. E., & Dornisch, M. M. (2010). When is trust not enough? The role of perceived privacy of communication tools in comfort with self-disclosure. *Computers in Human Behavior*, 26, 1120–1127.
- Gambi, S. (2009). The development of trust within close relationships formed within social network sites. In *Proceedings of the WebSci'09: Society On-Line*. Athens, Greece, March 18-20, 2009.
- Gan, C., & Clemes, M. (2006). A logit analysis of electronic banking in New Zealand. *International Journal of Bank Marketing*, 24(6), 360–383.
- George, J. F. (2002). Influences on the intent to make Internet purchases. *Internet Research*, 12(2), 165–180.
- Giannakoudi, S. (1999). Internet banking: The digital voyage of banking and money in cyberspace. *Information and Communications Technology Law*, 8(3), 205–43.
- GVU. (1997). GVU's WWW user survey. Retrieved from [www.gvu.gatech.edu/user\\_surveys](http://www.gvu.gatech.edu/user_surveys).

- Hernando, I., & Nieto, M. J. (2007). Is the Internet delivery channel changing banks' performance? The case of Spanish banks. *Journal of Banking and Finance*, 31, 1083–1099.
- Hoffman, D. L., Novak, T. P., & Peralta, M. (1999). Building consumer trust online. *Communications of the ACM*, 42(4), 80–85.
- Huang, J., Makoju, E., Newell, S., & Galliers, R. D. (2003). Opportunities to learn from 'failure' with electronic commerce: A case study of electronic banking. *Journal of Information Technology*, 18, 17–26.
- Jarvenpaa, S. L., Tractinsky, N., & Vitale, M. (2000). Consumer trust in an Internet store. *Information Technology and Management*, 1, 45–71.
- Jarvenpaa, S. L., & Todd, P. A. (1997a). Is there a future for retailing on the Internet? In Peterson, R.A. (Ed.), *Electronic Marketing and the Consumer* (pp. 139–54). Thousand Oaks, CA: Sage Publication.
- Jarvenpaa, S. L., & Todd, P. A. (1997b). Consumer reactions to electronic shopping on the World Wide Web. *International Journal of Electronic Commerce*, 1(2), 59–88.
- Jarvenpaa, S. L., Knoll, K., & Leidner, D. E. (1998). Is anybody out there? Antecedents of trust in global virtual teams. *Journal of MIS*, 14(4), 29–64.
- Jones, J. M., & Vijayasarathy, L. R. (1998). Internet consumer catalog shopping: Findings from an exploratory study and directions for future research. *Internet Research*, 8(4), 322–30.
- Joinson, A. N. (2008). 'Looking at', 'Looking up' or 'Keeping up with' people? Motives and uses of facebook. In *Proceedings of CHI 2008*, 1027-1036. New York, NY: ACM Press.
- Kim, M. S., & Ahn, J. H. (2007). Management of trust in the e-Marketplace: The role of the buyer's experience in building trust. *Journal of Information Technology*, 22, 119–132.
- Khalifa, M., & Limayem, M. (2003). Drivers of Internet shopping. *Communications of the ACM*, 46(12), 233–239.
- Langendorfer, P. (2002). *M-commerce: Why it does not fly (yet?)*. Proceedings of the International Conference on Advances in Infrastructure for e-business, e-education, e-science and e-medicine on the Internet, L'Aquila.
- Lee, M. K. O., & Turban, E. (2001). A trust model for consumer Internet shopping. *International Journal of Electronic Commerce*, 6(1), 75–91.
- Limayem, M., Khalifa, M., & Frini, A. (2000). What makes consumers buy from Internet? A longitudinal study of online shopping. *IEEE Transactions on Systems, Man, and Cybernetics – Part A: Systems and Humans*, 30(4), 421–32.
- Litman, J. (2000). Information privacy / information property. *Stanford Law Review*, 52(5), 1251–1283.
- Liu, C., Marchewkab, J. T., Luc, J., & Yu, C. (2005). Beyond concern—a privacy-trust-behavioral intention model of electronic commerce. *Information & Management*, 42, 289–304.
- Maheswaran, M., Tang, H. C., & Ghunaim, A. (2007). Towards a gravity-based trust model for social networking systems. *Proceedings of the 27th International Conference on Distributed Computing Systems Workshops*, p.24, June 22-29.
- McKnight, D. H., Cummings, L. L., & Chervany, N. L. (1998). Initial trust formation in new organizational relationships. *Academy of Management Review*, 23(3), 473–490.
- McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and validating trust measures for e-commerce: An integrative typology. *Information Systems Research*, 13(3), 334–359.
- Metzger, M. J. (2004). Privacy, trust and disclosure: Exploring barriers to electronic commerce. *Journal of Computer-Mediated Communication*, 9(4), 1–10.
- Mia, et. al. (2007). E-banking: evolution, status and prospects. *The Cost and Management*. 35(1), 36–48.
- Miyazaki, A. D., & Fernandez, A. (2001). Consumer perceptions of privacy and



- security risks for online shopping. *Journal of Consumer Affairs*, 35(1), 27–44.
- Mukherjee, A., & Nath, P. (2003). A model of trust in online relationship banking. *International Journal of Bank Marketing*, 21(1), 5–15.
- Nath, R., Paul S., & Monica P. (2001). Bankers' perspectives on Internet banking. *e-Service Journal*, 1(1), 21–36.
- Nelson, P., & Richmond, W. (2007). Internet banking: Gold mine or money pit? *Academy of Banking Studies Journal*, 6(1), 1–25.
- Parameswaran, M., & Whinston, A. B. (2007). Research issues in social computing. *Journal of the Association of Information Systems*, 8(6), 336–350.
- Pavlou, P. A., & Gefen, D. (2004). Building effective online marketplaces with institution-based trust. *Information Systems Research*, 15(1), 37–5.
- Pavlou, P. A. (2003). Consumer acceptance of electronic commerce --- integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, 7(3), 69–103.
- Pavlou, P. A. (2002). What drives electronic commerce? A theory of planned behavior perspective. *Academy of Management Proceedings*, 2002, A1-A6.
- Pearce, J. L., Branyiczki, I., & Balacsi, G. (1994). Person-based reward systems: A theory of organizational reward practices in reform-communist organizations. *Journal of Organizational Behavior*, 15, 261–82.
- Piccoli, G., & B. Ives (2003). Trust and the unintended effects of behavior control in virtual teams. *MIS Quarterly*, 27(3), 365–395.
- Salehi, M., & Zhila, A. (2008). Fraud detection and audit expectation gap: Empirical evidence from Iranian bankers. *International Journal of Business and Management*, 3(10), 65–77.
- Salehi, M., Ali, M., & Zhila, A. (2008). Islamic banking practice and satisfaction: Empirical evidence from Iran. *ACRM Journal of Business and Management Research*, 3(2), 35–41.
- Rahman, M. M. (2007). *Innovative technology and bank profitability: The Bangladesh experience*. Policy Analysis Unit (PAU), Bangladesh Bank WP0803.
- Ratnasingham, P. (1998). The importance of trust in electronic commerce. *Internet Research*, 8(4), 313–321.
- Samuelson, P. (2000). Privacy as intellectual property. *Stanford Law Review*, 52(5), 1125–1175.
- Sarel, D., & Marmorstein, H. (2003). Marketing online banking services: The voice of the customer. *Journal of Financial Services Marketing*, 8(3), 106–118.
- Sciglimpaglia, D., & Ely, D. (2006). Customer account relationships and e-Retail banking usage. *Journal of Financial Services Marketing*, 10(4), 109–122.
- Shah, M. H., & Siddiqui, F. A. (2006). Organizational critical success factors in adoption of e-banking at the Woolwich Bank. *International Journal of Information Management*, 26(6), 442–456.
- Shih, Y., & Fang, K. (2004). The use of a decomposed theory of planned behavior to study Internet banking in Taiwan. *Internet Research*, 14(3), 213–223.
- Shin, D. (2010). The effects of trust, security and privacy in social networking: A security-based approach. *Interacting with Computers*, 10, 1–35.
- Song, J., & Zahedi, F. (2001). Web design in e-commerce: A theory and empirical analysis. *Proceedings of the 22<sup>nd</sup> International Conference on Information Systems*, 205–20.
- Smith, H. J., Milberg, S. J., & Burke, S. J. (1996). Information privacy: Measuring individuals' concerns about organizational practices. *MIS Quarterly*, 20(2), 167–95.
- Suh, B., & Han, I. (2003). The impact of customer trust and perception of security control on the acceptance of electronic commerce. *International Journal of Electronic Commerce*, 7(3), 135–161.
- Swire, P. P., & Bermann, S. (2007). *Information privacy, official reference for the certified information privacy professional (CIPP)*. New York: Iapp Publication.

- Tan, M., & Teo, T. S. H. (2000). Factors influencing the adoption of Internet banking. *Journal of the Association for Information Systems*, 1(5), 1–42.
- Taylor, S., & Todd, P.A. (1995a). Understanding information technology usage: A test of competing models. *Information Systems Research*, 6(2), 144–176.
- Taylor, S., & Todd, P.A. (1995b). Assessing IT usage: The role of prior experience. *MIS Quarterly*, 19(4), 561–70.
- Varian, H. R. (1992). *Microeconomic analysis* (3rd ed.). New York, Norton, W.W.
- Warren, S. D., & Brandeis (1890). The right to privacy. *Harvard Law Review*, 4(4), 193–220.
- Weiss, S. (2009). Privacy threat model for data portability in social network applications. *International Journal of Information Management*, 29, 249–254.
- Wright, D., Gutwirth, S., Friedewaldc, M., Hert, P. D., Langheinrichd, M., & Moscibroda, A. (2009). Privacy, trust and policy-making: Challenges and responses. *Computer Law and Security Review*, 25, 69–83.