

The Perception of Portuguese Executives of Satisfaction Factors Associated With the E-Business Encounter

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Using a sample of eight-six (86) Portuguese executives, factor analysis was utilized to access their perception of the key factors related to satisfaction with the performance of e-business interaction encounters with customers. In the process, four research questions were advanced, and studied in the context of conceptual framework. Based on the results of this research, conclusions and implications relevant to e-business organizations are offered.

Field of Research: Marketing

1. Introduction

With the increasing utilization of the Internet, every business organization needs to compete in two worlds: a physical world of resources that managers can see and touch and a virtual world made of information (Rayport & Sviokla 1995). The Internet has also accelerated value innovation in service dimensions, such as speed, convenience, personalization, and price. Therefore, the customer value proposition is changing, transforming the notion of value (Kalakota & Robinson 2000).

In fact, business conducted over the Internet or over any other electronic means, is changing the way organizations interact with their customers and partners (Jelassi & Enders 2005). Moreover, the global reach of web technologies enables cost efficient means of reaching out to new markets, attracting new customers, and delivering products and services (Chatterjee et al. 2002).

However, as the digital technologies become more available, customers' power tends to increase because of lower switching costs and higher familiarization with the technology (Porter 2001). Besides, given the high customers' expectations and considering the importance of differentiation strategies to compete in virtual markets, business organizations can adopt new strategic positioning to achieve a competitive advantage (Torres, Lisboa & Yasin, 2011).

While user-level performance measures are important for all organizations, they are particularly significant for newly established channels (King & Liou 2004). Therefore, identifying customer preferences and weight based on their importance from a demand point of view can be a critical success factor such as in e-business (Hering et al. 2006).

Nevertheless, while research dealing with the emerging different aspects of e-business practices and strategies have been forthcoming (Torres, Lisboa, & Yasin, 2011; Huang,

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Jiang, & Tang, 2009), specific research addressing the critical success factors associated with the satisfaction of e-business performance encounter has been slow in forthcoming (Sambasivan et al. 2009; Evanschitzky et al. 2004; Trabold et al. 2006). Such area of research remains relatively unexplored in different e-business cultural settings. The relevance and implications, of such line of research, to organizations utilizing, or planning to implement e-business are practical and far reaching. This applied research should help shape an effective approach to reaching and capturing satisfied customers.

Motivated by the practical relevance of such research, the objective of this study is to analyze the current views of Portuguese executives on key satisfaction factors related to the different performance aspects of the e-business interaction encounter. In the process, this research attempts to shed more light on this important area by addressing the following research questions:

1. What are the most significant factors, which tend to enhance the e-business interaction encounter with customers?
2. To what extent are these factors tending to be technical, or, procedural in nature?
3. To what extent are these factors tending to be customer/human-interaction related?
4. What should organizations do to enhance the satisfaction of the performance of the e-business encounter with their customers?

The conceptual framework in Figure 1 (appendix) was used to guide this research, and to provide a context for further applied research in this area. In the next section the relevant literature is presented, then followed by the methodology section, and in section 4 results are shown and discussed. Finally, in section 5 the conclusion is presented.

2. Relevant Literature

A performance measurement system (PMS) can be defined as the set of metrics used to quantify both the efficiency and effectiveness of actions (Neely et al. 2005). It is a very important management tool which helps to identify where improvements should be made and contributes to the strategic planning process (Bititci et al. 2002).

In order to meet and exceed the evolving needs and wants of customers, a well-designed PMS has become increasingly important (Moullin 2004). In this context, the information managed by the PMS must be accurate, relevant, timely and accessible (Gomes & Yasin, 2013). Therefore, finding out customers' performance preferences in different contexts of e-business could contribute to the performance measurement system design and effective utilization. For the purpose of this research, the relevant literature related to the different facets of e-business performance measurement was reviewed. The search was conducted in Science Direct and Emerald databases.

Articles published between 2003 and 2013 in the above databases were spotted, searching for the following expression in all journal search fields, except full text: e-business measures; e-business measurement; electronic measures; electronic measurement; e-commerce measures; e-commerce measurement; electronic commerce measures; electronic commerce measurement; e-supply measures; e-supply measurement; electronic supply measures; electronic supply measurement; e-

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procurement measures; e-procurement measurement; electronic procurement measures; and electronic procurement measures.

As a result of this search 50 articles from Science Direct and 67 from Emerald databases were found. After a content analysis, 14 articles containing performance measures that could be applied in a user/customer perspective were selected for analysis.

Although the use of web-based electronic commerce has operational and strategic benefits for organizations (Mora-Monge et al. 2010), the implementation of e-business should consider customers' perceptions and invest in areas that contribute to their satisfaction (Joseph et al. 2005). Thus, it is important to establish investment priorities concerning the satisfaction of the performance of the e-business encounter with their customers.

When analyzing literature related to online user interaction, factors such as web-site design, fulfillment/reliability, privacy/security and customer service, merchandising have been suggested as predictive of e-business performance (Wolfenbarger & Gilly 2003; Szymanski & Hise 2000; Trabold et al. 2006). In some more mature markets, convenience and site design emerged as the most important drivers of e-performance (Evanschitzky et al. 2004).

In this context, it seems that business organizations could be better off making their websites more useful and enjoyable, rather than spending money increasing store familiarity and store style (van der Heijden & Verhagen 2004). Thus, another important e-business performance dimension is web site usability (Agarwal & Venkatesh 2002). This performance dimension was found to be one of the determinants of overall service quality (Yang et al. 2005).

Customer service has been identified as an important competitive e-business factor (Huang et al. 2009). However, due to the rapid pace of e-market competition order winning e-service features seemingly become order qualifiers overnight (Trabold et al. 2006).

Although several studies have attempted to empirically shed some light on the different aspects of performance measurement in e-business (Lages et al. 2008; Wu & Chang 2012; Elbashir et al. 2008; Gunawan et al. 2008), considering the evolution of virtual markets in recent years and the lack of solid and integrated measurements of e-business, further research is needed. In fact, the development of theoretical models that satisfy the generic requirements of e-commerce applications constitutes a research challenge (Fink 2006). The importance of determining measures and metrics for e-supply chains is also stressed by literature (Sambasivan et al. 2009). Therefore, considering that even to assess the success of e-supply initiatives, managers should, at least, capture information on user utilization and transactions statistics (Sammon & Hanley 2007), the development of a measurement profile that matches customers' most important requirements regarding the online experience could be a good starting point (Sambasivan et al. 2009; Evanschitzky et al. 2004; Trabold et al. 2006).

3. Methodology

3.1 Instrument

The research instrument used in this study has been designed based on a literature review survey. The first phase of the instrument development included translation and adaptation to the Portuguese environment. In the second phase, the instrument was presented to a panel of experts.

For the purpose of this study, the final version of the research instrument is composed of sixty-one (61) performance measures related to e-business. For the sixty-one measures studied, Portuguese executives were requested to provide their responses with regard to level of importance they assign to each of the performance measures in a B2C context. For this purpose, a Likert type scale, ranging from 1 to 5, was used to directly measure the above variables. The level of importance value signifies the relevance of the measures from the perspective of the executives when they made an e-business interaction.

3.2 Sample and Data Analysis

An invitation to fill out the online research instrument was sent to 630 alumni from MBA program of University of Coimbra – School of Economics. Eighty-six (86) completed responses were received. Twenty-nine (29) were returned because an email address does exist anymore. Eighty-three questionnaires were found without answers, maybe because the respondents are not involved in any kind of e-business. This resulted in a response rate of approximately 16.6%.

The participating executives were asked to provide information regarding age, education, and industry type of the organization where they are currently working (see Table 1).

Table 1: Respondents' profile

Item	Frequency	Percentage
Gender		
Male	57	66,28
Female	20	23,26
No response	9	10,46
Total:	86	100,00
Age		
Less or equal to 30	25	29,07
From 31 to 35	20	23,26
From 36 to 40	17	19,77
More than 40	22	25,58
No response	2	2,32
Total:	86	100,00
Industry		
Services	28	32,56
Manufacturing	18	20,93
Construction	9	10,46
Commerce	9	10,46
Public sector	7	8,14
Other industries	13	15,12
No response	2	2,33
Total:	86	100,00

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Factor analysis was used to extract the underlying dimensions (factors), representing the performance dimensions valued by respondents. The utilization of factor analysis in this study is consistent with similar studies found in the literature (e.g. Van der Heijden & Verhagen, 2004).

4. Results and Discussion

Using the Kaiser-Meyer-Olkin test, sample adequacy for all variables was analyzed. A sample adequacy overall value of 0.77 was obtained. This value reached the value considered acceptable in the literature for this type of analysis (Hair et al. 2009). The principal component method with a Varimax rotation was used to extract relevant factors. The results of the Bartlett test confirmed the appropriateness of the factor analysis procedure as used. Based on the factor analysis procedure, a thirteen-factor solution was obtained. This solution explained 73.5 percent of the total variance (Tables 2,3 and 4). The factors extracted based on this solution are presented next.

F1: Attractiveness and Education

The first factor includes variables such as “attractiveness”, “playfulness” and “enjoyment” that could be associated with emotional involvement, plus “brand/firm awareness” which could be also linked with the attractiveness of the site, and items like “web page layout” and “design consistency & style”, “easy to learn how to use the site” and “site flexibility” which relate to ease of use as perceived by the user.

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Table 2: Factor Analysis Results (factors 1 to 5)

FACTORS (Cronbach's alpha value)	F 1 (0.903)	F 2 (0.846)	F 3 (0.741)	F 4 (0.808)	F 5 (0.810)	Comm ¹
F1 - Attractiveness and education						
Design consistency & style	0.804					0.795
Attractiveness	0.771					0.740
Web page layout	0.759					0.777
Playfulness	0.657					0.787
Brand/firm awareness	0.633					0.649
Enjoyment/pleased with...	0.599					0.780
Users learn from using the site	0.593					0.710
Site flexibility	0.575					0.727
F2 - Completeness and practicality						
Complete contents		0.712				0.801
Up-to-date/automatic updating		0.679				0.772
Ease of browsing		0.645				0.820
Understandability		0.613				0.666
Relevance		0.546				0.733
Provide accurate records of all transactions		0.504				0.622
F3 - Customer orientation						
Value for money			0.775			0.767
Ease of returns and refunds			0.739			0.738
Satisfaction with claims			0.543			0.765
F4 - Customization and responsiveness						
Waiting time/solves problems quickly /system response time				0.718		0.735
On-time delivery				0.712		0.650
Providing easy-to-follow search paths /navigation				0.700		0.776
Customization/personalization				0.684		0.692
Ease of access/ease to use				0.586		0.769
F5 – Uniqueness						
Promotion					0.694	0.750
Unique content					0.687	0.719
Like being associated with					0.535	0.719
Eigenvalues	6.65	3.97	3.32	3.27	3.08	
Percent of total variance	13.05	7.78	6.51	6.42	6.04	
Cumulative percent	13.05	20.82	27.33	33.75	39.80	

¹Communalities

F2: Completeness and practicality

This factor reveals a concern with content quality, which is expressed by variables such as “complete contents”, “understandability” and “relevance”. It also indicates a concern with usefulness reflected by items such as “up-to-date”, “ease of browsing” and “accurate records of all transactions”.

F3: Customer orientation

The set of variables included in this factor, such as “value for money”, “ease of returns and refunds” and “satisfaction with claims”, translates into the importance of the fulfillment of customer expectations.

F4: Customization and responsiveness

This factor refers to the site customization and personalization, i.e. adequacy to customers’ needs and personality, and quick responsiveness to customers, which is expressed by variables such “ease of access”, “waiting time”, “easy-to-follow search paths” and “on-time delivery”.

F5: Uniqueness

The fifth factor includes the variables “promotion”, “unique content” and “like being associated with”, therefore we can interpret this factor as the uniqueness of the site, i.e. the degree of differentiation from other sites that make customers want to be associated with it.

Table 3: Factor Analysis Results (factors 6 to 10)

FACTORS (Cronbach's alpha value)	F 6 (0.801)	F 7 (0.764)	F 8 (0.669)	F 9 (0.741)	F 10 (0.594)	Comm ¹
F6 - Advertising form and style						
Frequency of advertisements on the internet	0.856					0.819
Frequency of advertisements outside the internet	0.758					0.772
Calm versus pushy online store style	0.563					0.734
F7 - Customer service						
Establish useful linkages with other related firms		0.768				0.778
Provide special services for elderly and/or disabled		0.734				0.817
Provide service in a number of different languages		0.635				0.677
F8 - Customer accessibility						
Ease ordering			0.756			0.785
Simplicity			0.706			0.731
F9 - Customer confidence and use						
Practices that make solving problems easy				0.617		0.799
Users feel confident/in control				0.507		0.693
F10 - Pricing Information						
Price dispersion					0.806	0.755
Comparative prices					0.623	0.737
Eigenvalues	2.72	2.60	2.29	2.21	2.09	
Percent of total variance	5.34	5.09	4.50	4.34	4.09	
Cumulative percent	45.14	50.23	54.73	59.07	63.16	

F6: Advertising form

The factor six refers to the site familiarity, which usually tends to be higher when the frequency of advertisements on the Internet and outside the Internet increases, and to the site style, which could be calm or pushy.

F7: Customer service

This factor includes variables such as “providing special services for elderly and/or disabled”, “establishing useful linkages with other related firms” and “providing service in a number of different languages”, which are clearly related with customer service.

F8: Customer accessibility

The variables “simplicity” and “ease ordering” could be associated with customer accessibility.

F9: Customer confidence and use

This factor is constituted by two variables, “practices that make solving problems easy” and “users feel confident/in control” that could contribute to customer confidence.

F10: Pricing Information

The variables included in this factor, “price dispersion” and “comparative prices”, indicate a user concern with pricing information. In fact, although the role of price could be not significant in many industries, pricing information could be an important driver of customer satisfaction.

Table 4: Factor Analysis Results (factors 11 to 13)

FACTORS (Cronbach's alpha value)	F 11 (----	F 12 (0.790)	F 13 (----	Comm ¹
F11 - Customer interest				
Interesting offers	0.580			0.633
F12 – Overall Quality				
Overall website quality		0.519		0.780
Technical quality		0.506		0.748
F13 - Service convenience and innovation				
Convenience compared with traditional channels			0.806	0.733
Eigenvalues	2.01	1.81	1.47	
Percent of total variance	3.94	3.54	2.89	
Cumulative percent	67.10	70.64	73.53	

F11: Customer interest

This factor is constituted by the variable “Interesting offers” that could be related to customer interest, which could be a prerequisite in the customer purchasing process.

F12: Overall Quality

The two variables included in this factor, “overall website quality” and “technical quality”, could easily be linked to the overall quality associated with a website, therefore this factor could be used as dependent variable in a regression analysis.

F13: Service convenience and innovation

The convenience of buying online compared with traditional channels is a widely used factor when analyzing the online user experience.

5. Conclusion

The objective of this study is to analyze the current views of Portuguese executives on key satisfaction performance factors related to the different aspects of the e-business interaction encounter with customers. Based on a sample of eight-six (86) executives the results derived from this study lead to the following conclusions and implications.

The results obtained tend to shed some light on the four research questions advanced in this study. Both technical/procedural, and customer/human related factors were found to be important to the satisfaction with the e-business encounter. Therefore organizations must approach the e-business effort from a total strategic and systematic perspective.

In short, the current views of Portuguese executives on key performance aspects of the e-business interaction encounter with customers were analyzed. Based on the factor analysis procedure, a thirteen-factor solution was obtained, explaining 73.5 percent of the total variance. According to our interpretation of the factors, the following dimensions emerged: attractiveness and education; completeness and practicality; customer orientation; customization and responsiveness; uniqueness; advertising form; customer service; customer accessibility; customer confidence and use; pricing information; customer interest; overall quality; and service convenience and innovation.

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This study suggests that the thirteen factors described above represent the most important dimensions in a user perspective. Therefore, they and could be used, as a starting point to build a performance measurement system for e-business.

Based on these results, organizations attempting to implement e-business should approach this effort strategically and systematically in order to achieve effective e-business performance. This requires more research to assess which of the factors are relevant as drivers of the satisfaction with the e-business encounter satisfaction. In this context, the conceptual framework presented in Figure 1 offers a guide toward studying the individual as well as the collective impact of these factors.

References

- Agarwal, R & Venkatesh, V, 2002, 'Assessing a firm's Web presence: A heuristic evaluation procedure for the measurement of usability', *Information Systems Research*, 13(2), pp.168–186.
- Bititci, U et al, 2002, 'Web enabled performance measurement systems: Management implications', *International Journal of Operations & Production Management*, 22(11), pp.1273–1287.
- Chatterjee, D, Grewal, R & Sambamurthy, V 2002, 'Shaping up for e-commerce: Institutional enablers of the organizational assimilation of web technologies', *MIS Quarterly*, 26(2), pp.65–89.
- Elbashir, M, Collier, P & Davern, M 2008, 'Measuring the effects of business intelligence systems: The relationship between business process and organizational performance', *International Journal of Accounting Information Systems*, 9(3), pp.135–153.
- Evanschitzky, H et al 2004, 'E-satisfaction: a re-examination', *Journal of Retailing*, 80(3), pp.239–247.
- Fink, D 2006, 'Value decomposition of e-commerce performance', *Benchmarking: An International Journal*, 13(1), pp.81–92.
- Gomes, C & Yasin, M 2013, 'An assessment of performance-related practices in service operational settings : measures and utilization patterns' , *The Service Industries Journal*, 33(1), pp.73–97.
- Gunawan, G, Ellis-Chadwick, F & King, M 2008, 'An empirical study of the uptake of performance measurement by Internet retailers', *Internet Research*, 18(4), pp.361–381.
- Hair, J et al 2009, '*Multivariate Data Analysis*', 7th ed., New Jersey, USA: Prentice Hall.
- Van der Heijden, H & Verhagen, T 2004, 'Online store image: conceptual foundations and empirical measurement', *Information & Management*, 41(5), pp.609–617.
- Hering, T, Olbrich, M & Steinrucke, M 2006, 'Valuation of start-up internet companies', *International Journal of Technology Management*, 33(4), pp.406–419.
- Huang, J, Jiang, X & Tang, Q 2009, 'An e-commerce performance assessment model: Its development and an initial test on e-commerce applications in the retail sector of China', *Information & Management*, 46(2), pp.100–108.
- Jelassi, T & Enders, A 2005, '*Strategies for e-business: Creating value through electronic and mobile commerce*', Prentice Hall.
- Joseph, M et al 2005, 'An exploratory study on the use of banking technology in the UK: A ranking of importance of selected technology on consumer perception of service delivery performance', *International Journal of Bank Marketing*, 23(5), pp.397–413.
- Kalakota, R & Robinson, M 2000, '*e-Business 2.0: Roadmap for Success*', Addison-Wesley.

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- King, S & Liou, J 2004, 'A framework for internet channel evaluation', *International Journal of Information Management*, 24(6), pp.473–488.
- Lages, L, Lancastre, A & Lages, C 2008, 'The B2B-RELPERF scale and scorecard: Bringing relationship marketing theory into business-to-business practice', *Industrial Marketing Management*, 37(6), pp.686–697.
- Mora-Monge, C, Azadegan, A & Gonzalez, M 2010, 'Assessing the impact of web-based electronic commerce use on the organizational benefits of a firm: An empirical study', *Benchmarking: An International Journal*, 17(6), pp.773–790.
- Moullin, M 2004, 'Evaluating a health service taskforce' *International Journal of Health Care Quality Assurance*, 17(4/5), pp.248–257.
- Neely, A, Gregory, M & Platts, K 2005, 'Performance measurement system design: A literature review and research agenda', *International Journal of Operations & Production Management*, 25(12), pp.1228–1263.
- Porter, M 2001, 'Strategy and the Internet' *Harvard Business Review*, 79(3), pp.63–78.
- Rayport, J & Sviokla, J 1995, 'Exploiting the virtual value chain', *Harvard Business Review*, 73(6), p.75.
- Sambasivan, M, Mohamed, Z & Nandan, T 2009, 'Performance measures and metrics for e-supply chains', *Journal of Enterprise Information Management*, 22(3), pp.346–360.
- Sammon, D & Hanley, P 2007, 'Becoming a 100 per cent e-corporation: benefits of pursuing an e-supply chain strategy' *Supply Chain Management*, 12(4), pp.297–303.
- Szymanski, D & Hise, R 2000, 'e-Satisfaction: An initial examination', *Journal of Retailing*, 76(3), pp.309–322.
- Torres, P, Yasin, M & Lisboa, J 2010, 'Strategies employed by e-commerce firms in Portugal: An empirical investigation', *Portuguese Journal of Management Studies*, 16(1), pp.43–65.
- Trabold, L, Heim, G & Field, J 2006, 'Comparing e-service performance across industry sectors: Drivers of overall satisfaction in online retailing', *International Journal of Retail & Distribution Management*, 34(4), pp.240–257.
- Wolfenbarger, M & Gilly, M 2003, 'eTailQ: Dimensionalizing, measuring and predictingetail quality', *Journal of Retailing*, 79(3), pp.183–198.
- Wu, I & Chang, C 2012, 'Using the balanced scorecard in assessing the performance of e-SCM diffusion: A multi-stage perspective' *Decision Support Systems*, 52(2), pp.474–485.
- Yang, Z et al 2005, 'Development and validation of an instrument to measure user perceived service quality of information presenting Web portals', *Information & Management*, 42(4), pp.575–589.

Appendix

Figure 1: Key satisfaction performance factors with the e-business encounter

