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KANO MODEL AS A TOOL OF EFFECTIVE CUSTOMER SATISFACTION DIAGNOSTICS OF POSTAL SERVICES

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Abstract. The paper deals with the solution of the issue of achieving customer satisfaction of the postal company. Through the diagnostic procedures used in quality management in services, the focus is on the application of KANO model as one of the customer satisfaction measurement models. The primary research carried out in four different districts of Slovakia identified the relationship between customer satisfaction level and quality attributes through 5 categories of perceived quality by customers. The categories were identified as attractive, one-dimensional, mandatory, insignificant and contradictory attributes of postal products that create their quality parameters and reflect the requirements of customers. Significant findings concern mainly the identified differences in survey results in individual selected districts of Slovakia. There were also differences in the categories of postal quality requirements in respondent segments that differed in gender, residence, or age of respondents. One of the conclusions of the solved issue is to propose framework therapeutic procedures in response to individual diagnostic statements that resulted from the performed research activities.

Keywords: customer; measuring satisfaction; KANO model; postal services

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1. Introduction

Every company needs to know their customers to identify what are their requirements for the offered services. It is therefore clear that the importance of measuring customer satisfaction has been growing for a long time. Examining customer satisfaction has an irreplaceable place in the algorithms of marketing activities, whether it is the identification and measurement of customer satisfaction or customer dissatisfaction. Proof of this statement is that most research activities aimed at satisfaction research focus on the opposite view, customer dissatisfaction. This view is still currently part of contributions in major professional publications around the world e.g. Juznik Rotar, L. and Kozar, M. (2017) discusses this issue in the environment of modern online shopping. Other authors

(Mateides and Dado, 2002, Bostanci and Erdem, 2020, Alam et al. 2020) use modern and effective analytical procedures to investigate such a "simple" issues at first glance that include fuzzy multicriteria decision-making techniques and geostatic modules. Some authors, such as Jankalova and Jankal (2020), also link customer satisfaction research with the process of globalization and with the pressure to achieve and maintain the competitiveness of the enterprise on domestic and international market.

A customer is a person or institution that creates a demand for products or services. Customer satisfaction is achieved through the strict orientation of companies to meet customer requirements and expectations (Kmet, 2001). Customer orientation means an individual approach to the customer and learning from experience in order to maintain his/her satisfaction, among other things (Mateides and Dado, 2002).

In the literature, we encounter several definitions clarifying the concept of customer satisfaction. Standard STN 9000: 2015 Quality Management Systems – Basic Vocabulary (2015) defines this term as: "Customer satisfaction expresses the level perceived by customers to the extent to which their requirements have been met." Jones (1995) says that "needs and expectations are satisfied at all times, throughout the life of the product or service. Without it, we would not gain the trust of the customer." „Overall, customer satisfaction can be understood as the result of a complex psychological comparison process” (Hund 1997, Oliver 1980 according to Mateides, 1999, p. 10). Mateides (1999) states that satisfaction is "the result of a complex psychological comparison process, where the customer compares his/her own experience after using a product or service with expectations, desires, individual norms or other benchmarks". Rostasova et al. (2008) talks about “comparing customer expectations with reality. Of course, the expectations of each customer are different and influenced by the customer himself/herself. Their individual demands have a significant impact on customers' expectations." Kotler, Amstrong (2004) states that: “Customer satisfaction depends primarily on how far it is perceived or fulfilled customer expectations in relation to the acquired product or the value it brings to the customer. Successful companies strive to make their customers happy because then they buy the product repetitively and share their good experience, too" Kita et al. (2010) defines customer satisfaction as a „condition that the customer feels from the use of the purchased product or services, and which expresses the degree of compliance of the offer with the customer's expectations evoking his/her behaviour. Customer satisfaction is reflected in his/her repeated purchases."

The situation where customers are satisfied and they also show it through their purchasing decisions, we cannot yet call their loyalty. Satisfaction is a condition that can flip to one side or the other. One mistake is enough, and the customer can "replace" the company. If satisfaction is an expression of state, loyalty is the action that results from that state. To have loyal customers means, firstly to be sure that they do not buy from the competition, and that even in the case of a negative experience with the conduct of the company, they will not immediately go to the competitive company (Ligasova, 2013).

The term satisfaction of customer requirements means the perception and understanding of customer expectations that the company has fulfilled or exceeded through its activities.

Evaluating customer satisfaction identifies how customers understand the business. The evaluation of the satisfaction of the customer's requirements takes place only in his/her head and may or may not suit the actual situation. People form their attitudes quickly, but they change them very slowly (Mateides and Dado, 2002).

There are several theoretical approaches to measuring customer satisfaction, including for example: differential model of customer satisfaction, model of possible reactions, Kano model, model GAP 5 and others. New and new recommendations and procedures are constantly being created in the works of experts around the world and goes into absolute detail in the issue of achieving customer satisfaction. For example, Suarez (2015) presented how written communication with the customer should take place in order to achieve a higher degree of satisfaction in handling complaints and grievances. He pointed out the importance of the correct structure/content of written communication, punctuation, grammar, decency, etc.

We attribute customer dissatisfaction to negative feelings, such as disappointment that can arise from a comparison of an expected and perceived product or service. We can say that if the actual performance of the product or service is lower than the customer expects, the customer will be dissatisfied. The direct ratio applies here, the more the gap between the expectation and the actual performance/value of the product or service deepens, the more dissatisfied the customer will be. We understand dissatisfaction as the opposite of satisfaction. The following factors influence the increase in customer dissatisfaction (Salgovicova, 2005):

- Objective factors:
 - Variant selection - more equivalent alternatives - the customer decides more easily when choosing a product, if the selected variant significantly exceeds other possibilities of solving the problem. When the customer is deciding between several similar variants, his/her decision-making can also be influenced by rational stimuli;
 - Limited possibility of testing - in some areas of business, such as delivery services, the customer does not have the opportunity to get acquainted with the real properties of the product, which can cause him/her a feeling of post-purchase dissatisfaction. In such situations, it can use reference recommendations to "materialize" the offer;
 - Voluntary purchase - it seems paradoxical, but it often happens that when the customer does not have much choice when buying, he/she will accept it rather than with a larger selection, because he/she has no other choice;
 - The possibility of product return - we know from practice that in the phase of deciding between alternatives to the product, the customer behaves more tolerant. It is easier to decide if he/she knows about the possibility of returning the product. It is not pleasant for a company when a dissatisfied customer returns a product, but it helps to reduce the impact of various misunderstandings on the customer's further purchasing behaviour.
- Subjective factors:
 - Poor information - when the customer has little information about the product or service, which increases the possibility of his/her other expectations and wishes;
 - Customer personality - personality characteristics of the customer, e.g. a combination of indecisive nature with low self-confidence. This characteristic may result in a greater susceptibility to post-purchase non-compliance and consequently increased search of other product or service alternatives.

Recent research in this area (Lin, CC and Lai, FY (2020)) points to the existence of a relationship between the customer's insensitivity to customer benefits and the customer's overall perception of service quality.

Services have become an integral part of human existence. Their consumption is necessary for the existence of man and is a condition for his/her further development. They satisfy the full range of his/her needs. Experts agree on several characteristics of services that are linked to specific categories of services. They are useful features that make up their utility value and that could meet customer needs. The service is produced and provided to meet the needs of non-producers. They are products of labour that are useful other way than the creation of material goods. The production of services is currently one of the most important areas of economic development in developed countries. The provision of the service cannot usually be separated in space or time, services are usually consumed at the time and place where they are produced that results from their intangibility. When providing services, live work is needed above all, the results of this work are consumed in the provision. Services are one of the important components of living standards. They arose as an accompanying phenomenon of the production of many material goods. They make it possible to increase consumption, satisfy the higher needs of man and society. They gradually replace several material goods (Mateides and Dado, 2002).

Postal services are services provided for the purpose of delivering a postal item, namely the collection and distribution of a postal item (Act No. 324/2011). A postal service is not the creation of a postal item if the created postal item is not distributed by the person who created it or if, after creation, the postal item is handed over by the sender on behalf of the sender to the postal undertaking. The postal service is also not the transport of postal items if it is performed by a person who does not collect, sort or deliver and self-deliver for these postal items.

The universal service is the offer of postal services that serves to ensure the minimum satisfaction of the needs of all users of postal services in Slovakia to ensure the availability of access points of the public postal network and contact points of the public postal network under the same conditions, in the specified quality and price, each working day with at least one pick-up and delivery per day. The universal service provider is one or more postal undertakings. This provider is obliged to provide universal service on the basis of a postal license and under the conditions and in the manner specified by the relevant law. The universal service includes: collection and distribution of postal items weighing up to and including 2 kg; collection and distribution of parcels; collection and distribution of packages weighing up to and including 10 kg; distribution of packages weighing up to and including 20 kg, if they have been selected abroad by a foreign universal service provider; collection and distribution of registered items and insured items; collection and distribution of official consignments; services connected with registered postal items at most within the scope of additional services according to the rules for international postal services and return of the found postal item to the sender.

The services of Slovak Post are provided by leading providers of modern communication, distribution and payment services on the domestic market, with created logistics conditions for doing business in Central and Eastern Europe. It is a trusted mediator that meets the changing needs of customers and offers new products and comprehensive solutions with added value and high-quality service (www.posta.sk).

Slovak Post has been operating in the postal services market for over twenty years. It currently provides a wide portfolio of services. These include, in particular, relocation services (letter items, parcels), money services, procurement services, business services, services for telecommunications operators, e-government services, POSTshop, other services (newspaper and magazine subscriptions, TIPOS, postal folders, collection rides, customs negotiation of consignments, copying services, advertising services), postal philatelic service, personalized stamps (My stamp).

2. The analysis of the current situation in the environment of the national postal operator

The most important requirement of postal customers for the services provided is their quality. Quality is an important aspect that has come to the attention of postal service providers long time ago. The quality of postal services serves as a basic tool of the postal company to maintain and increase competitiveness in the market.

The quality is expressed as the conformity of correctly defined requirements that satisfy customer needs. The definition of the quality of postal services emphasizes the goal of quality of service, in which the needs and expectations of customers are met through a price that represents the value of the service. As with other service providers, the reasons for interest in quality issues in mail are defined according to several aspects.

In summary: competitive pressures between competing companies in the postal market, the demands of postal customers, rapid technological developments in the postal sector, customer expectations are constantly increasing, quality increases market success and leads to profitability, quality improves postal market image and reputation, massive education in the field of rights protection of postal company customer rights, stricter regulation of quality of postal services, introduction of quality management systems in postal company, positive benefits in growth of labor productivity, cost reduction, system planning orientation, human potential development, increasing knowledge of postal employees and a friendly environment within the postal company.

Improving the quality of postal services represents achieving a better level of quality compared to the previous state. The evaluation of customer satisfaction of postal companies consists in the application of various methods of measuring quality. The selected methods of quality measurement should be optimal for the postal company in terms of suitability for their use and should meet all the given requirements. Therefore, it is necessary to evaluate the quality measurement methods themselves.

Each method of measuring the quality of services has its specific features, which evaluate the specific features of the provided postal service. These aspects concern: time availability, availability of contact and access points, security during the relocation process, staff expertise, affordability of postal services, waiting time at post offices, handling of complaints and grievances and information on postal services (Diabelkova, 2013).

Other repeatedly used method of measuring customer satisfaction in the post includes the test customer method - Mystery shopping. This method is implemented through trained persons who are not real customers, but "play" directly in the operation the role of a real customer and evaluate the verbal and non-verbal communication of first contact employees, their expertise and other important aspects. Customer satisfaction with Slovak Post is also determined based on the implementation of primary quantitative research, carried out by the method of questioning. Respondents can express their satisfaction or dissatisfaction with postal services with their answers. The data is obtained by directly contacting a randomly selected customer at the post office. The survey is carried out by an external institution. Another method is the End to End Method, which is one of the non-electronic methods for monitoring the quality of postal services. It is focused on determining the time of the relocation process of several types of shipments.

In order to continuously improve the quality of universal service, the regulatory authority in the quality requirements prescribes the universal service provider to ensure the measurement of customer satisfaction with the quality of universal service. Table 1 presents the results of measuring customer satisfaction with the quality of the universal postal service in 2012–2018 (Diabelkova, 2016).

Table 1: Results of measuring customer satisfaction in 2012 –2018 (%)

Postal service quality indicator	2012	2013	2014	2015	2016	2017	2018
Adequacy of fees - letters			63,3	55,9			
Adequacy of fees - packages	66,5	61,5	62,2	53,3	60,6	75,5	76,0
Location and availability of post offices	81,9	79,0	75,1	78,0	83,4	90,0	90,0
Providing product information	79,5	76,6	72,0	73,8	85,6	93,0	93,0
Range of hours for the public - in the morning	83,2	81,4				94,0	93,0
Range of hours for the public - afternoon	79,0	76,0	74,6	76,8	83,9	92,0	91,0
Complaints handling	65,6	61,2	-	64,3	70,2	84,0	77,0
Ensuring the collection of notified consignments	77,9	77,4	75,5	74,1	84,1	85,0	88,0
Waiting time at the compartment	56,0	55,0	67,8	64,4	66,6	75,0	75,0
Overall satisfaction	73,3	72,3	74,1	76,5	78,6	79,0	79,6

Source: Diabelkova, 2016

The customer satisfaction measurement is performed once a year on a sample of at least one thousand customers. 1 050 respondents were questioned in the study on a sample in 2018. The reasons for dissatisfaction are analysed and measures are taken to eliminate the causes of dissatisfaction (see web page of *Regulatory Authority for Electronic Communications and Postal Services*, www.teleoff.gov.sk).

The results of the measurement of transit times in national postal services shall be published on the website of the regulatory authority. An overview of the results of measuring customer satisfaction and selected quality indicators in 2011 - 2018 (expressed as a percentage) can be found in Table 2. The universal service provider shall submit to the regulatory authority, in accordance with the Universal Service Quality Requirements, a methodology for ascertaining data on customer satisfaction with the provision of universal service.

Table 2: Results of measuring customer satisfaction with the quality of universal service

Individual quality criteria	Year / measurement results in%							
	2011	2012	2013	2014	2015	2016	2017	2018
Adequacy of postal fees	65,0	66,5	61,5	62,8	54,6	60,6	75,5	76,0
Ensuring the security of postal items	79,9	80,2	76,8	X	X	X	X	X
Ease of use of products - List	86,7	88,7	86,4	X	X	84,4	93,0	96,0
Ease of use of products - Package	80,1	84,2	81,5	X	X	84,4	91,0	95,0
Ease of use of products - PP	77,5	84,9	83,2	X	X	84,4	92,0	95,0
Location and availability of post offices	81,9	81,9	79,0	75,1	78,0	83,4	90,0	90,0
Behavior of employees - behind the compartment	78,2	83,9	83,3	78,2	81,3	88,2	93,0	93,0
Behavior of employees - deliverers	83,6	86,6	87,2	79,6	82,0	90,3	95,0	95,0
Providing product information	78,2	79,5	76,6	72,0	73,8	85,6	93,0	93,0
Providing product information on the SP website	X	X	X	68,2	74,8	85,5	91,0	93,0
Range of hours for the public - morning	83,6	83,2	81,4	74,6	76,8	83,9	94,0	93,0
Range of hours for the public - afternoon	75,8	79,0	76,0	74,6	76,8	83,9	92,0	91,0
Time and frequency of mailbox retrieval	73,9	76,9	74,0	X	X	X	X	X
Complaints handling	81,5	65,6	61,2	50,6	64,3	70,2	84,0	77,0
Ensuring the collection of notified consignments	74,7	77,9	77,4	75,5	74,1	84,1	85,0	88,0
Waiting time when picking up the shipment	64,4	56,0	55,0	67,8	64,4	66,6	75,0	75,0
Overall satisfaction	76,0	73,3	72,3	74,1	76,5	78,6	79,0	79,6

From the Table 2, is it clear that the goal of the postal operator, in the form of constantly achieving a higher quality of services provided in the selected category (universal postal service), has been increasingly fulfilled over the years.

However, such a goal is presented in the works of authors around the world in various areas of research. Giacomel, Cardoso and Santo (2019), deals with a proposal for measuring customer satisfaction in e-commerce, where these authors discover a "gap in the methodology capable of measuring customer satisfaction" in online shopping. They filled this gap with a design using elements of the SERVQUAL and SERVPERF methods, the Brazilian Quali Quanti model and national barometers for measuring service quality - Swedish, American and European.

3. Material and methodology

The aim of the paper is to diagnose customer satisfaction with postal products in selected areas in the Slovak Republic through the chosen methodology that the researchers consider to be effective and suitable for its application. Subsequently, in response to the stated diagnostic statements, to design framework therapeutic procedures in the environment of the postal company, in order to achieve the fulfilment of customer requirements and to achieve and maintain their loyalty.

The scientific methods used in this paper are clearly based on the application of analytical (including multidimensional analysis), synthetic and comparative methods that also represent recommended methods in the application of diagnostics and subsequently therapeutic methods in determining satisfaction with the quality of postal services. Separately, but at the same time compatible, the use of another method, the so-called Kano model is presented. Through this model, the diversity of customer requirements is emphasized according to their importance for achieving their satisfaction. It is based on the existence of two key dimensions of quality, which are: "the degree of fulfilment of customer requirements" and "the degree of customer satisfaction".

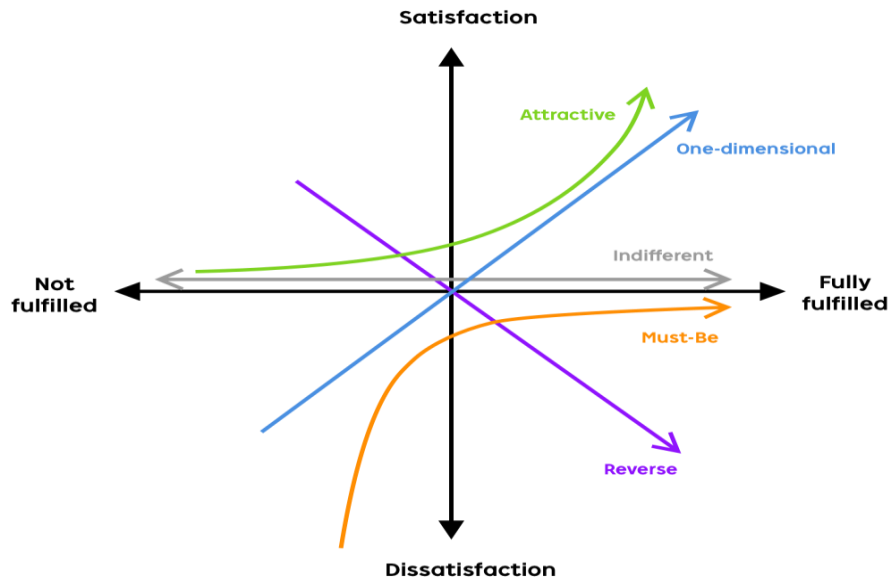


Fig. 1. Kano model of customer satisfaction

Source: Krnacova, P., Lesnikova, P. 2012

The Kano model (see Fig. 1) expresses the relationship between the degree of customer satisfaction and the attributes of quality through 5 categories of perceived quality by customers. These are: attractive, one-dimensional, mandatory, insignificant and contradictory attributes of products that create quality. In line with the product life cycle, these categories of perceived quality change. They range from the category of insignificant, through attractive, one-dimensional to mandatory quality attributes. This means that while at this point the customer may find a certain quality attribute attractive, it may be considered mandatory in the future. However, these rules may not apply to all products. It is more important to realize that the perception of individual categories changes over time. At the same time, attractive quality attributes clearly lead to customer satisfaction (Chen et al. 2010).

Based on the information above, the individual categories of product or service requirements that affect customer satisfaction can be characterized as follows:

- attractive requirements (A - attractive) - have a clear impact on customer satisfaction because these requirements the customer does not expect. At the same time, it logically follows that failure to meet these requirements will not lead to customer dissatisfaction;
- one-dimensional requirements (O - one-dimensional) - represent those quality attributes, the fulfilment of which leads to customer satisfaction and in case of non-fulfilment, the customer is dissatisfied. There is a direct linear relationship between meeting these requirements and customer satisfaction, e.g. the higher the compliance rate, the more satisfied the customer;
- mandatory requirements (M - must-be) - the customer takes them for granted, he automatically expects them. They can also be described as basic, which means that their fulfilment will be reflected in customer satisfaction, and at the same time, if they are not met, the customer will be very dissatisfied; as the customer takes these requirements for granted, he does not deal with them if they are met. The identification of the basic requirements is important mainly because the customer is immediately aware of their absence that will ultimately result in his/her maximum dissatisfaction;

- insignificant requirements (I - indifferent) - do not affect satisfaction in any way, customer dissatisfaction included; these are attributes that are not critical to the customer and he does not care whether they are met or not;
- conflicting requirements (R - reverse) - represent such quality attributes for which it is true that the higher the rate of their fulfilment, the more significantly the customer dissatisfaction grows (Chen et al. 2010).

In addition to the above 5 categories of product or service requirements, when compiling the Kano model, we may also encounter another category – ambiguous requirements (Q – questionable). A request included in this category expresses a problematic result as it usually indicates a certain problem, which is related either to incorrectly formulated questions or to the respondent's misunderstanding of the question. To include the request in this category, it would mean that the respondent answered in the same way for positive and negative. Under normal circumstances, no requirement should be assessed in this category.

The Kano model represents a diagnostic approach that is relatively popular in important professional publications and its use brings the desired results of research in various fields. Bi, JW. Liu, Y., Fan, ZP and Cambria, E. (2019) applied the Kano model in modeling customer satisfaction from online reviews using a neural network model. The result of this study was, among other things, a very accurate identification of the dimensions of customer satisfaction. Similarly, Madzík et al. (2019) applied the Kano model to better understanding of customer requirements in higher education. "Practice orientation" and "quality resources" have proven to be the most stable student requirements, while "quality staff" is the least stable.

The most direct requirement, a requirement that has the same effect on satisfaction and dissatisfaction, is an "innovation orientation". "Research orientation" is one of the attractive requirements. An interesting outcome is that "ethical orientation" shows weak relationships between positive and negative reactions of students. It is also surprising that "skills orientation" has proved to be too general a requirement and could be classified as one in which students show indifference (Madzik et al. 2019). Al-Dulaimi (2017) also contributed to this area of research, presenting a comparison of education, educational services and student satisfaction between selected countries with the rather surprising differences that emerged from the research results. Zhang (2019), who also used of the Kano model, conducted research on improving the quality of services of logistics companies, including postal companies that are the subject of research in our paper. The research presented by Zhang (2019) pointed to the so-called necessary quality of logistics services that includes the so-called first mile (delivery), timeliness and method of delivery, security of the shipment and convenient method of payment for these services. Another methodology that was used to address the issue is primary research. The research activities that led to the specific identification of the requirements defined in the Kano model in selected regions of Slovakia were based on primary quantitative research, where it was necessary to proceed with the correct definition of the sample of respondents in order to achieve the required reliability of research results. This reliability of the results and the possibility of other solutions affects the sample size. The sample size from 100 to 200 respondents can be considered an enough degree of accuracy, regardless of the size of the basic sample examined. Such many respondents satisfy the so-called normal probability distribution. We used a statistical method to calculate the sample size. The sample size is influenced by three basic factors (Foret, M., Stávková, J. 2003):

- Reliability of the estimate ($z_{1-\alpha} / 2$) - usually ranges from 95% to 99%. The higher the reliability of the estimate is required, the larger the sample size. Its tabular critical value of the normalized distribution is inserted into the formula.
- Maximum allowable error range (H) - the range is usually in the range of ± 0.02 to ± 0.1 . The smaller the error is tolerated, the larger the selection must be made.
- Variability of the base file or proportion of the character (p) - if this value is not specified, the value 0.5 will be used.

Sample sizes were calculated using the following formula (Foret and Stavkova, 2003):

$$n = \frac{z_{1-\alpha/2}^2 * \sigma^2}{H^2}$$

$$\sigma = \sqrt{p * q} = \sqrt{p * (1 - p)}$$

where the calculated variables represent:

n – minimum number of respondents;

z_{1-α/2} - critical value;

σ² – variance calculated from the standard deviation;

p – variability of the basic set,

H – maximum permissible error range.

For the calculation of the sample of respondents, a 99% reliability of the estimate was determined, the critical value of which determined from the tables is 2.58; maximum permissible error range ± 0,1 and character ratio 0,5. Calculated values that were determined above were filled into the formula, so the sample for the district of Poprad was calculated as follows:

$$\sigma = \sqrt{0,5 * (1 - 0,5)} = \sqrt{0,25} = 0,5$$

$$n = \frac{2,58^2 * 0,5^2}{0,10^2} = \frac{1,6641}{0,01} = 166,41 = 167$$

The calculations show that the minimum sample size is 167 respondents for the district of Poprad. A similar recalculation was performed for the districts of Dolný Kubín (205 respondents), Martin (206 respondents) and Považská Bystrica (340 respondents) where this research activity also took place.

4. Results

4.1 Requirements categorization for postal services of Slovak Post in selected regions

Based on the evaluation of individual requirements in the Kano model, the answers of the respondents were divided into questions formulated positively and negatively into the relevant categories set by the Kano model. The meaning of individual categories is: "M" - mandatory requirement; "O" - one-dimensional request; "A" - an attractive requirement; "I" - insignificant requirement; "Q" - ambiguous requirement and "R" - conflicting requirement. The rule that M > O > A > I was applied in the evaluation of the requirements.

The summarized results of marketing research in individual districts are shown in Table 3.

Table 3: Customer requirements for postal services by importance in the listed regions.

Region	A	Rel. ab.	O	Rel. ab.	M	Rel. ab.	I	Rel. ab.
Dolny Kubin	Opening hours in the afternoon	24,4	Waiting time at the compartment (< 15 min)	25,8	Reasonable charges for postal services	31,1	Availability and distribution of post offices and mailboxes	35,1
	Opening hours during weekend	28,4					Use of self-service facilities at the post office	32,9
	Letters and parcels processing 24/7	32,9					Payment by credit card	34,2
							Use of self-service facilities in the shopping center or publicly available place	34,7

Martin	Opening hours during afternoon (after 3pm)	28,6	Availability and distribution of post offices and mailboxes	39,1	Waiting time at the compartment (<12 min)	64,3	Reasonable fees for services provided	34,3
	Opening hours during weekend	52,0	Employees behavior	28,6	Security of shipment delivery	40,5	Informativeness of provides services	32,4
					Handling of complaints and grievances	51,4		
Poprad	Opening hours during weekend	46,63	Security of shipment delivery	69,10	Postal service fees	58,43	Availability of post offices and branch mailboxes	41,6
							Parking spots nearby	37,1
	Opening hours during afternoon (after 3pm)	43,26	Waiting time at the compartment	65,17	Willingness and helpfulness of employees.	53,93	Informativeness of provides services	38,8
							Electronic services offer	33,2
							Post office interior	46,1
							Identification of employees by logo	38,2
Povazska Bystrica	Opening hours during afternoon	42,90	Security of shipment delivery	64,6	Waiting time at the compartment (<12 min.)	47,8	Reasonable fees for services provided	40,9
							Parking spots nearby	37,4
	Opening hours during weekend	36,23	Willingness and helpfulness of employees.	53,3			Identification of employees by logo	34,5
							Informativeness of provides services	34,5
	Electronic services portfolio	40,00	Handling of complaints and grievances	82,6			Availability and distribution of post offices	48,4
							Reserved seating area	31,0

Source: own processing

From the Table 3 that determines the order of requests for postal services according to their importance in the region of Dolny Kubin, it is clear that the most important for respondents is the attractive requirement opening hours during afternoon, followed by opening hours during the weekend and sending letters and parcels 24/7. In the Martin region, an attractive requirement for respondents is the post office opening hours during afternoon, specifically after 3 pm and the opening hours during the weekend. In the Poprad region, respondents identified “reasonable postal service fees” as the most important requirement and “identification of employees by logo” as the least important. In the Povazska Bystrica region, the most important attractive requirement for respondents is the opening hours during afternoon and during the weekend and they are also interested in the portfolio of electronic services.

4.2 Diagnosis of the obtained examination results by categorization

In general, when conducting primary quantitative research, summarizing the whole data set obtained gives us a global view of the subject of research, in our case the requirements for the quality of postal services, but does not answer the question of respondent’s expectations that should be met. The diagnostic procedure that is chosen in this part of the presented article consists in categorizing the obtained data using multidimensional analysis. The second level categorization represents the filtering of answers to research questions depending on the gender of the respondents, i. j. for men (m) and for women (w) who were in the position of respondents. The presentation of this diagnostic procedure was performed on data obtained by primary research in the district of Poprad. (Tab. 4). The diagnostic procedure chosen in this part of the presented article consists in categorizing the obtained data using multidimensional analysis. The second level categorization represents the filtering of answers to research questions depending on the gender of the respondents, for men (m) and for women (w). The presentation of this diagnostic procedure was performed on data obtained by primary research in the Poprad region (Tab. 4).

Table 4: Categorization of requirements for the quality of postal services according by the gender of the respondents

Requirements for postal services in the Poprad region	Requirements category												Summary			Divided by gender	
	M		O		A		I		Q		R		m	w	total	m	w
	m	w	m	w	m	w	m	w	m	w	m	w					
Adequacy of postal fees	32	36	15	30	3	6	31	24	0	0	1	0	82	96	178	M	M
Opening hours - afternoon	9	13	19	31	34	28	20	24	0	0	0	0	82	96	178	A	O
Opening hours - weekend	10	12	15	17	41	34	16	33	0	0	0	0	82	96	178	A	A
Waiting time at the compartment	7	13	39	44	20	25	16	13	0	0	0	1	82	96	178	O	O
Availability of post offices and mailboxes	15	29	32	18	5	8	30	41	0	0	0	0	82	96	178	O	I
Post office interior	8	11	16	24	16	10	42	51	0	0	0	0	82	96	178	I	I
Parking spots nearby	9	7	39	20	14	21	20	48	0	0	0	0	82	96	178	O	I
Willingness and helpfulness of employees	30	39	27	37	9	9	16	11	0	0	0	0	82	96	178	M	M
Identification of employees by logo	5	6	14	19	8	4	55	67	0	0	0	0	82	96	178	I	I
Informativeness of provides services	20	37	9	11	7	6	46	42	0	0	0	0	82	96	178	I	I
Security of shipment delivery	10	16	52	54	13	15	6	11	1	0	0	0	82	96	178	O	O
Handling of complaints and grievances	27	47	30	17	5	10	19	22	0	0	1	0	82	96	178	O	M
Electronic services offer	15	10	7	11	4	7	56	68	0	0	0	0	82	96	178	I	I

Source: Diabelkova, M. 2016

Diagnostic statement number 1: Gender quality requirements for postal services differ in four categories. Requirement “Opening hours of the Slovak Post during afternoon "is included in the men's segment as attractive but women described it as one-dimensional. In the case of the requirements "Availability of post offices and post boxes" and "Parking spots nearby”, men classified them as one-dimensional requirements and women as insignificant. Men stated "Handling of complaints and grievances" as one-dimensional requirement and women in mandatory requirements category.

In another two-level categorization, the relationship between the requirements for the quality of postal services and the residence of the respondents was examined, residing in the city of Poprad (PP) or outside the city of Poprad (outside PP) (Table 5).

Table 5: Categorization of requirements for the quality of postal services according to the residence of respondents

Requirements for postal services	Requirements category												Summary			Result by residence	
	M		O		A		I		Q		R		PP	Outside PP	□	PP	Outside PP
	PP	Outside PP	PP	Outside PP	PP	Outside PP	PP	Outside PP	PP	Outside PP	PP	Outside PP					
Adequacy of postal fees	32	36	30	15	4	5	25	30	0	0	0	1	91	87	178	M	M
Opening hours during afternoon	12	10	27	23	30	32	22	22	0	0	0	0	91	87	178	A	A
Opening hours during weekends	11	11	15	17	45	30	20	29	0	0	0	0	91	87	178	A	A
Waiting time at the compartment	13	7	43	40	21	24	13	16	0	0	1	0	91	87	178	O	O
Availability of post offices and mailboxes	24	20	18	32	4	9	45	26	0	0	0	0	91	87	178	I	O
Post office interior	10	9	19	21	10	16	52	41	0	0	0	0	91	87	178	I	I
Parking spots nearby	12	4	35	24	18	17	26	42	0	0	0	0	91	87	178	O	I
Willingness and helpfulness of employees	41	28	33	31	10	8	7	20	0	0	0	0	91	87	178	M	O
Identification of employees by logo	7	4	15	18	6	6	63	59	0	0	0	0	91	87	178	I	I
Informativeness of provides services	20	37	11	9	5	8	55	33	0	0	0	0	91	87	178	I	M
Security of shipment delivery	10	16	56	50	17	11	7	10	1	0	0	0	91	87	178	O	O
Handling of complaints and grievances	45	29	27	20	10	5	9	32	0	0	0	1	91	87	178	M	I
Electronic services offer	12	13	10	8	6	5	63	61	0	0	0	0	91	87	178	I	I

Source: Diabelkova, M. 2016

Diagnostic statement number 2: Respondents' requirements differ in five categories of postal service quality requirements. "Availability of post offices and post boxes" was determined by respondents who live outside the city of Poprad as a one-dimensional requirement but they who live in the city marked it as insignificant. “Parking spots nearby” was identified by respondents from the city of Poprad as a one-dimensional requirement, respondents living outside the city considered it as insignificant. "The willingness and helpfulness of employees” respondents living in the city of Poprad marked as mandatory but respondents living outside the city marked it as a one-dimensional requirement. "Informativeness of provides services" respondents living in the city identified it as insignificant but respondents whose residence is outside the city of Poprad marked this requirement as mandatory. "Handling of complaints and grievances" was identified by respondents from the city as a mandatory requirement but respondents living outside the city identified it as insignificant.

Subsequently, the relationship of individual requirements for the quality of postal services with the age categories of respondents was diagnosed through a two-level categorization. The age categories of the respondents were divided into five groups (Table 6). Evaluating this research, we know the sample is not properly stratified, so the same number of respondents was not reached in the individual segments. Despite this fact, the explanation of the research results is considered adequate.

Table 6: Categorization of requirements for the quality of postal services according to the age of respondents

Requirements category	Age	Requirements for postal services												
		Adequacy of postal fees	Opening hours during afternoon	Opening hours during weekend	Waiting time at the compartment	Availability of post offices and mailboxes	Post office interior	Parking spots nearby	Willingness and helpfulness of employees	Identification of employees by logo	Informativeness of provides services	Security of shipment delivery	Handling of complaints and grievances	Electronic services offer
M	18 - 29	17	8	3	5	19	2	2	11	0	13	6	20	13
	30 - 39	11	4	5	4	10	3	3	14	2	16	7	14	6
	40 - 49	10	5	7	5	6	3	4	16	3	11	3	17	4
	50 - 59	14	2	4	4	3	2	4	10	2	9	6	7	2
	60 and more	16	3	3	2	6	9	3	18	4	8	4	16	0
O	18 - 29	6	12	10	16	8	4	13	14	2	3	22	5	10
	30 - 39	10	11	7	18	11	6	14	11	2	5	20	11	5
	40 - 49	11	11	5	15	14	11	13	16	6	5	22	14	3
	50 - 59	8	8	6	13	10	6	9	11	9	2	15	9	0
	60 and more	10	8	4	21	7	13	10	12	14	5	27	8	0
A	18 - 29	1	12	18	11	2	4	11	3	0	3	6	2	4
	30 - 39	3	13	18	6	1	4	8	5	0	2	5	3	3
	40 - 49	2	15	18	15	4	5	6	2	3	2	9	2	3
	50 - 59	1	12	12	4	2	5	4	3	3	4	5	3	1
	60 and more	2	10	9	9	4	8	6	5	6	2	3	5	0
I	18 - 29	12	4	5	4	7	26	10	8	34	17	2	9	9
	30 - 39	10	6	4	6	12	21	9	4	30	11	2	6	20
	40 - 49	18	10	11	6	17	22	18	7	29	23	6	8	31
	50 - 59	6	7	7	8	14	16	12	5	15	14	3	10	26
	60 and more	9	17	22	5	21	8	19	3	14	23	4	8	38
R	18 - 29	0	0	0	0	0	0	0	0	0	0	0	0	0
	30 - 39	0	0	0	0	0	0	0	0	0	0	0	0	0
	40 - 49	0	0	0	0	0	0	0	0	0	0	0	0	0
	50 - 59	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 and more	1	0	0	1	0	0	0	0	0	0	0	1	0
Q	18 - 29	0	0	0	0	0	0	0	0	0	0	0	0	0
	30 - 39	0	0	0	0	0	0	0	0	0	0	0	0	0
	40 - 49	0	0	0	0	0	0	0	0	0	0	1	0	0
	50 - 59	0	0	0	0	0	0	0	0	0	0	0	0	0
	60 and more	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary	18 - 29	36	36	36	36	36	36	36	36	36	36	36	36	36
	30 - 39	34	34	34	34	34	34	34	34	34	34	34	34	34
	40 - 49	41	41	41	41	41	41	41	41	41	41	41	41	41
	50 - 59	29	29	29	29	29	29	29	29	29	29	29	29	29
	60 and more	38	38	38	38	38	38	38	38	38	38	38	38	38
Category	18 - 29	M	OA	A	O	M	I	O	O	I	I	O	M	M
	30 - 39	OI	A	A	O	I	I	O	M	I	M	O	M	I
	40 - 49	I	A	A	OA	I	I	I	MO	I	I	O	M	I
	50 - 59	M	A	A	O	I	I	I	O	I	I	O	I	I
	60 and more	M	I	I	O	I	O	I	M	OI	I	O	M	I

Source: Diabelková, M. 2016.

Diagnostic statement number 3: There was a large difference in the requirements of respondents in different age categories. Only in the requirement “Security of shipment delivery”, respondents of all ages did agree that it is a one-dimensional requirement. “Opening hours during weekend” was marked by the age group over 60 as an insignificant requirement but other age groups marked it as attractive. The age category from 18 to 29 years stated the requirement “Availability of post offices and mailboxes” as mandatory but all other age categories identified it as insignificant. “Post office interior” was described by the first four groups as insignificant but the category of 60 years and older respondents considers it as one-dimensional. The age category from 30 to 39 years determined “Informativeness of provides services” as a mandatory requirement but the other groups classify it as an insignificant requirement. All categories clearly consider “Security of shipment delivery” as a mandatory requirement but in 50-59 years old category, respondents have identified it as irrelevant. In the categorization of requirements, we have included “Electronic services offer” between the insignificant requirements but the age group 18-29 years has determined this requirement as mandatory.

4.3 Therapeutic procedures based on the obtained research results

If diagnostic procedures determine the extent to which the characteristics of the postal service affect their perceived quality, how individual satisfaction (M), one-dimensional (O) and attractive requirements (A) for the quality of postal services affect customer satisfaction and what is the evaluation of postal services from customers' point of view compared to the competition, the postal company is expected to develop a portfolio of procedures to ensure customer satisfaction. The highest priority for ensuring the satisfaction of the postal company's customers is those customer requirements for the postal service that the customer considers to be the most important. However, it is also necessary to pay attention to those requirements that show insignificance (I), ambiguity (Q) and even contradiction (R).

Within the framework of therapeutic procedures, it is possible to recommend the examination of several dimensions that could contribute to the clarification and, in a way, to the influence of the quality of postal services. These are the following dimensions:

- adjustment and implementation of innovative changes in the environment that affect the mail customer - the acceptability of the environment in providing postal services, including own premises, surroundings, equipment (including self-service boxes, applications, etc.), as well as behaviour of employees during the first contact;
- increasing the reliability of the provided postal services - increasing the ability to provide the required postal service with all the quality features that the operator can provide;
- increasing the sensitivity of the approach to the customer - increasing the willingness and flexibility with which the first contact employee will be able to solve customer problems;
- increasing the qualification of postal employees by achieving competencies for the implementation of relevant processes in the provision of services - professional knowledge, courtesy, trustworthiness of employees;
- empathy with the individual wishes of the customer - readiness and sensitivity to the individual wishes of the customer, which can be fulfilled from the point of view of technology, law and security;
- periodic examination of the causes of "incomplete quality" of the provision of postal services by defining the so-called "5 gaps" where the following differences are identified:
 - difference 1: between customer expectations and the understanding of these expectations by the management of the postal company;
 - difference 2: between management of the postal company and understanding of customer expectations and their enforcement in the specifics of postal services;
 - difference 3: between the specifications for the provision of the postal service and the actual performance of the employees of the postal company (insufficient qualification of employees, incorrectly implemented internal quality management system, problems in enforcing teamwork, etc.);

- difference 4: between the declared and actual provision of the postal service;
- difference 5: between the customer's expectations and the customer's experience with the provision of postal services (comparison of the expected and desired service with reality).

Discussion and conclusion

The professional community has taken the idea that if there is nothing to discuss in a issue, there is no reason to write such a contribution. Therefore, if we understand customer satisfaction, which we dealt with in the article, as the result of a complex psychological comparison process during which the customer compares his/her own experience after providing the service, there are many questions to discuss on this issue. First of all, it is about understanding the great complexity of personal feelings (pleasure or disappointment) that result from his/her personal comparison of the actual performance in the provision of postal services with the expected one. In case of dissatisfaction and failure to meet expectations, competing postal companies get a chance. So, can we cover all the psychological aspects of customer decision-making through the most used methods of measuring customer satisfaction and knowing their requirements so far? It could also be a stimulus to discuss how it is possible and explainable that there are certain differences between the requirements for the quality of postal services in individual regions of Slovakia and how this fact should be reflected in the strategic decision-making of the postal company.

Focusing on customer satisfaction represents the strategy of the postal company in the long term and in investing in a wide range of activities aimed at current and future customers. So, is the postal company's strategy for finding ways to increase customer satisfaction clearly defined? If so, how is it necessary to innovate for the next period, with the dominance of the use of information and communication technologies? What form should build relationships with customers in the so-called the digital age?

The whole spectrum of topics for discussion, in connection with the topic of the paper, can be presented in connection with the transfer of a "satisfied customer" to the position of a "loyal customer". It is generally true that loyalty, often referred to as customer loyalty, is the result of customer satisfaction. For the customer to be loyal, the postal company's product strategy must be reworked as precisely as possible, because the customer must be firstly satisfied with the product that the postal company creates.

The issue of certain differences that emerged as the results of research activity within the examined regions also appears to be a well-founded area that provokes discussion. For example, the requirement "Availability of post offices and post boxes" was determined by respondents who live outside the city of Poprad as one-dimensional but they who live in the city marked it as insignificant requirement. "Parking spots nearby" respondents from the city of Poprad identified as a one-dimensional requirement, respondents living outside the city considered it as insignificant. "The willingness and helpfulness of employees" respondents living in the city marked as mandatory and respondents living outside the city marked it as a one-dimensional requirement. "Informativeness of provides services" respondents living in the city identified as insignificant but respondents whose residence is outside the city of Poprad marked this requirement as mandatory. "Handling of complaints and grievances" was identified by respondents from the city as a mandatory requirement but respondents living outside the city identified it as insignificant. These diagnostic statements could then be examined in more detail, as each region has relatively significant specifics in the area of district population and thus is likely to differ in identifying their requirements for the quality of postal services. This phenomenon is still widely studied around the world today (Rosillo-Diaz, E et al. (2020)). The results of their research showed a significant impact of cultural dimensions on the quality of products and services, measured by identifying several types of risk associated with this type of trade.

Loyal customers are very interesting for the postal company, because it is they who will spread the information about the quality of the provided postal service further, and thus the postal company can gain more customers

and build a very positive image in the postal services market. In a postal company, it is not enough just to understand the importance of customer satisfaction, respectively consequences of their dissatisfaction, but appropriate measures must also be taken. By this we mean the quantitative and qualitative survey and measurement of customer satisfaction in order to have adequate data and information. Without effective customer satisfaction assessment and evaluation, it is unlikely that the management of a postal company will make and implement decisions that would make it possible to retain the customer more effectively.

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