

BUSINESS INFORMATION QUALITY - THE KEY TO BUSINESS SUCCESS

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Summary: Collecting and using quality business information in the export business significantly increases the chances of successful business and reduces the business risks to which exporters are exposed. For an enterprise to effectively collect and utilize business information, it must first determine its information needs, select the appropriate sources of information, and establish a method for determining which foreign markets warrant serious consideration. The importance of the quality of business information lies in how information is perceived and used by its users. By defining, accessing, modifying, and redefining the quality of business information and how it can be better managed, information can be a driver, not an obstacle, to business success. The primary goal of this paper is to create an aggregate picture of the perception of information quality from individual sources. The following hypothesis was tested by a survey of the importance of business information quality for exporters: The success of exports is proportional to the use of quality business information on the export market, which has been fully proven. The highest quality export market business information, as perceived by exporters surveyed, is provided by specialized market research agencies. The results of the study showed that the surveyed companies with higher export values, compared to less successful exporters, used the business information collected from market research agencies more frequently.

Keywords: quality, business information, export business, international market, competitiveness

1. INTRODUCTION

In today's private and business world, we are inundated with a wealth of information. Information management has become a specialized discipline, and decision making is often implicitly dependent on their quality. Good and timely business information can give a business a competitive advantage - but only if it uses it before competition. Recent industry research has shown that the economic and social damage caused by poor quality business information is billions of dollars¹. Despite its importance, the quality of business information is still not uniquely and completely defined or simply ignored, as claimed by Fox, et al.², Wang, et al.³ and Wang and Strong⁴.

The most commonly used definition of information quality is readiness or suitability for use⁵. Perfect quality of business information is difficult, if not impossible to achieve, but it is not even necessary. If users believe that the quality of the information, which can be described by features such as accuracy, timeliness, completeness, availability, compatibility, etc., is sufficient for their needs, then from their perspective, the quality of the business

information available to them is good. Most researchers, whether conceptual or practice oriented, have used this concept as a starting point. The focus of quality assurance on business information should be to achieve a level of quality sufficient from the perspective of its users. One reason for this is probably the abstract⁶ and varied nature of the term "information", its association with particular meanings⁷, and the popularization of the idea that the user defines what information is⁸. With no consensus on the definition of information⁹, there is no general consensus on the attributes that determine its quality¹⁰.

2. QUALITY OF BUSINESS INFORMATION

The importance of business information quality lies in how information is perceived and used by the consumer. While quality attributes are important, what determines the quality of business information is how those attributes are perceived. Identifying the quality of business information involves two stages: first, labeling which attributes are important, and second, determining how those attributes affect specific consumers.

¹ Redman, T.C. (1998) The impact of poor data quality on the typical enterprise. *Communications of the ACM*, 41 (2), New York, USA: ACM, str. 79-82.

² Fox, C., Levitin, A. i Redman, T. (1994.) The notion of data and its quality dimensions. *Information Processing & Management*, 30 (1), Elsevier Science, str. 9-19.

³Wang, R.Y., Storey, V.C. I Firth, C.P. (1995) A framework for analysis of data quality research. *IEEE Transactions of Knowledge and Data Engineering*, 7 (4), Piscataway, NJ: IEEE Educational Activities Department, str. 623-640.

⁴ Wang, R.Y. I Strong, D.M. (1996) Beyond accuracy: what data quality means to data consumers. *Journal of Management Information Systems*, 12 (4), Armonk, NY: M. E. Sharpe, Inc., str. 5-34.

⁵ Naumann, F. i Sattler, K-U. (2006) *Information Quality: Fundamentals, Techniques, and Use*. EDBT

Tutorial. Munich. Available on:

<http://www.edbt2006.de/edbt-share/IQ-Tutorial.pdf>

⁶ Braman, S. (1989) Defining information: an approach for policymakers. *Telecommunication Policy*, 13, Elsevier Science, p. 233-242.

⁷ Machlup, F. i Mansfield, U. (1983) Cultural Diversity in Studies of Information. U: F. Machlup i U. Mansfield, ur. *The Study of Information*. Wiley, str. 3-59. Dostupno u: Emerald Insight.

⁸ Braman, S., op. quotation, p. 233-242.

⁹ Machlup, F. and Mansfield, U., op. quote. and Braman, S., op. quote, p. 233-242.

¹⁰ Levitin, A.V. and Redman, T.C. (1998) Data as a resource: properties, implications, and prescriptions. *Sloan Management Review*, 40 (1), Boston, MA: MIT, p. 89-101.

When it comes to the quality of business information, the question is what are the characteristics of quality business information and how to identify it. There are a number of different characteristics of information quality. Since not all of them can be investigated within this paper, they are grouped in such a way that only the main or general characteristics of the quality of information that are applicable to all business information are represented. Consequently, the research within this paper focused on ten representative characteristics of business information quality.

In this study, therefore, an attempt was made to investigate the role that good business information plays for exporters and the perception of the quality of business information from individual information sources. 10 characteristics (dimensions) of information quality are considered: relevance, accuracy, timeliness, completeness, reliability, form, availability, compatibility, security and validity of business information. These ten characteristics of information quality were selected because they summarize a large number of the 179 dimensions cited by Wang and Strong^[11], and because of the extensiveness required by the study of all 179 dimensions of information quality, it was necessary to reduce their number and summarize them.

3. RESEARCH METHODOLOGY

The primary objective of this research is to aggregate the perception of the quality of information from individual sources. The survey instrument selected for this research allows for an effective comparison between the independent variables of firm characteristics and the dependent variables of perceived quality of business information from individual sources. The survey instrument also provides tools for managing a large number of factors that play a role in the perception of the quality of export information. The study of the role and significance of the quality of business information in the export business for exporters was conducted from 15 January to 15 April 2017 on a sample^[12] of 300 exporting companies from the Register of Exporters of the Croatian Chamber of Economy. The interviewer (author of this paper) first contacted the manager in charge of the export business in the company by telephone, explained the purpose and purpose of the research, and then forwarded the questionnaire via email. After completing the questionnaire, the questionnaire was to be returned to the interviewer. Of the 300 exported companies contacted, the questionnaire was completed and submitted to 92 by the interviewer, which is 30.66%. The answers from all the questionnaires received entered the statistical mass and were used in aggregate form. The analysis of the basic activity of enterprises shows that the surveyed sample represents the most represented production activity with 96.73% (89 respondents), while the remaining 3.26% (3 respondents) are foreign trade enterprises. The largest number of surveyed companies in the

¹¹ Wang, R.Y. I Strong, D.M. (1996) Beyond accuracy: what data quality means to data consumers. *Journal of Management Information Systems*, 12 (4), Armonk, NY: M. E. Sharpe, Inc., p. 5-34.

¹² Petz, B. (1994) *Statistika za praksu*. Zagreb. Ministry of Internal Affairs, BiH

sample has up to 200 employees (51%), followed by enterprises from 200 to 500 employees (26%), enterprises from 1000 to 2000 employees (10%), enterprises from 2000 to 5000 (7%) and 500 up to 1000 (5%) employees and only one company with more than 5000 employees (1%).

4. RESULTS OF THE BUSINESS QUALITY RESEARCH RESEARCH PROVIDED BY THE INDOOR SOURCES

For the purpose of this research, 10 factors of quality of business information from individual information sources were observed: 1) Relevance - to what extent the information is applicable and whether it meets the needs of the users, 2) Accuracy - to what extent the information is accurate, whether there are errors. 3) Timeliness - the extent to which information is new or contemporary enough, 4) completeness - the extent to which information is complete, 5) reliability - the extent to which information is accurate and credible, 6) the form - how information is presented (e.g. written document, medium), 7) Accessibility - to what extent information can be accessed; can information be obtained at the time it is needed, 8) Compatibility - to what extent information is consistent with other information, can it be combined, 9) Security - to what extent access to information is restricted to maintain its security, 10) Validity - information is valid when it can be verified as correct and when it is consistent with other attributes such as accuracy, timeliness, integrity and security.

4.1. QUALITY OF BUSINESS INFORMATION OBTAINED FROM THE EXPORT ASSISTANCE INSTITUTIONS

Of the 92 exporters surveyed, only one does not use export assistance institutions in its export business (Table 1). Most respondents rate 67.4% of the information collected from export assistance institutions as rated 4. The accuracy of information collected from export assistance institutions 73.9% of respondents rate the rating 4. Timeliness of information collected from export assistance institutions 68.5% of respondents rate grade 4. The completeness of information gathered from export assistance institutions is the majority of respondents, 58.7% rate it as grade 4, while the reliability of such information 81.5% of respondents rate grade 4. Fifty percent of respondents form a form of information collected from institutions for Export Aid scores a score of 4 and 45.7% evaluates a score of 3. Rating 4, 75% of respondents rate the availability of information collected from export aid institutions. Compatibility of information collected from export assistance institutions with a rating of 3 is rated by 60.9% of respondents and 38% of respondents by a rating of 4. Security of information collected from export assistance institutions by 69.6% of respondents evaluates with a rating of 4. Finally, the validity of a rating of 4 evaluates 89.1% of respondents.

Table 1: Quality assessment of export information business information collected from export assistance institutions

RATING	No Use		1		2		3		4		5	
	f	%	f	%	f	%	f	%	f	%	f	%
Relevance	1	1,1	0	0	0	0	10	10,9	62	67,4	19	20,7
Accuracy	1	1,1	0	0	0	0	33	33,3	68	68,9	20	21,7
Timeliness	1	1,1	0	0	0	0	17	18,5	63	68,5	11	12,0
Completeness	1	1,1	0	0	0	0	26	28,3	54	58,7	11	12,0
Reliability	1	1,1	0	0	0	0	33	33,3	75	81,5	13	14,1
Form	1	1,1	0	0	0	0	42	45,7	46	50,0	33	33,3
Availability	1	1,1	0	0	0	0	16	17,4	69	75,0	6	6,5
Compatibility	1	1,1	0	0	0	0	59	63,9	35	38,0	0	0
Safety	1	1,1	0	0	0	0	26	28,3	64	69,6	1	1,1
Validity	1	1,1	0	0	0	0	43	46,3	82	89,1	5	5,4

Source: Research results of the author

From the above it can be concluded that the highest number of respondents rate the above mentioned factors of quality of information collected by export assistance institutions with an overall average score of 4.

4.2. QUALITY OF BUSINESS INFORMATION COLLECTED BY ECONOMIC ASSOCIATIONS

Out of 92 Croatian exporters surveyed (Table 2), 18 (19.6%) do not use economic associations in their export operations. 46.7% of respondents assess the relevance of business information collected from business associations by rating 4. Accuracy of information collected from business associations by 63% of respondents by rating 4. Timeliness of information collected by business associations 52.2% of respondents rate by rating 4. Rating 4, completeness of business information 43.5% of respondents evaluate the collected information from the associations, while the reliability of such information is rated by 67.4% of the respondents. The form of business information collected from the associations is rated by 45.7% of the respondents and 4, 33.7% of the respondents. The availability of business information collected from business associations is rated by 52.2% of respondents with a rating of 3. The percentage of compatibility of business information collected from business associations rated by grade 3 is 62%. The safety of business information collected from business associations is rated by 48.9% of respondents with a rating of 4.

The validity of business information collected from business associations is rated by 76.1% of respondents by a score of 4.

Table 2: Quality assessment of export information business information collected from economic associations

RATING	No use		1		2		3		4		5	
	f	%	f	%	f	%	f	%	f	%	f	%
Relevancy	18	19,6	0	0	0	0	8	8,7	4	4,3	2	2,3
Accuracy	18	19,6	0	0	0	0	2	2,2	5	5,8	1	1,4
Timeliness	18	19,6	0	0	0	0	2	2,9	4	4,8	4	4,3
Completeness	18	19,6	0	0	0	0	2	2,7	4	4,5	7	7,6
Reliability	18	19,6	0	0	0	0	5	5,4	6	6,4	7	7,6
Form	18	19,6	0	0	0	0	4	4,7	3	3,7	1	1,1
Availability	18	19,6	0	0	0	0	4	4,2	2	2,3	0	0
Compatibility	18	19,6	0	0	0	0	5	5,7	1	1,5	0	0
Safety	18	19,6	0	0	0	0	2	2,9	4	4,5	0	0
Validity	18	19,6	0	0	0	0	4	4,3	7	7,0	0	0

Source: Research results of the author

The highest number of respondents rated the above factors of quality of business information collected from business associations by an overall average score of 4.

4.3. QUALITY OF BUSINESS INFORMATION OBTAINED BY MARKETING AGENCIES

Of the 92 Croatian exporters surveyed (Table 3), 60 (65.2%) do not use market research agencies in their export

operations. Grade 5 assesses the relevance of business information collected from market research agencies by 31.5% of respondents. The accuracy of information collected from market research agencies is rated by 25% of respondents 5. The timeliness of information collected from market research agencies by 22.8% of respondents rated by 5. The completeness of business information collected by market research agencies by rating 5 is rated by 19.6% of respondents. while the reliability of such information is rated by 13% of the respondents with a rating of 5, and 21% of the respondents with a rating of 4. The form of business information collected from market research agencies by a rating of 5 is rated by 28.3% of the respondents. Grade 5 assesses the availability of business information collected from market research agencies by 19.6% of respondents. The percentage of compatibility of business information collected by market research agencies rated 4 is 22.8%. The safety of business information collected from market research agencies is rated by 19.6% of the respondents with a rating of 4. The validity of business information collected from market research agencies is rated by 22.8% of respondents as 5 and 12% by 4.

Table 3: Quality assessment of export market business information collected from market research agencies

RATING	No use		1		2		3		4		5	
	f	%	f	%	f	%	f	%	f	%	f	%
Relevancy	6	6,5,2	0	0	0	0	0	0	3	3,3	2	2,9
Accuracy	6	6,5,2	0	0	0	0	0	0	9	9,8	2	2,3
Timeliness	6	6,5,2	0	0	0	0	0	0	1	1,1	2	2,2
Completeness	6	6,5,2	0	0	0	0	0	0	1	1,4	1	1,5

Reliability	60	65,2	0	0	0	0	0	0	0	20	21,7	12	13,0
Form	60	65,2	0	0	0	0	11	1,1	5	5,4	26	28,3	
Availability	60	65,2	0	0	0	0	44	4,3	18	19,6	10	10,9	
Compatibility	60	65,2	0	0	0	0	22	2,2	21	22,8	9	9,8	
Safety	60	65,2	0	0	0	0	22	2,2	18	19,6	12	13,0	
Validity	60	65,2	0	0	0	0	0	0	11	12,0	21	22,8	

Source: Research results of the author

The highest number of respondents rated the business intelligence quality factors obtained from market research agencies by an overall average score of 5.

4.4. QUALITY OF BUSINESS INFORMATION OBTAINED BY OWN RESEARCH

All of the 92 examined Croatian exporters independently collect business information on the foreign market (Table 4).

Table 4: Quality assessment of export market business information collected through own research

Rating	No use		1		2		3		4		5	
	f	%	f	%	f	%	f	%	f	%	f	%
Relevancy	0	0	0	0	0	0	0	0	22	23,9	70	76,1
Accuracy	0	0	0	0	0	0	11	12,0	77	83,7	44	47,8
Timeliness	0	0	0	0	0	0	55	59,4	62	67,4	25	27,2
Completeness	0	0	0	0	0	0	22	23,9	61	66,3	99	107,8
Reliability	0	0	0	0	0	0	19	20,7	71	77,2	22	23,8

Form	0	0	0	0	0	0	44	47,8	49	53,3	39	42,4
Availability	0	0	0	0	0	0	99	107,8	43	46,7	40	43,5
Compatibility	0	0	0	0	0	0	18	19,6	57	62,0	17	18,5
Safety	0	0	0	0	0	0	16	17,4	57	62,0	19	20,7
Validity	0	0	0	0	0	0	33	35,4	71	77,2	18	19,6

Source: Research results of the author

Most of the respondents, 76.1% of them assess the relevance of the information collected through their own research grade 5. Accuracy of the information collected through their own research 83.7% of the respondents rate the rating 4. Timeliness of information collected through their own research 67.4% of the respondents rate the rating 4. Completeness of the information collected through their own research the majority of respondents, 66.3% of them rated 4, while the reliability of such information 77.2% of respondents rated 4. The form of information obtained through their own research 53.3% of respondents rated 4, and 42.4% rated 5. Rating 4, 46.7% of respondents evaluate the availability of information collected through their own research, 43.5% assess the availability of such information by rating 5. Compatibility of information collected through own research 62% of respondents rate it by rating 4. Security of information collected through their own research 62% of respondents rate it by a rating of 4. nom 4 is rated by 77.2% of the respondents.

From the above, it can be concluded that the highest number of respondents rate these factors of the quality of business information collected through their own research with an overall average score of 4.

4.5. QUALITY OF BUSINESS INFORMATION COLLECTED FROM OTHER SOURCES

Out of 92 Croatian exporters surveyed, only one in their export business does not use business information on foreign markets collected from other sources of information (Table 5). Fifty percent of respondents rate the relevance of business information collected from other sources as 3, and 47.8% as 4. The accuracy of information gathered from other sources is 50% rated by 4, and 48.9% by 3.

Table 5: Quality assessment of export information business information collected from other sources

RATING	No rating		1		2		3		4		5	
	f	%	f	%	f	%	f	%	f	%	f	%
Relevancy	1	1,1	0	0	0	0	4	50,6	4	47,8	1	1,1
Accuracy	1	1,1	0	0	0	0	4	45,5	4	50,9	0	0
Timeliness	1	1,1	0	0	0	0	5	59,5	3	39,6	0	0
Completeness	1	1,1	0	0	2	22,2	7	79,9	1	10,9	0	0
Reliability	1	1,1	0	0	0	0	6	66,3	3	33,0	0	0
Form	1	1,1	0	0	1	11,1	3	34,8	5	58,0	0	0
Availability	1	1,1	0	0	0	0	2	28,4	6	68,3	0	0
Compatibility	1	1,1	0	0	1	11,1	6	68,9	2	23,2	0	0
Safety	1	1,1	0	0	0	0	7	78,3	1	10,9	0	0
Validity	1	1,1	0	0	0	0	3	33,1	6	66,0	0	0

Source: Research results of the author

Timeliness of information collected from other sources was rated by 59.8% of respondents as 3, and 39.1% by 4. Rating 3, the integrity of business information

collected from other sources was evaluated by 85.9% of respondents, while the reliability of such information was evaluated by 66.3% of respondents. grade 3. The form of business information gathered from other sources is rated by 63% of respondents. Grade 4 assesses the availability of business information gathered from other sources by 68.5% of respondents. The percentage of compatibility of business information collected from other sources rated 3 is 73.9%. The security of business information collected from other sources is rated by 78.9% of respondents by a grade of 3. The validity of business information collected from other sources is rated by 65.2% of respondents, and 33.7% by 3.

The highest number of respondents rated these factors of quality of business information collected from other sources as an overall average grade of 3.

5. INFLUENCE OF PERCEPTION OF BUSINESS INFORMATION QUALITY ON EXPOSURE PERFORMANCE

There is no major difference between the overall average quality score of business information from individual information sources. Respondents rate the quality of business information only obtained from market research agencies by an overall average score of 5, and the quality of business information collected from other sources by an overall average score of 3, while the quality of business information obtained from export aid institutions, economic associations and their own research with an average grade of 4.

There is a statistically significant negative correlation between the growth of exports of the surveyed enterprises in the period 2014-2016 and the assessment of their own competitive position of enterprises in the foreign market ($r = -, 570, p < 0.01$), the use

of business information collected by research agencies market ($r = -, 228, p < 0.05$) and the use of business information collected through our own company research ($r = -, 245, p < 0.05$). From the above it can be concluded that respondents who do not use business information originating from market research agencies and do their own research during their export business do not see an increase in export business.

The direct correlation between the total income of the surveyed companies and profits ($r =, 386, p < 0.01$) and the value of exports ($r =, 878, p < 0.01$) was mentioned earlier. There is a statistically significant negative correlation between the total income of the respondent companies and the assessment of their own competitive position in the foreign market ($r = -, 218, p < 0,05$), and the use of business information collected from economic associations ($r = -, 206, p < 0, 05$). The correlation between the total income of the surveyed enterprises and the use of business information obtained from market research agencies ($r =, 341, p < 0.01$) and the use of business information from other sources of information ($r =, 249, p$) also proved to be statistically significant. < 0.05).

The higher the value of exports, the higher the profit of enterprises ($r =, 238, p < 0,05$), but the profit of the surveyed companies was statistically significantly negatively correlated with the use of business information collected from export assistance institutions ($r = -, 321, p < 0.01$).

The value of exports of the surveyed enterprises is statistically significantly related to the use of business information collected from market research agencies ($r =, 331, p < 0.01$), as well as to the use of business information collected through other sources of export market information ($r =, 371. p < 0.01$). The surveyed companies with higher export values make more frequent use of business information

collected from market research agencies and other sources of business information.

6. DISCUSSION OF RESEARCH RESULTS

Investigating the importance of quality business information for exporters wanted to test the hypothesis: The success of exports is proportional to the use of quality business information on the export market. Considering that the ratings of certain factors of business information quality in the opinion of respondents mostly range from 3 to 5, with 5 being the highest grade, therefore the differences in individual grades are relatively small, so there are no big differences between the overall average grade of business quality information from individual sources of information. Respondents rate only the quality of business information obtained from specialized market research agencies with an overall average score of 5, and the quality of business information collected from other sources of information with an overall average rating of 3, while the quality of business information obtained from export assistance institutions, economic associations and their own research 4. On the basis of this, it can be concluded that the highest quality business information on the export market, according to the opinion of the exporters examined, is provided by specialized market research agencies. This is understandable given that market research agencies work for the client / client of the business information and seek targeted information tailored to the client. In order to attract and retain customers, they want to be better than their competitors, and it is in their interest to provide quality business information that their customers will be happy with.

The quality of business information obtained from export assistance

institutions, economic associations and their own research is evaluated by Croatian exporters from the tested sample with an overall average score of 4, which makes it impossible to further rank these sources of business information according to the quality of business information they provide.

Respondents who frequently use market research agencies also make frequent use of other sources of business information, and have seen an increase in exports between 2014 and 2016. Respondents who frequently gather business information through their own research also frequently use other sources of business information, and their exports have increased in the observed period.

7. CONCLUSION

In support of the hypothesis, the conclusion is that respondents who do not use business information obtained from specialized market research agencies and do their own research during their export business do not record an increase in export business. The surveyed companies that have higher export values more frequently use business information collected from market research agencies. Given that respondents rate the quality of business information obtained from market research agencies and export market information collected through their own research higher than the quality of business information collected from other sources of information, it can be assumed that the quality business information obtained from market research agencies and collected by their own research is prevalent in the use of business information for export operations, and business information collected from other sources of information serves as ancillary to exporters. This research focused on the users (recipients) of business information on the export market. However, the perception of the quality of business information from a supplier's standpoint and from that of an information consumer may be different. It

would be interesting to investigate export market information providers and their perceptions of the quality of business information, since discrepancies in the perceived quality of business information between users and suppliers of information can be crucial in improving the quality of export information business information. It is to be expected that this research also provided suppliers (sources) of business information on the foreign market with an overview of the perceived quality of the information they provide and pointed out guidelines for improving the quality of that information.

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