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INTRODUCTION

Quality has become one of the basic problems of modern management in organizations (Mazur, 2019). It should be a hint where a possible improvement is needed and element included in strategy. The development of the strategy should concern enterprise's development in various ways, e.g. technologies used, products or services offered, technological resources, quality, methods of production organization. It is therefore necessary to look for a variety of tools that will allow to indicate the direction of the strategy and to resolve key operational problems of the enterprise (Klimecka-Tatar and Ingaldi; Kardas, 2018). Especially in the case of service enterprises, an important element of the strategy is building the right relationship with customers, affecting their satisfaction (Pilarz and Kot, 2018). A primary objective of each enterprise should be to meet and even exceed requirements of their customers, what allow to build a strong relationship between company and their customers (Knop, 2019; Krynke et al., 2014). High quality of services is needed.

The importance and size of the services sector in the modern economy is growing all the time. Furthermore, quality assurance in this sector is seen as the basis for the functioning of this type of enterprise (Kowalik and Klimecka-Tatar, 2018). The specific situation prevails among e-shops, i.e. e-commerce.

The development of e-commerce and communication technologies has allowed changes in the traditional trading system, currently customers can use both stationary shops and e-shops (Midor, 2019). E-commerce this year has become even more popular due to Covid-19 and mobility restrictions introduced in many countries. E-shops allowed for purchases of necessary products, online shopping's structure changed a lot.

E-commerce is an important engine of development and changes the way business is conducted. It transformed the market and reduced trade barriers for enterprises of all sizes, enabling sales over long distances and at various scales, thus increased competition in the market (Gard and Keoleian, 2002; Kinney,

2000; Ingaldi and Ulewicz, 2018). The convenience of shopping online and paying for services electronically is very valuable to all customers in all parts of the world (Fedorko et al., 2018).

The aim of the paper was to assess the quality of services offered by the research e-shop. During the research the Critical Incident Technique (CIT) was used. A direct interview was conducted with the customers of the research e-shop who, after using its services, agreed to share their impressions and opinions. They were supposed to describe incidents or situations related to the research e-shop, which they have in their memory, and which caused special satisfaction or dissatisfaction. This research allowed to indicate the overall level of customers' satisfaction and potential areas for improvement.

LITERATURE REVIEW

Critical Incident Technique (CIT) is one of the most popular, but at the same time the most time-consuming methods of assessing the service quality. J.C. Flanagan is widely believed to be the author of this method. He developed this research technique for the Air Force Psychology Program of the United States Air Force during World War II (Krok, 2011; Flanagan, 1954; Butterfield et al., 2005). His research was conducted in three different service enterprises: in hotel, restaurant and airline. 75 interviewers took part in the research. Their task was to collect data from respondents on ten critical incidents that occurred during the service provision process: five with positive and five negative that were particularly memorable.

Flanagan defined the CIT method as "a set of procedures for collecting direct observations of human behavior ... outlines procedures for collecting observed incidents having special significance and meeting systematically defined criteria." (Flanagan, 1954). So CIT is a method that relies on a set of procedures to collect, content analyze, and classify observations of human behavior (Gremier, 2004).

As mentioned earlier, the respondents' task was to describe incidents they had in their memories that were particularly positive or negative for them. Flanagan also defined incident itself in his work as: "any observable human activity that is sufficiently complete in itself to permit inferences and predictions to be made about the person performing the act. To be critical the incident must occur in a situation where the purpose or intent of the act seems fairly clear to the observer and where its consequences are sufficiently definite to leave little doubt concerning its effects" (Flanagan, 1954).

A critical incident is the interaction between a customer and an employee of a service company that is particularly satisfactory or unsatisfactory. The level of satisfaction is the difference between the perceived features of the service and the expectations of the recipient. If the service features do not meet the expectations, the customer is dissatisfied, while if the service features exceed expectations, the buyer is willing to renew the purchase of the service. High

satisfaction favors the formation of strong, emotional relationships, brings the customer back to the company (Otto, 2004; Ingaldi and Kotus, 2019).

Therefore, the respondents have to describe with all details critical incidents that occurred during the service process (i.e. situations that have influenced the perception of a given service in a particular way, and those that deviate significantly from the average). The assessment of these incidents by the customers, based on their subjective feelings, is used to isolate situations that are typical of negative and positive feelings of the customers, as well as to determine the frequency of their occurrence.

Critical incidents described by the respondents are classified into categories that correspond to specific areas of the given service enterprise's activity (Stoma and Doroszewicz, 2009; Jubenville and Cairns, 2016). This classification then allows to recognize which areas of the service provider's operation need to be improved. The best-known division into categories was made by the precursors of the CIT method: Bitner, Booms and Tetreault (Bitner et al., 1990).

METHODOLOGY

The research presented in the paper is part of a larger research on the quality and safety of e-commerce services. Some results regarding the safety of online shopping according to customers' opinion were presented in the paper (Ingaldi and Brožová, 2020).

The research included in this paper had a form of a direct interview and its aim was to analyze service quality of the chosen e-shop. Only people who previously used the services of the research e-shop and expressed their willingness to participate in this research, took part in the interview.

At the beginning, respondents were asked if they actually were customers of the e-shop, to confirm their relationship with the research object. Then they were asked if they remembered a particularly positive or negative incident related to it and if they would like to share it with the interviewers. Their task was to accurately describe the incident and the cause that affected their particular feelings.

The study was conducted from April 2019 to March 2020. 914 respondents took part in it, who described 1006 various critical incidents related to the research e-shop.

The obtained data were analyzed: at first all incidents were divided into categories and groups as well as into positive and negative incidents, and then the percentage fractions for individual categories and groups were presented. The results were presented in tabular form. The percentage of positive incidents can be interpreted as a synthetic result measuring experienced quality.

Then a matrix of two variables was built (Fig. 1), where the X axis is the number of positive incidents assigned to each category (potential of magic moments), and the Y axis is the number of negative incidents (potential of poverty moments). Both variables were assessed on a two-point scale: small and big. Small and big assessments were based on the number of incidents in each

category. The scale limit was determined independently on the basis of the analyzed data (Urban, 2018).

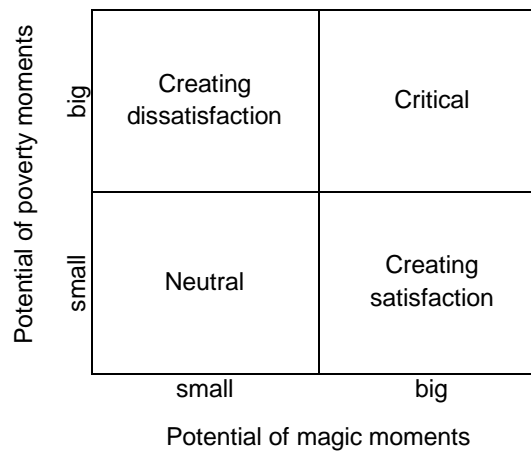


Fig. 1 Matrix of classification of critical incidents

Source: (own study on the basis of Ravenscroft and Rogers, 2003)

The lateral limits were determined by the minimum and maximum numbers of positive and negative incidents (separately for both axis), while the division limit as half of this interval.

RESULTS

All 1006 critical incidents selected from the respondents' answers during the direct interview were classified. These incidents were divided into 8 thematic groups and 32 categories. In Table 1 a list of positive and negative incidents that were described by customers together with their classification was presented. Analyzing the data contained in Table 1, it can be seen that the distributions of critical and positive incidents were quite similar, with a slight majority of negative incidents. This situation is rather worrisome, because only in case of 48.51% of the incidents described by the customers, their high satisfaction was noted, which already indicates the need for improvement actions to make customer satisfaction higher.

Among the positive incidents, the following categories were the most numerous: quality of the ordered product (G7) and website of the e-shop (G1). However, the least numerous category was safety of service (G8).

Among the positive categories, those with more than 20 incidents deserve special attention. This means that customers were particularly satisfied with the incidents related to these categories, i.e.: detailed data on product parameters (2), contact data (10), available telephone number (11), selection of payment method (14), shipment's tracking option (17), delivery of the shipment at specific time (18), delivery time of the order (19), possibility to open the package at the moment of order delivery (25), quality of the ordered products (29).

Table 1 Results of CIT analysis for the research e-shop

Groups and categories	Type of incidents				All incidents	
	Positive		Negative		Sum	
	number	%	number	%	number	%
G1. Website of the e-shop						
1. Product description	14	1.39	17	1.69	31	3.08
2. Detailed data on product parameters	23	2.29	5	0.50	28	2.78
3. Product photo	11	1.09	19	1.89	30	2.98
4. Description of the materials the product is made of	9	0.89	4	0.40	13	1.29
5. Information about price	6	0.60	15	1.49	21	2.09
6. Information about delivery date	18	1.79	19	1.89	37	3.68
7. Product search engine	13	1.29	7	0.70	20	1.99
8. Product comparison website	4	0.40	3	0.30	7	0.70
Sum for G1	98	8.05	89	7.85	160	15.90
G2. Contact with the e-shop						
9. Enterprise/seller name	6	0.60	17	1.69	23	2.29
10. Contact data	26	2.58	21	2.09	47	4.67
11. Available telephone number	23	2.29	28	2.78	51	5.07
12. Chat with consultant	18	1.79	9	0.89	27	2.68
Sum for G2	73	7.26	75	7.46	148	14.71
G3. Payment methods						
13. Accurate bank details	5	0.50	9	0.89	14	1.39
14. Selection of payment method	25	2.49	17	1.69	42	4.17
15. Cash on delivery option	14	1.39	11	1.09	25	2.49
Sum for G3	44	4.37	37	3.68	81	8.05
G4. Transport						
16. Selection of the shipment's delivery agent	16	1.59	27	2.68	43	4.27
17. Shipment's tracking option	26	2.58	14	1.39	40	3.98
18. Delivery of the shipment at specific time	24	2.39	38	3.78	62	6.16
Sum for G4	66	6.56	79	7.85	145	14.41
G5. Order fulfillment						
19. Delivery time of the order	29	2.88	19	1.89	48	4.77
20. Current information about the order	14	1.39	5	0.50	19	1.89
21. Possibility to change the order after its placing	9	0.89	16	1.59	25	2.49
22. Possibility to cancel the order after its placing	12	1.19	9	0.89	21	2.09
Sum for G5	64	6.36	49	4.87	113	11.23
G6. Delivery status						
23. Delivery process	18	1.79	36	3.58	54	5.37
24. Packaging condition	19	1.89	24	2.39	43	4.27
25. Possibility to open the package at the moment of order delivery	21	2.09	29	2.88	50	4.97
Sum for G6	58	5.77	89	8.85	147	14.61
G7. Quality of the ordered product						
26. Compliance of the package with the order	9	0.89	10	0.99	19	1.89
27. Delivered product parameter	18	1.79	7	0.70	25	2.49
28. Compliance of the ordered products with the description	17	1.69	11	1.09	28	2.78
29. Quality of the ordered products	21	2.09	34	3.38	55	5.47
30. Meeting customer expectations	17	1.69	29	2.88	46	4.57
Sum for G7	82	8.15	91	9.05	173	17.20
G8. Safety of service						
31. Personal data security	2	0.20	5	0.50	7	0.70
32. Transaction security	18	1.79	14	1.39	32	3.18
Sum for G8	20	1.99	19	1.89	39	3.88
Total sum	505	48.51	528	51.49	1006	100.00

Among the negative incidents, the following categories were the most numerous: quality of the ordered product (G7) and delivery status (G6). However, the least numerous category was safety of service (G8).

Also in the case of negative incidents, those categories where more than 20 incidents were reported, were indicated. These categories are: contact data (10), available telephone number (11), selection of the shipment's delivery agent (16), delivery of the shipment at specific time (18), delivery process (23), packaging condition (24), possibility to open the package at the moment of order delivery (25), quality of the ordered products (29), meeting customer expectations (30). Customers in these categories were often dissatisfied because of the occurrence of certain incidents. It is worth noting that some categories overlap with those that also stood out in the case of positive incidents, which will be more evident in further analysis.

Based on the data included in Table 2, the minimum and maximum numbers of positive and negative incidents were determined and the center of the interval was calculated. In case of positive incidents, the limits were $< 2;29 >$, and the center of the interval was 15.5, while in case of negative incidents $< 3;38 >$, and 20.5. Ready matrix was presented in Figure 2.

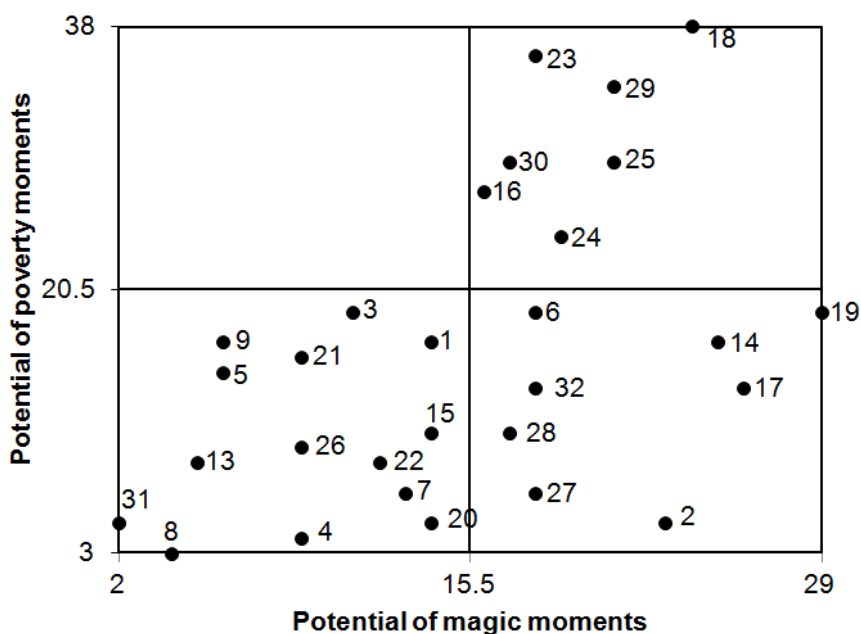


Fig. 2 Matrix of classification of critical incidents for the research e-shop

Source: (own study)

Analyzing Figure 2, it can be seen that no category of incidents creating dissatisfaction was recorded, i.e. numerous negative incidents and a few positive incidents. This situation should be assessed positively, despite the fact that fewer positive than negative incidents were recorded in general.

Several categories of incidents that were referred as critical have been reported. These are categories where a lot of negative and positive incidents have been reported. These categories include: selection of the shipment's delivery agent

(16), delivery of the shipment at specific time (18), delivery process (23), packaging condition (24), possibility to open the package at the moment of order delivery (25), quality of the ordered products (29), meeting customer expectations (30).

None of the categories is really related to the research e-shop. The last two categories are related to the quality of delivered products, i.e. they depend on the producers. The research e-shop may contact producers or suppliers of products which did not meet customers' requirements, with a request to take into account the comments of customers, and in case of the absence of their response, may refrain from selling products that are complained too often. Other categories are related to companies that deliver packages to customers and all the process of delivery. We have to remember that the course of delivery depends on courier and transport enterprises. The research e-shop may affect the category selection of the shipment's delivery agent (16), because it depends on the management of the enterprise which courier and transport enterprises to use. For complaints related to other categories, management should consider terminating cooperation with the courier company that customers complain a lot about.

Due to a more thorough analysis of these categories, it will be possible to propose improvement actions. Such actions should reduce the negative critical incidents, and then should increase the level of customers' satisfaction of the research e-shop.

CONCLUSION

In the paper the quality of services offered by the e-shop with use of the CIT method was assessed. The research was conducted in the form of a direct interview with people who used the services of the research e-shop. 1006 critical incidents selected from the respondents' answers during the direct interview were classified. These incidents were divided into 8 thematic groups and 32 categories.

The analysis allowed to indicate that less than 50% of the incidents described by the customers were positive incidents that cause their high satisfaction, which is not a good situation for the research e-shop. Improvement actions are needed.

Analysis of the obtained results allowed to indicate which categories of incidents should be first deeply analyzed in terms of improvement. These categories were: selection of the shipment's delivery agent (16), delivery of the shipment at specific time (18), delivery process (23), packaging condition (24), possibility to open the package at the moment of order delivery (25), quality of the ordered products (29), meeting customer expectations (30). Improvement in these areas should reduce the occurrence of negative critical incidents, and thus affect customers' satisfaction. However, it is difficult because these categories are not directly related to the research e-shop. They require cooperation with product

suppliers and courier enterprises which services are used by the research e-shop.

Presented research is not free from limitations. The authors had no effect on the research sample. Only people who previously used the service of the research object and agreed to take part in the research could be interviewed. Some of these people used the services of the research e-shop much earlier than the interview with them, which could have an impact on remembered details of the critical incidents they described. Perhaps research carried out in another facility would give completely different results, which indicates the need for similar research in other e-shop selling similar, but also different products. This would indicate the strengths of e-shops in general, but also their features that customers do not like and complain about. Research should be continued to confirm the obtained result or indicate other additional categories of critical incidents that may affect the quality of services provided by the research e-shop and other e-shops.

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REFERENCES

- Bitner, M.J., Booms, B.H. and Tetreault, M.S. (1990). The Service Ecounter: Dignosing Favourable and Unfavourable Incidents. *Journal of Marketing*, 54(1), pp. 71-84.
- Butterfield L.D., Borgen W.A., Amundson N.E., and Maglio A.-S.T. (2005). Fifty years of the critical incident technique: 1954-2004 and beyond. *Qualitative Research*, 5, pp. 475-497.
- Fedorko, R., Fedorko, I., Riana, I.G., Rigelský, M., Oleárová, M. and Obšatníková, K. (2018). The impact of selected elements of e-commerce to e-shop recommendation. *Polish Journal of Management Studies*, 18(1), pp. 107-120, doi: 10.17512/pjms.2018. 18.1.09.
- Flanagan, J.C. (1954). The Critical Incident Technique. *Psychological Bulletin*, 51(4), p. 327.
- Gard, D. and Keoleian, G. (2002). Digital versus Print: Energy Performance in the Selection and Use of Scholarly Journals. *Journal of Industrial Ecology*, 6(2), pp. 115-132.
- Gremler D.D. (2004). The Critical Incident Techniquein Service Research. *Journal of Service Research*, 7(1), 65-89, doi: 10.1177/1094670504266138.
- Ingaldi M. and Brožová S. (2020). Safety of Online Shopping According to Customers. *System Safety: Human – Technical Facility – Environment*, 2(1), pp. 73-81, doi: 10.2478/czoto-2020-0010.
- Ingaldi M. and Kotus M. (2019). Use of the CIT Method for Quality Assessment of Catering Services. *Conference Quality Production Improvement – CQPI*, 1(1), pp. 440-447, doi: 10.2478/cqpi-2019-0060.
- Ingaldi, M. and Ulewicz, R. (2018). Evaluation of Quality of the e-Commerce Service. *International Journal of Ambient Computing and Intelligence*, 9(2), pp. 55-66, doi: 10.4018/IJACI.2018040105.
- Jubenville, T. and Cairns, S. (2016). An Introduction to the Enhanced Critical Incident Technique. *International Journal Of Qualitative Methods*, 15 (1).
- Kardas, E. (2018). Analiza wybranych wskaźników efektywności pracy wielkiego pieca. *Systemy Wspomagania w Inżynierii Produkcji*, 7(3), pp. 217-227.

- Kinney, S. (2000). RIP fixed pricing: The internet is on its way to "marketizing" everything. *Business Economics*, 35(2), pp. 39-44.
- Klimecka-Tatar D. and Ingaldi M. (2020). How to Indicate the Areas for Improvement in Service Process - the Knowledge Management and Value Stream Mapping as the Crucial Elements of the Business Approach. *Revista Gestao & Tecnologia- Journal of Management and Technology*, 20(2), pp. 52-74, doi: 10.20397/2177-6652/2020.v20 i2.1878.
- Knop, K. (2019). Evaluation of Quality of Services Provided by Transport & Logistics Operator from Pharmaceutical Industry for Improvement Purposes. *Transportation Research Procedia*, 40, pp. 1080-1087, doi: 10.1016/j.trpro.2019.07.151.
- Kowalik K. and Klimecka-Tatar D. (2018), The process approach to service quality management. *Production Engineering Archives*, 18, pp. 31-34, doi: 10.30657/pea.2018.18.05.
- Krok, E. (2011), Jakość usług medycznych. *Polskie Stowarzyszenie Zarządzania Wiedzą. Seria: Studia i Materiały*, 38, pp. 98-107.
- Krynke, M., Knop, K. and Mileczarek K. (2014). Identifying Variables That Influence Manufacturing Product Quality. *Production Engineering Archives*, 4, pp. 22-25, doi: 10.30657/pea.2014.04.06.
- Mazur, M. (2019). Quality Assurance Processes in Series Production of Car Elements. *Conference Quality Production Improvement – CQPI*, 2019, 1(1), pp. 610-617, doi: 10.2478/cqpi-2019-0082.
- Midor, K. (2019). New technologies and quality of customer service – case study. *Multidisciplinary Aspects of Production Engineering*, 2(1), pp. 548-558, doi: 10.2478/mape-2019-0055.
- Otto, J. (2004). *Marketing relacji. Koncepcja i stosowanie*. Warszawa: Wyd. C. H. Beck.
- Pilarz D. and Kot S. (2018). Evaluation Of Customer Service Quality And Security In Retail Network. *System Safety: Human – Technical Facility – Environment*, 1(1), 647-652, doi: 10.2478/czoto-2019-0082.
- Ravenscroft F.F. and Rogers G. (2003). A Critical Incident Study of Barriers to Participation on the Cuckoo Trail, East Sussex. *Managing Leisure*, 8(3), pp. 184-197.
- Stoma, M. and Doroszewicz, S. (2009). Jednorodność postaw w badaniach charakterystyki wymiarowej usługi ubezpieczenia autocasco spostrzeganej przez klientów indywidualnych. *Towaroznawcze Problemy Jakości*, 3, pp. 44-52.
- Urban, W. (2018). *Zarządzanie jakością usług*. Warszawa: Wydawnictwo Naukowe PWN S.A.

Abstract: The development of e-commerce and communication technologies has allowed changes in the traditional trading system, currently customers can use both stationery shops and e-shops. People no longer need to leave their homes to go shopping, even everyday groceries. They can use the e-shop at any time of day or night, at home or at work. There are no queues, they can get to know other people's opinions, compare products and services with each other. They can shop while sitting on the sofa in front of the TV and sipping tea. Shopping can be done in the e-shop up to thousands of kilometers away. Especially in the current Covid-19 pandemic, online shopping has become very popular. The aim of the paper was to assess the quality of services offered by the research e-shop. During the research the Critical Incident Technique (CIT) was used. A direct interview was conducted with the customers of the research e-shop who, after using its services, agreed to share their impressions and opinions. They were supposed to describe incidents or situations related to the research e-shop, which they have in their memory, and which caused special satisfaction or dissatisfaction. The analysis allowed to indicate that less than 50% of the incidents described by the customers were positive incidents that cause customers' high satisfaction, which is not a good situation for the research e-shop. Improvement actions are needed.

Keywords: critical incident technique, service quality, e-commerce