

"SATISFACTION AND E-QUALITY: SOME EVIDENCE FROM INTERNET BANKING"

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Abstract: The perceived quality has been described as a major determinant of the consumer satisfaction. We have integrated the *perceived utility* construct from Technology Acceptance Models (TAM) with *perceived quality* from SERVQUAL literature to describe perceived quality in eBank context. A specific scale has been developed and applied to an online survey at a major Portuguese eBank. 754 valid observations had been collected and structural equation modelling methodology was used. Perceived quality has been formalized as a second order construct and the results shows that it is manifested on *products and services, convenience and trust in the information*.

Key words: eBank, private consumer behaviour, satisfaction, perceived quality, structural equation modelling.

The *perceived quality* is one of the most frequent themes among satisfaction literature. Zeithmal *et al.* (1990) studied the consumer perceptions about the retail bank service quality and concluded that five of the 10 original SERVQUAL dimensions (Parasuraman, 1985) were sufficiently representative of the perceived quality. In this work we take into account some original variables from Technology Acceptance Models (TAM) like competence (Cheung & Lee, 2000), reputation (Pavlou, 2001), performance and speed (Malhotra & Galleta, 1999; Koufaris & Hampton-Sosa, 2002), and convenience (Kwon & Chidambaram, 2000), that are assumed to correspond respectively to SERVQUAL dimensions (Zeithmal *et al.*, 1990) of reliability, security, capacity and empathy, The quality goes further than utility once the utilitarian vector has implicitly the service quality perceptions (Rust & Oliver, 1994), while the opposite is not necessarily true. We use two items based on the Jun & Cai (2001) study to measure the variety and interest of products and services offered.

The evaluations of *convenience, products and trust*, were originally part of the *perceived utility* construct of TAM (Davis, 1989; Karjaluoto *et al.*, 2002; Koufaris & Hampton-Sosa, 2002) and are implicitly related to quality evaluations of the service. We expect the perceived quality is manifested in the dimensions (see also table 1):

- **convenience**, measured by two items based on Kwon & Chidambaram (2000): comfort and time saving;
- **services and information**: considered as a unidimensional construct (Methlie & Nysveen, 1999) and argued as an important dimension in this channel (Dwyer *et al.*, 1987; Moorman *et al.*, 1993; Bitner, 1995; San Martín *et al.*, 2000), and also includes the bank's reputation (Cheung & Lee, 2001; Jun & Cai, 2001).
- **trust in the medium** is directly related with security and includes variables like privacy (Pavlou, 2001) and overall security perception (Cheung & Lee, 2001).

The *perceived quality* is formalized in this work as a second order construct composed by three different dimensions: *services and information, trust in the medium, and convenience*.

The consumer *satisfaction* is a central theme in consumer behavior literature and in this study we describe the customer central perceptions: desconfirmation of expectations and overall service evaluation. We use two items from the study of Methlie & Nysveen (1999) about eBank that showed an acceptable reliability (0,70 of extracted variance, 0,82 of composite reliability).

The survey was implemented online and 754 valid observations had been collected. The data reveal that the ebank users are predominantly male (65,6%), young (71,4% have less than 40 years), relatively experienced (average antiquity using the service is about two years and about 90% of the users connect, on average, about once each two days). The majority of the participants have a work (86,7%) and a secondary level of education. The group with more experience using the service is older and its female proportion is significantly lower.

Results

From a confirmatory factorial analysis of the *perceived quality* second order construct we conclude that a good fit exists ($\chi^2=117,43$; d.f.=32; CFI=0,954; RMSEA=0,06) and no multicollinearity problems were detected (Tolerance= 0,721; VIF=1,387). The chi-square statistic test is not take into account because of its sensitivity to sample size, revealing a chronicle Error Type I tendency with large samples (Bagozzi & Yi, 1988; Bentler, 1990; Browne & Cudeck, 1993).

About reliability, the Cronbach's *alphas* and the composite reliability show acceptable values. The extracted variance of each construct exceeds the recommended 0,5 (Hair *et al.*, 1999). The convergent validity is evidenced by the large and significant standardized loading (average loading size is 0,71). The discriminant validity was stringently assessed using the Fornell & Larcker (1981) test.

The final model shows a good fit ($\chi^2=168,10$; d.f.=41; CFI=0,944; RMSEA=0,052; NFI=0,928; GFI=0,960; AGFI=0,936) and the figure 1 shows the significant standardized direct coefficients of the simultaneous relations between constructs.

The *perceived quality* is manifested more on *services and information* than on *convenience* or *trust in the medium*. For the consumer, the product and its information are indissociable (Methlie & Nysveen, 1999). The majority (68%) of the *satisfaction* construct is explained by *perceived quality* (see figure 1).

Conclusions

Just like in any other service or channel, the eBank *perceived quality* determines significant and positively the consumer *satisfaction*. This classical relation is also valid in e-Bank context.

If the bank wants to improve its consumers' *satisfaction* a development on services and information is recommended (preferred to *convenience* or *trust in the medium* improvements).

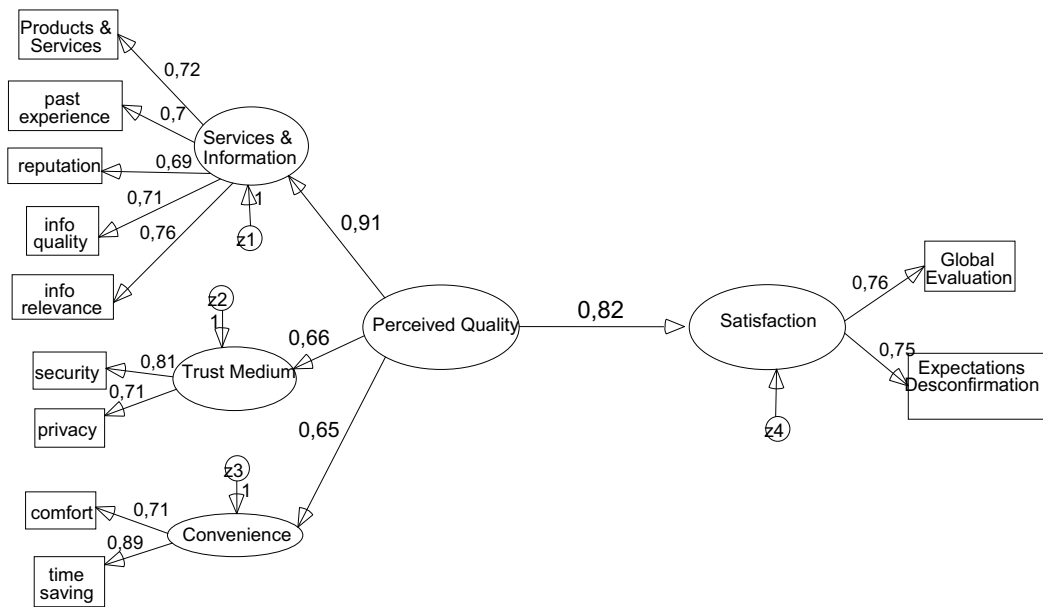


Figure 1. Final Structural Model

Once products and information can be easily imitated in this channel, so this fact presents an increased pressure in the price importance and opens a door to a possible important role of other variables. The bank, in order to differentiate products and services, should consider hedonic features as well (like web design that incentive exploratory behavior and *flow* opportunities) instead of focusing uniquely on utilitarian features.

Table 1. Items Description

Constructs	ITEMS	Based on:
Convenience	V1. The eBank use provides comfort. (1- strongly disagree to 9- strongly agree) V6. The use of eBank is time saving. (1- strongly disagree to 9- strongly agree)	Kwon & Chidambaram (2000)
Trust in the medium	V9. The banks implement Internet security measures that protect its clients. (1- strongly disagree to 9-strongly agree) V11. The banks ensure that an information transaction is protected during a connection. (1- strongly disagree to 9-strongly agree)	Pavlou (2001) Cheung & Lee (2001)
Trust in the information	(1- strongly disagree to 9-strongly agree) V12. I believe in the information offered by the bank. V13. The bank's web page offers all the relevant information about all products and services. V5. This bank has a good reputation. V8. The past operations were processed according to my expectations. V4. The assortment of products and services offered is very important to me.	Koufaris & Hampton-Sosa (2002) Pavlou (2001) Zeithmal <i>et al.</i> (1990) Jun & Cai (2001)
Satisfaction	V22. Till now this eBank has fulfilled my expectations. (1- strongly disagree to 9-strongly agree) V25. This eBank provides the operations adequately. (1- strongly disagree to 9-strongly agree)	Methlie & Nysveen (1999)

REFERENCES

1. Bagozzi, R.
Yi, Y.
Canals, J. On the Evaluation of Structural Equation Models. *Journal of the Academy of Marketing Science*, Spring, 16 (1), pp. 74-94, 1988
2. Bentler, P. Comparative Fit Indexes in Stuctural Models. *Psychological Bulletin*, 107, pp. 238-246, 1990
3. Bitner, M. "Building Service Relationships: its all about promises", *Journal of the Academy of Marketing Science*, 23(4), pp.246-25, 1995
4. Browne, M.
Cudeck, R. Alternative Ways of Assessing Model Fit. In: K.A. Bollen and J.S. Long (eds.), *Testing Structural Equation Models*, pp.136-162, Newbury Park, CA: Sage, 1993
5. Cheung, C.
Lee, M. "Trust in Internet shopping: a proposed model and measurement instrument", *Proceedings of the 2000 America's Conference on Information Systems (AMCIS)*, August, pp. 681-689, 2000
6. Cheung, C.
Lee, M. "Trust in Internet shopping: a test of a measurement Instrument- Revised Data", *Working Paper*, Lawrence Technological University, 2001
7. Davis, F. "Perceived usefulness, perceived ease of use and user Acceptance of Information Technology", *MIS Quarterly*, Vol. 13, pp. 319-342, 1989
8. Dwyer, F.,
Schurr, P., Oh, S. "Developing buyer-seller relationships", *Journal of Marketing*, 51 (2), pp. 35-51, 1987
9. Evans, P.
Wuster, T. "Strategy and the new economics for information", *Harvard Business Review*, 75 (5), pp.71-82, 1997
10. Fornell, C.
Larcker, D. "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, vol. 28, Feb., pp. 39-50, 1981
11. Hair, J.,
Anderson, R.,
Tatham, R.
Black, W. *Análisis Multivariante*, Prentice-Hall, 5ª edición, 1999
12. Johnston, R. "The determinants of service quality: satisfiers and dissatisfiers", *International Journal of Bank Marketing*, vol. 6 (5), pp.53-71, 1995
13. Jun, M.
Cai, S. "The key determinants of Internet Banking Service Quality: A content analysis", *International Journal of Bank Marketing*, 19(7), pp.276-291, 2001
14. Karjaluoto, H.,
Mattila, M.
Pento, T. "Electronic banking in Finland: consumer beliefs and reactions to new delivery channel", *Journal of Financial Services Marketing*, 6 (4), pp. 346-361, 2002
15. Koufaris, M.
Hampton-Sosa, W. "Customer trust online: examining the role of the experience with the web site", *Working Paper*, Zicklin School of Business, New York, 2002
16. Kwon, H.
Chidambaram, L. "A test of the Technology Acceptance Model: the case of cellular telephone adoption", *Proceedings of the 33nd Hawaii*

17. Malhotra, Y.
Galletta, D. *International Conference on System Sciences*, pp. 1-10, 2000
“Extending the Technology Acceptance Model to Account for Social Influence: theoretical bases and empirical validation”, *Proceedings of the 32nd Hawaii International Conference on System Sciences*, pp. 1-14, 1999
18. Methlie, L.
Nysveen, H. “Loyalty of on-line bank costumers”, *Journal of Information Technology*, 14, pp.375-386, 1999
19. Moorman, C.,
Deshpande, R. “Factors affecting Trust in Market Research Relationships”,
Zaltman, G. *Journal of Marketing*, vol. 57, Enero, pp. 81-101, 1993
20. Parasuraman, A.,
Zeithaml, V. “A conceptual model of service quality and its implications
Berry, L. for future research”, *Journal of Marketing*, vol. 49, pp.41-50, 1985
21. Pavlou, P. “Integrating trust in electronic commerce with the
Technology Acceptance Model: Model Development and Validation”, *Seventh Americas Conference on Information Systems*, pp.816-822, 2001
22. Rust, R.
Oliver, R. L. *Service quality: new directions in theory and practice*,
London, 1994
23. San Martín, S.,
Gutiérrez, C. “La confianza como principal determinante del compromiso
Camarero, C. relacional”, *XII Encuentro de Profesores Universitarios de Marketing*, Universidad de Santiago de Compostela, Santiago de Compostela, 2000
24. Shim, J.,
Shin Y. “Retailer Web site influence on customer shopping: an
Nothingham, L. exploratory study on key factors of customer satisfaction”,
Journal of the Association for Information Systems, Vol. 3,
pp. 53-76, 2002
25. Tan, Y.
Thoen, W. “Toward a generic model of trust for electronic commerce”,
International Journal of Electronic Commerce, 5 (2), pp. 61-74., 2001
26. Waite, K.
Harrison, T. “Consumer expectations of online information provided by
bank websites”, *Journal of Financial Services Marketing*, 6
(4), pp. 309-322, 2002
27. Zeithmal, V.,
Parasuraman, A. *Delivering quality service : balancing customer perceptions
Berry, L. and expectations*, New York : Free Press, 1990