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Analysis of Customer Satisfaction with the Quality of Energy Market Services in Poland

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Abstract: Environmental protection, sustainable development, quality, and value have become the goals of societal development in the twenty-first century. As the core of environmental protection, the new energy sector has become a widespread trend. In this article, we will look at how well and how satisfied customers are with the energy market's service. A literature review of energy sector quality and value issues was conducted. The survey was conducted in 2021 in Poland with over 2404 respondents by the CAWI survey. Additionally, it was given a qualitative analysis. In the next step, we applied selected quality management methods and tools. The results of the study clearly show that the respondents expect energy companies to become more involved in building customer–enterprise relationships. Research shows that employees of energy companies should be trained more often in the field of customer service, especially in terms of an individual approach to the customer, which has value for the customer. The authors propose ways to build an arrow diagram to increase customer satisfaction levels. A model of elements determining quality as well as value for clients in the energy market was built.

Keywords: quality; value; CIT method; Pareto–Lorenz diagram; 5WHY method; 5W1H method; arrow quality management tool; a model; VUCA world; smart consumer; prosumer

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1. Introduction

Climate change has long been one of the most difficult environmental challenges to address in recent years. Due to high volumes of greenhouse gas emissions, climate change problems, such as global warming, have posed a challenge for human populations to achieve sustainable development [1,2]. In the corporate world, the customer is seen as the king [3]. The tagline "Right or wrong, the customer is always right" was coined by Marshall, a well-known and pioneering retailer. This phrase denotes a high level of client satisfaction [4–6]. COVID-19, which is now in progress, has had an impact on international trade and the global energy market [7]. A holistic approach to people and their needs is required in today's socio-economic reality, particularly in one of the European Union countries where dynamic processes are happening and are driven primarily by expanding globalization and advancing climate change [8]. According to Micheletti [9–11], views are changing and people are becoming more sensitive to social and environmental issues, and these developments are reflected in ethical consumption. This is the result of rising consumer awareness, as well as decisions based on values, virtue, and ethics. Entrepreneurs recognize that because their products and features are so comparable to those of their customers, they must seek a competitive advantage by enhancing quality in other areas of their business. An organization's competitiveness assures its long-term success in the commercial sector. The competitive advantage of a company helps to make and pass on value to customers [12,13].

Today's customers are exceedingly demanding and quality-conscious; they know exactly what they want from a product as well as from the energy market services. Quality is a dynamic condition related to product and customer satisfaction that enables customers to form long-term mutually beneficial connections with the organization via the application of a special force [14]. High quality is viewed as a key competitive advantage and a source of added value for both the company and its consumers [15,16]. There are three types of perspectives on the relationship between quality and value [17–21]:

1. The product's use-value is the same as its quality.
2. Quality is defined as a product's ability to satisfy a specific need, i.e., it is a carrier of utility value.
3. Quality is similar to management efficiency, which is measured by the ratio of use-value to the cost of making and using the thing you make and use.

The customer is the most important person in the company, even when they write or call; they are not dependent on the company, the company is dependent on them. The client cannot be won because they will leave the competition; they do not interfere with a companies work but are its meaning and purpose; they would like to solve their problems; the company's task is to solve them for the benefit of both the client and the company [22,23]. There are studies that examine quality and value but from an awareness perspective [24–28], a trust perspective [29–32], or a sustainability perspective [33–35]. This case study aims at filling this research gap by examining what value and quality mean for the consumers of the energy market and what factors influence the quality and value of the energy market client. Household clients will become respondents (2404 respondents have taken part in the survey). A smart consumer (smartsumer) creates a new, as yet unknown category of consumer. A smartsumer does not have to be alone anymore to analyze source data about their consumption or to be aware of the impact of their activities on the environment. There is also no need for them to make any adjustments to their own self-production and own consumption for the needs of the system [24,25]. It is enough to be aware of the opportunities guaranteed by the broadly understood sector of public services. Actions: a smart consumer focuses on applications in which they manage specific ones with the best profile. Their activities are not the result of a passing trend; they are activities that were created by the surrounding reality and which became part of their everyday life routine, which they do not notice [26,27]. A high level of consumer awareness is not required for smart consumer awareness, which is analogous to the recipient's knowledge in the earlier stages of evolution (e.g., prosumer). However, their "intelligence" is expressed in something else—the ability to connect tools using artificial intelligence with their own expectations and goals in the field of consumption. However, the creation of a smart sentence is a demanding evolutionary process that requires the occurrence of certain circumstances. These include, but are not limited to, a friendly investment climate, encouraging businesses to come up with new ideas, coherent information campaigns that teach people everything they need to know, and the development of IT systems that help people make decisions. In the context of external and internal variables influencing the organization, Table 1 shows the elements that are responsible for the rise in quality needs.

Currently, the ability to gain, for example, a client, is no longer the most important aspect of an enterprise's activities; it is also the ability to keep that client by establishing a long-term relationship with them and providing them with the value he or she desires [28]. The following research questions were posed in the publication:

- What factors determine the quality of energy services?
- What factors determine the value of energy services?

The following hypothesis was posed in the publication:

Hypothesis 1 (H1). *There is a link between the energy company's client focus and the high quality of its products.*

Table 1. The elements that are responsible for the rise in quality needs.

Reason	Characteristic
Increase in customer expectations	Economic education Change of service standards Subjective quality context Evolution of socio-cultural needs High degree of safety of use Increased reliability, ease of repair and maintenance Low price of products Full information about the product
Trends in the economy	Increasing complexity Improving operational efficiency Allowing free movement of capital and goods Reducing waste and overproduction Reducing the time it takes to introduce new ideas
Legal regulations	Restrictions on safety Environmental restrictions The civil liability for quality act guidelines/standards Corporate social responsibility assumptions The idea of long-term development Processes of inventions are becoming more global
Key goals of the enterprise	Products of today Excellent quality and dependability A high level of market acceptance of products Strong profit margins Risk mitigation The company's good reputation A management strategy based on a system Costs that are not essential are eliminated
Competition capital	A technological race Increasing competition capital pressure Shifts in market structure Globalization of marketing processes Shorter product and service life cycles

Source: own study.

In this paper, we will examine how well and how satisfied consumers are with the service provided by the energy market. A review of the literature on energy sector quality and value concerns was carried out. The CAWI survey was carried out in Poland in 2021 and had about 2404 responses. It was also subjected to a qualitative examination. The Critical Incident Technique approach was used to evaluate the quality of energy services in the following stage. Customers' discontent with the quality of energy services was investigated using the Pareto–Lorenz diagram. Simultaneously, small-step procedures—5 WHY and 5W1H—were utilized to examine why staff do not comprehend the unique wants of clients. According to the study's findings, respondents anticipate energy firms will become more active in developing customer–enterprise partnerships. According to research, energy company staff should be taught more often in the area of customer service, particularly in terms of a personalized approach to the client that adds value to the consumer. The writers suggest techniques to improve customer happiness by creating an arrow graphic. In the energy market, a model of components defining quality and value for customers was developed.

2. Literature Review

VUCA launched a brutal assault on the corporate and economic world in the twenty-first century. As a result, one of the most significant consequences is managers' inability to define and comprehend their surroundings (not only in the power sector) [29]. Each

organization must deal with its own unique and personalized VUCA environment, which is common in the power industry. Unfortunately, some organizations are unaware of its existence, and as a result, they fail to recognize signals from the outside world while continuing to follow established patterns. The VUCA strategy necessitates organizations to adjust their competency models and concentrate on their strengths [30]. Many new energy companies have successfully listed on the market in recent years, which was well-received by society. It is possible to assert that new energy stocks are a significant expression of social sustainability value [31,32], both in terms of technology and the quality of services provided. Poland's energy industry is continually evolving. Changes and modifications in the direction of a competitive electricity market are based on the premise that competition among energy suppliers is the most effective way to cut energy prices and increase customer service quality. Furthermore, low-cost energy will allow us to compete with foreign businesses and raise our citizens' living standards [33,34]. The ultimate recipients are categorized into two groups: the homes that are purchasing energy for community usage and the second group of recipients is entities other than homes that purchase energy from self-employed enterprises to meet their electricity demands [35,36]. Local energy trading businesses in Poland perform the functions of distribution network operators [37,38].

Currently, businesses that place a premium on quality should heed Drucker's advice: "Yesterday's great achievement must become today's minimum". While yesterday's excellence must become today's daily". Excellent businesses care about their employees and believe in the power of what they can do [39,40]. They are concerned about the quality of their services. They adopt realistic improvements, and they understand that success necessitates the participation of all employees [41,42]. According to Taguchi, quality is what is missing, which means that everyone loses [43,44]. The current and widely recognized definition of quality focuses on client-centric concepts, with quality defined as meeting or, preferably, exceeding customer needs and expectations. To meet present and future societal needs, societal drives such as sustainability and digitization necessitate a quality perspective that includes a greater variety of stakeholders. The concept of quality over time was given several interpretations, for example, in the eyes of customers [45]. Conformance and the importance of eliminating variation in manufacturing processes were significant elements in defining quality in the early days of quality management. Shewhart [46] recognized the subjective aspect of quality, while Juran and Godfrey [47] emphasized this with a customer-focused definition of quality as "fitness for use". Deming [48] extended this approach, specifically addressing the consumer when he stated that "quality should be oriented toward the needs of the customer, both present and future". Deming and Juran pioneered a view of quality as a requirement of customers, which was later expanded to the concept of service quality [49,50]. Recent quality management research that incorporates sustainability perspectives emphasizes the necessity for a broader understanding of customer roles as well as other stakeholder viewpoints [51,52].

Suprapto et al. [53] discovered in earlier research that shop image has a favorable and significant impact on pricing consciousness, which in turn has an impact on repurchase intention. Furthermore, prior research by Beneke et al. [54] discovered that product quality and related price have a positive and significant impact on customers' willingness to buy the goods, owing to the fact that the product purchased offers the value that consumers desire. According to previous research conducted by Bu et al. [55], product quality has a positive and significant impact on brand attitudes. Finally, according to Mostafa and Elseidi [56], price has a positive and significant effect on how people feel about a brand. Brand consciousness has a favorable and significant impact on brand sentiments. According to Yu et al. [57], brand image has a favorable and considerable impact on brand attitude [58]. Furthermore, Mowen and Minor [59] defined product quality as a comprehensive review process involving customers in order to improve a product's or service's performance. Product quality, according to Kato and Tsuda [60], can be judged in terms of performance, features, appropriateness, reliability, durability, serviceability, beauty, and consumer per-

ception of quality. Consumer attitudes had a positive and significant impact on repurchase intention, according to Jung et al. [58]. There is growing recognition that electricity is a commodity, and that what we call "quality energy" is simply a definition of the offered items' features and their specified value in use. There are several terminologies that can be used to describe how electricity is treated in terms of energy quality. Electric energy is a commodity that is sold to a prospective consumer in order for them to obtain a decent product in a form that meets their needs. It has a set of unique features that, if they are not good enough, could hurt the user's things or even their health [61,62]. Although rapid advancements in all fields have raised society's living standards throughout time, they have also made customers, who are compelled to pick between a variety of services and product options, the main focus of organizational activity. Today, establishing a long-term marketing relationship with customers who are growing increasingly smart and have preferences as a result of their experiences is becoming increasingly difficult for businesses. Other than service quality, which is related to what is delivered and how it is presented to customers, researchers have recently emphasized the notion of value, which symbolizes the difference between advantages and the amount of benefit provided to the client. As a result, the client perceives the value of services rendered in the same way that he or she perceives the quality of those services [63–65]. When it comes to the quality of services and service procedures supplied in customer interactions, there are many factors that influence the construction of a customer's perception. When a consumer compares the benefits and costs of services given to the benefits and costs offered by competitors, the value presented to the customer is developed [66,67]. As a result, to gain a competitive advantage by providing value to customers, you need to be different and better than your competitors in a lot of different ways, such as with your services, processes, systems, quality, speed, and so on. To accomplish this, innovations in services, service processes, and managerial procedures, as well as the continuation of such innovations, are required [65]. With the recognition of the necessity of providing customers with value, customer value has become a management tool in the development of service operations [68]. The scientific literature says that in order for a business to compete successfully, it needs to be able to provide value to the customer that its competitors cannot [69,70].

According to experts [71–75], customer value is the key tool of competitive strategies and at the heart of management techniques. Furthermore, customer value is intimately tied to an organization's marketing approach and customer-oriented attitude [72,76]. The organization's marketing activities revolve around the creation of value and its presentation to customers. Although there is no consensus in the literature on how to define "value" and its underlying dimensional meanings, the term is most commonly employed in "customer value", "perceived value", or simply "value" forms [77]. Customer value is the gap between the sum of a customer's expectations for a product or service and the overall costs that they must incur in order to use that product or service [78]. The difference between the overall benefit acquired from a product or service and the whole expense required to obtain that product or service is known as customer value [79]. The customer value will be determined by the customer's impression that the degree of service quality exceeds the fee paid for that service (cost). On the other hand, one cannot speak of a value offering to a consumer if the costs incurred are regarded to be higher than the level of services delivered [80,81]. The greater an organization's understanding of consumer demands, the greater its competitive advantage [82]. The 2019 coronavirus disease pandemic (COVID-19) has had serious short- and long-term economic and societal consequences. It has also had a big impact on customer attitudes and behavior when it comes to purchasing [83]. There is no empirical research on what value and quality imply for energy market consumers or what factors influence the quality and value of energy market customers.

The value-creation process should include a wide range of customer participation since their differing perspectives on expected value may "enrich" existing processes with resources not yet available to the supplier. Developing, maintaining, and improving relationships within client relationships creates new opportunities for mutually beneficial

value generation [84,85]. In order for a product or service to be valuable, it has to have good resources [86,87].

A client is an organization or a person who gets a product, according to the PN-EN ISO 9000 standard [88]. The guidelines also highlight that businesses rely on their customers, so it is advised that they understand their customers' current and future needs, meet their criteria, and strive to surpass their expectations. As a result, the client not only chooses the organization based on its financial results but also on its competitive position and image [89]. The quality management model (QMS) ISO 9001:2015 outlined in the standard implies that all processes carried out by the organization have a client at both the entrance and exit. Customer needs should be looked at as the input data, and customer satisfaction should be the output value [90,91] (Figure 1).

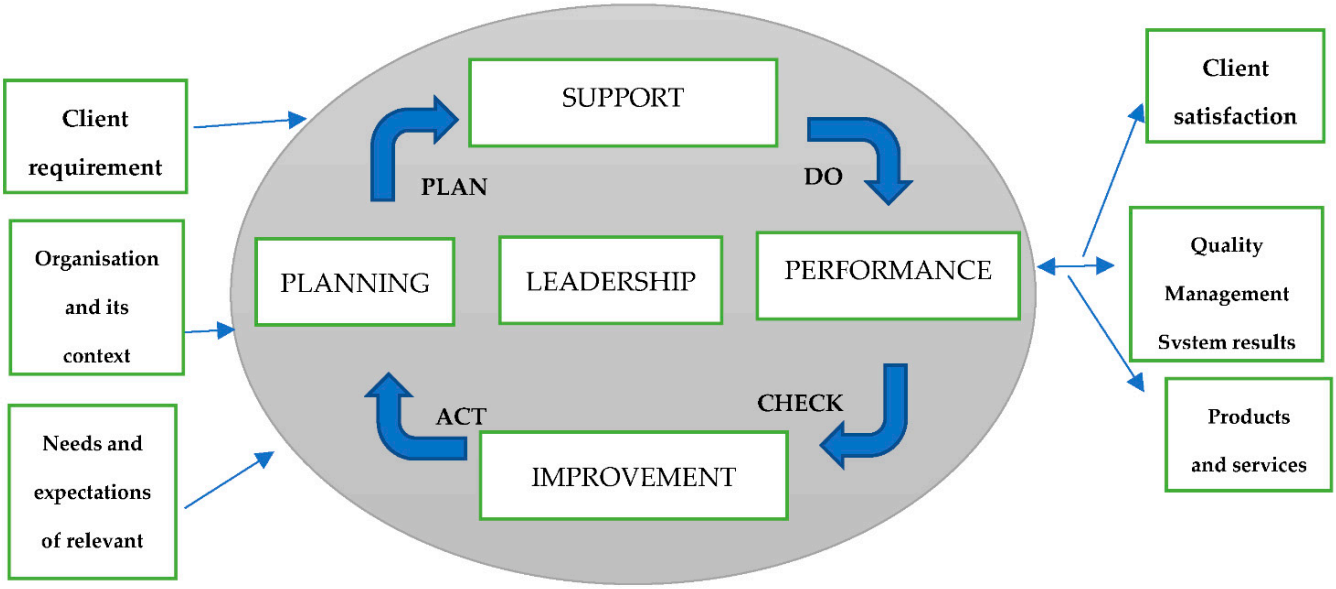

Figure 1. Quality management model (QMS) ISO 9001:2015. Source: [88,92,93].

The ISO 9001:2015 standard specifies that the business should treat the customer as the most significant entity, with the customer playing the most important part in the process of improving the quality of products and services [93]. Customer satisfaction in power distribution services is often assessed by technical performance, such as electricity availability [94,95]. The majority of these enterprises are focused on supplying power rather than achieving client expectations. However, in energy distribution services, service quality is a critical component, and customers are vulnerable to several elements of service quality [96–98]. The business evaluates all new client requirements to determine whether or not they can be met [99]. As a result, customer orientation is the bedrock upon which a company can establish a long-term competitive advantage [100]. The proposed customer value model by [101] tries to conceptualize how firms and customers perceive the value of a product or service, as well as identify value gaps. This paradigm, which pertains to a new era of the service business, allows us to better grasp value from both the customer's and the company's perspectives. Authors [100,102] have created a customer-based value model.

3. Materials and Methods

The goal of this study is to learn more about how household customers see the value and quality concerns in the energy market. Because consumers consider energy use differently at work and in public places than they do at home, this research focused entirely on the household viewpoint. The first step was the CAWI [103] questionnaire, used in the study to investigate families' views of quality and value in the energy market [104,105]. The minimum sample size was established, as well as the means of communicating with

respondents. The questionnaire was made accessible online due to the pandemic's timing and the magnitude of the sample. The study took place in Poland in 2021. The quality and value of energy network providers' services in Poland were appraised by the respondents. There were 2404 people who responded, with 62 percent of them being women and 38 percent being males. According to the gender analysis of respondents, women are more likely to utilize energy in home activities than men (cooking, washing, vacuuming). Following the study, the findings were analyzed and conclusions were drawn. The research questionnaire consisted of 35 targeted questions that addressed the study's topic. This case study aims to fill a gap in the literature by examining what value and quality mean to energy market customers, as well as what variables impact their quality and value. Clients of the home will be the responders (2404 respondents have taken part in the survey). In the second step, the Critical Incident Technique was utilized to assess the quality of energy services. Critical Incident Technique (CIT) analyzes sources of satisfaction and dissatisfaction of customers with the energy services market. This methodology was used because, thanks to it, it is possible to measure and analyze customer satisfaction and determine which events are particularly satisfying and which require improvement. The Pareto–Lorenz diagram, as the third step of research, was used to analyze customer dissatisfaction with the quality of energy services. With the use of the Pareto–Lorenz analysis and the 20/80 rule, it was possible to figure out how many reasons customers are unsatisfied with energy services. Simultaneously, the approaches 5 WHY (the small-step) [94–96] and 5W1H [97,98] were used to think about why a customer is dissatisfied with the quality of energy services [106–110]. Using an arrow graphic, the authors recommend ways to enhance customer satisfaction. In the energy market, a model of factors defining quality and value for customers was developed.

4. Results

The goal of this study is to learn more about how household customers in Poland perceive the value and quality of energy market operators' services. In the first step, the respondents were asked what quality meant to them (Figure 2).

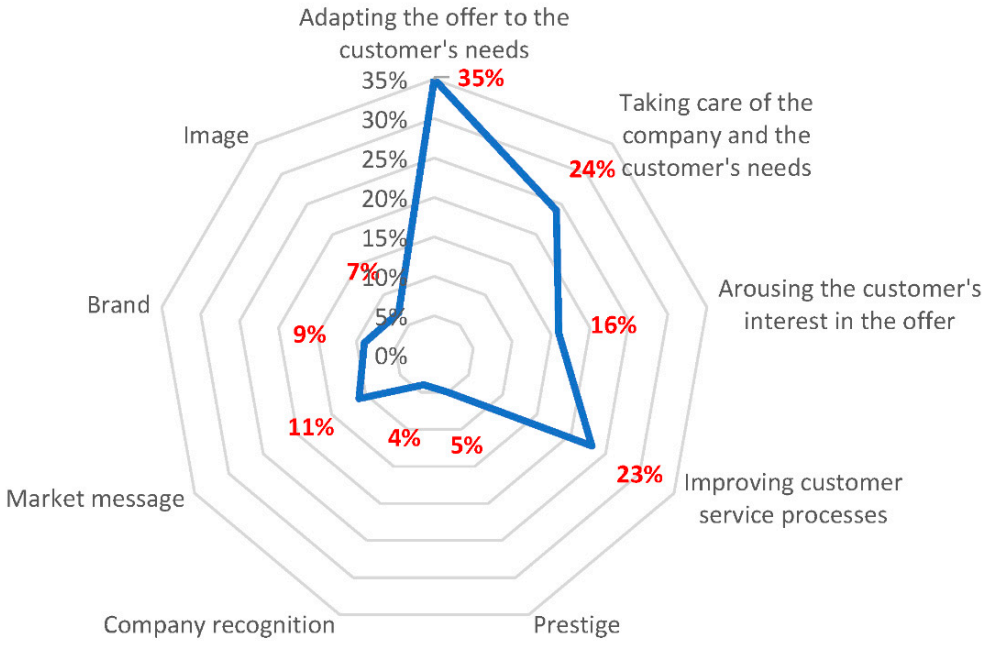

Figure 2. Answers to the question: What is quality for you?

The results presented in Figure 2 show that quality for the respondents is primarily about adjusting the offer to the customer's needs and taking care of customer expectations and improving service processes. Figure 3 shows the factors determining the quality of services provided by energy companies.

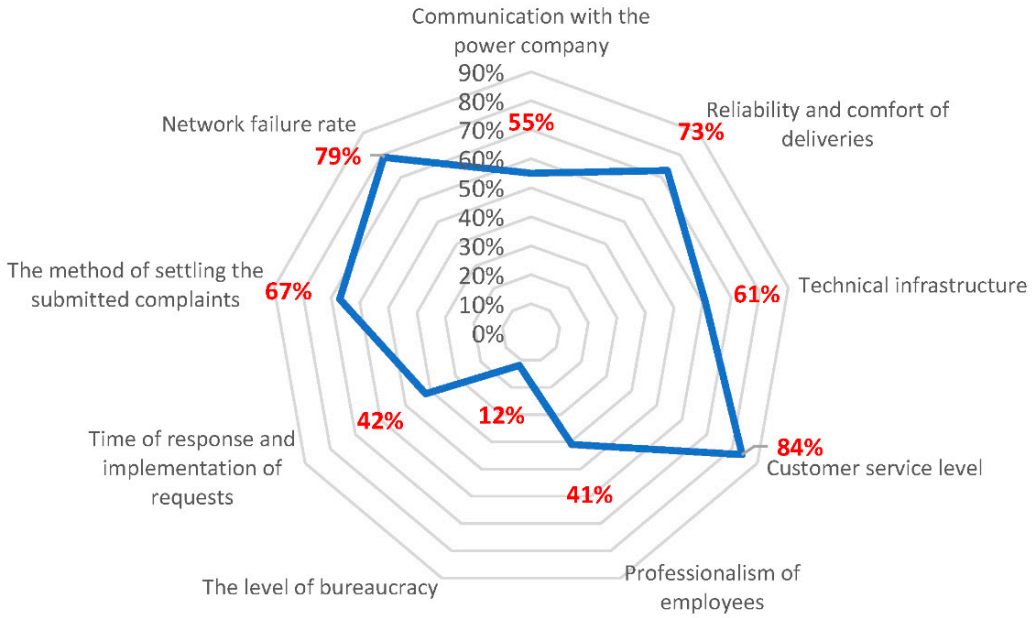

Figure 3. Factors determining the quality of services provided by energy companies.

Figure 3 analysis shows that the quality of energy services, in the opinion of the respondents, is primarily determined by the failure rate of the network (79%), the level of customer service (84%), and the reliability of energy supplies (73%). In the twenty-first century, when the client is a prosumer (aware of their rights and collecting information from the environment), it is important to properly prepare the staff for the client's needs. The presented Figure 3 shows that the challenge for a modern energy company is to care for its customers and maintain proper service quality. Network failure frequency means shorter waiting times and fewer interruptions in electricity supply. Failure frequency also contributes to greater user comfort and the safety of the power supply.

The next step was to ask the respondents what factors, in their opinion, shape the values in the energy market (Figure 4). The results of Figure 4 show that for the respondent, the factors influencing the value are appropriate service (79%), safety (68%), and good customer contact (61%).

The respondents were asked which elements decide the appropriate level of energy company quality (Figure 5). The analysis of Figure 5 shows that the respondents perceive the quality of energy services primarily in terms of customer service quality, environmental protection, the systems implemented in this area, and the initiatives taken. The respondents also noted that aspects of quality improvement are important to them. In the survey, respondents were also asked whether, in their opinion, energy companies care about the quality of customer service. A total of 56% of respondents believed that companies do not care about the quality of customer service, while 44% believed that companies do care about the quality of customer service.

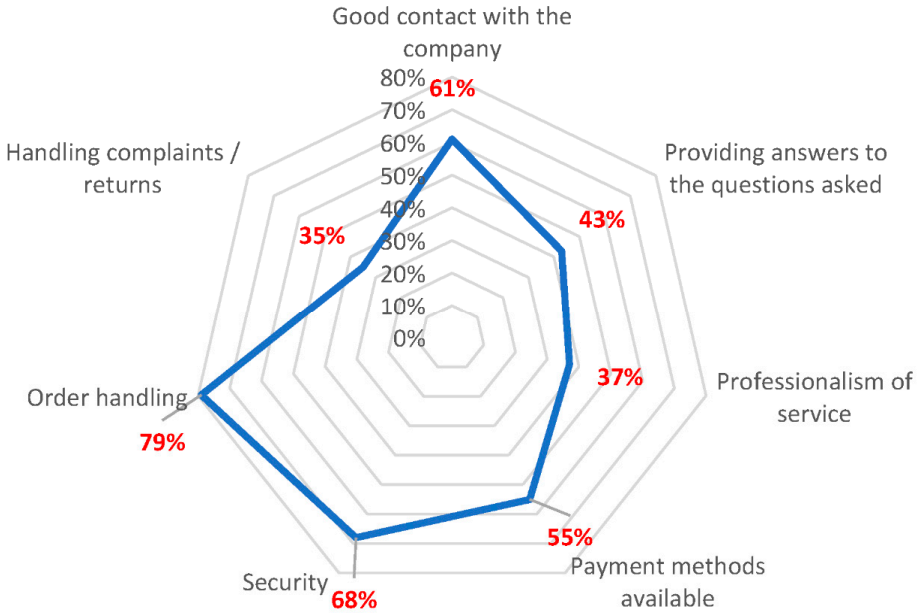

Figure 4. Factors influencing customer value.

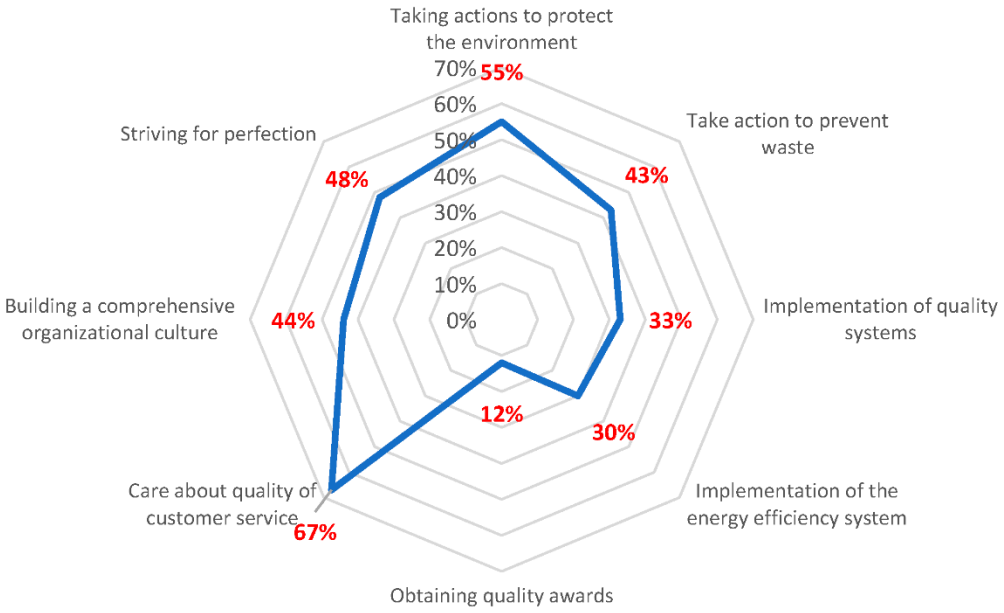

Figure 5. Elements determining the quality of an energy company.

In the further part of the research, the Critical Incident Technique (CIT) method was used, the purpose of which was to assess the quality of services offered by the energy market in Poland. A CIT consists of several specific procedures for observing human behavior and classifying them in such a way that they become useful for identifying practical problems [111]. Contrary to other research methods, CIT uses stories, not quantitative solutions, at the level of data analysis in the procedure [112]. Through observations or interviews, the CIT analysis records the events and behaviors that were observed as successes or failures in achieving a specific goal. Particular descriptions of events and behaviors are identified as critical events. An incident is defined as a perceivable human action that is complete enough to establish the predictions and conclusions of the person performing the action. A critical incident is an incident that increases or diminishes the purpose of the activity to a great extent. A critical event can therefore be defined in relation to the energy market as specific interactions between customers and employees that are particularly rewarding

or not (from the customer's perspective) [113]. CIT analysis may become an effective tool for companies in the energy market to eliminate customer dissatisfaction. Only those occurrences that were recalled in a specific manner by consumers, whether they were either fulfilling or unpleasant, were taken into consideration in the CIT research. An occurrence requires three criteria in order to be considered for analysis:

(1) Including client–employee interaction;
(2) Being satisfying or not from the customer's perspective; and
(3) Including enough specifics for the responder to visualize.

A total of 323 customers took part in the study. Four questions were posed to each respondent:

1. Please recall a time when you were exceptionally happy or dissatisfied with the service as a consumer of the energy market.
2. When did this take place?
3. What precise circumstances resulted in this situation?
4. What factors contributed to your satisfaction or dissatisfaction?

The size of the test sample was determined according to Flanagan's guidance that an adequate relationship would be achieved when adding 100 critical events to the sample that only added two or three critical events [114]. This method of assessing sample size requires the collection and analysis of data in two phases. In the first classification sample, 200 respondents' responses were collected and classified, while in the second, 123 responses were collected and classified in one confirmatory sample, which resulted in 323 responses, from which 4142 separate critical events were identified. The next step in the event analysis was to divide the 4142 events into categories. Responses 1–200 were the first to be fully developed, containing 1945 critical events. As a result, they were divided into 23 categories. As shown in Table 2, the confirmatory sample of 2196 critical events and an in-depth analysis of the responses included in it did not reveal any new categories. For easier interpretation, the categories were grouped into five groups of behavior.

Table 2. Classification of critical events in energy services (NCE—the number of critical events, %CE—the percentage of critical events).

Group and Category of the Event		Classification of Responses 1–200		Classification of Responses 201–323		Total Number of Responses	
		NCE	%CE	NCE	%CE		
Group I Material service infrastructure							
1.	The equipment of an energy facility	112	5.57	24	1.09	136	3.28
2.	Cleanliness and neatness of the staff	122	6.27	133	6.05	255	6.16
3.	The quality of customer service equipment	30	0.15	97	4.42	127	3.07
4.	Modern devices and equipment	123	6.32	48	2.18	171	4.13
5.	Adjusting the service time to customer needs	110	5.65	35	1.59	145	3.5
Group II Reliability of services							
6.	Reliable, proper provision of services	110	5.65	142	6.5	252	6.08
7.	Performing services in accordance with the time (keeping the promises made)	116	5.96	141	6.42	257	6.21
8.	Interest shown to customers (staff availability)	29	1.49	35	1.59	64	1.54
9.	Timeliness/punctuality of the service	129	6.63	97	4.41	226	5.45
10.	Considering customer feedback	109	5.6	117	5.32	226	5.45

Table 2. *Cont.*

Group and Category of the Event	Classification of Responses 1–200		Classification of Responses 201–323		Total Number of Responses	
	NCE	%CE	NCE	%CE		
Group III Speed of service						
11. Responding to customer needs	76	3.9	55	2.5	131	3.16
12. Engagement of staff	49	2.51	47	2.14	96	2.13
13. Ability to help clients	124	6.37	79	3.59	203	4.9
14. Identifying and reacting to customer needs	82	4.21	135	6.14	217	5.24
Group IV Professionalism of the staff						
15. Staff politeness	97	4.98	65	2.95	162	3.9
16. Building trust in the customer	34	1.74	39	1.8	73	1.76
17. Staff communication	87	4.47	75	3.41	162	3.9
18. Professionalism of the staff	101	5.19	95	4.32	197	4.75
19. A sense of security	26	1.33	140	6.37	166	4.01
Group V Empathy						
20. Paying attention to clients	34	1.74	137	6.23	171	4.13
21. Listening to the client	69	3.54	45	2.05	114	2.75
22. Individual approach to the client	55	2.82	213	9.7	268	6.47
23. Understanding the specific needs of customers	121	7.46	202	9.23	323	7.85
Total Behavoir	1945	100	2196	100	4142	100

The next stage of the analysis was to divide all events into satisfactory and unsatisfactory ones from the customer's point of view. Customer satisfaction and dissatisfaction with the use of the CIT method are presented in Table 3.

The research results and their analysis using the CIT method showed that customers are most dissatisfied with: understanding the specific needs of customers; individual approach to the client; and timeliness and punctuality of the service. The CIT analysis also revealed the factors that satisfy clients: cleanliness and neatness of the staff, staff politeness, and the ability to help clients. The above-mentioned factors require analysis and improvement actions, taking into account the value for customers of the energy market and caring about the quality of service as a consequence. The event classification system presented in the analysis can become the basis for the development of customer satisfaction monitoring and the definition of procedures and rules for training employees at all levels of the organizational structure of enterprises because customer satisfaction is not only measured by the employees' responses to customer needs but also largely by the efficiency of an organized system for the provision of energy services (tools, equipment, equipment, procedures). The CIT analysis shows how much knowledge and how much control is needed to be ready for the process of providing energy services.

In the further part of the research, the Pareto–Lorenz diagram [115] was constructed on the basis of the CIT method for events and categories of unsatisfactory customers in the energy market. The Pareto–Lorenz diagram is a tool that enables the scheduling of factors influencing the analyzed issue [116]. Table 4 shows the frequency of the increase in energy consumption in households.

Based on Table 4, a Pareto–Lorenz diagram was built (Figure 6) that shows the reasons for customer dissatisfaction with the quality of energy services.

The analysis of Figure 6 shows that 20% of the reasons, including understanding the specific needs of customers (P1), individual approach to the client (P2), timeliness (P3), considering customer feedback (P4), and identifying and reacting to customer needs (P5),

affect 42.68% of the dissatisfaction with the quality of energy services. It seems that these reasons are the reasons why companies are not aware of the fact that the customers of the energy services market would like companies to be in constant contact with them, take care of their individual needs, react to problems and treat them individually. Customers would like energy companies to be in touch with them via social networking sites.

Table 3. Classification of groups and categories according to the results of events (NCE—the number of critical events, %CE—the percentage of critical events).

Group and Category of the Event	The Type of the Event Result Satisfaction		The Type of the Event Result Dissatisfaction		Result	
	NCE	%CE	NCE	%CE	NCE	%CE
Group I Material service infrastructure						
1. The equipment of an energy facility	94	4.83	42	1.9	136	3.3
2. Cleanliness and neatness of the staff	220	11.32	35	1.59	255	6.15
3. The quality of customer service equipment	101	5.19	26	1.18	127	3.06
4. Modern devices and equipment	54	2.77	117	5.32	171	4.12
5. Adjusting the service time to customer needs	33	1.7	112	5.09	145	3.5
Group II Reliability of services						
6. Reliable, proper provision of services	120	6.17	132	6	252	6.08
7. Performing services in accordance with the time (keeping the promises made)	140	7.2	117	5.32	257	6.2
8. Interest shown to customers (staff availability)	39	2	25	1.13	64	1.54
9. Timeliness/punctuality of the service	32	1.64	194	8.82	226	5.45
10. Considering customer feedback	52	2.67	174	7.91	226	5.45
Group III Speed of service						
11. Responding to customer needs	82	4.22	49	2.22	131	3.16
12. Engagement of staff	49	2.52	47	2.13	96	2.32
13. Ability to help clients	128	6.58	75	3.4	203	4.9
14. Identifying and reacting to customer needs	68	3.49	149	6.77	217	5.23
Group IV Professionalism of the staff						
15. Staff politeness	137	7.05	25	1.13	162	3.91
16. Building trust in the customer	72	3.71	1	0.04	73	1.76
17. Staff communication	50	2.57	112	3.36	162	3.9
18. Professionalism of the staff	123	6.33	74	5.09	197	4.75
19. A sense of security	71	3.65	95	4.32	166	4
Group V Empathy						
20. Paying attention to clients	24	1.23	147	6.7	171	4.12
21. Listening to the client	83	4.27	31	1.4	114	2.75
22. Individual approach to the client	67	3.44	201	9.14	268	6.47
23. Understanding the specific needs of customers	104	5.45	219	10.04	323	7.88
Total Behavior	1943	100	2199	100	4142	100

Table 4. Reasons for customer dissatisfaction with the quality of energy services by frequency of occurrence.

Reason Symbol	Reasons for Occurrence	Percentage Share	Cumulative Value
P1	Understanding the specific needs of customers	10.04	10.04
P2	Individual approach to the client	9.14	19.18
P3	Timeliness/punctuality of the service	8.82	28
P4	Considering customer feedback	7.91	35.91
P5	Identifying and reacting to customer needs	6.77	42.68
P6	Paying attention to clients	6.7	49.38
P7	Reliable, proper provision of services	6	55.38
P8	Modern devices and equipment	5.32	60.7
P9	Performing services in accordance with the time (keeping the promises made)	5.32	66.02
P10	Adjusting the service time to customer needs	5.09	71.11
P11	Professionalism of the staff	5.09	76.2
P12	A sense of security	4.32	80.52
P13	Ability to help clients	3.4	83.92
P14	Staff communication	3.36	87.28
P15	Responding to customer needs	2.22	89.5
P16	Engagement of staff	2.13	91.63
P17	The equipment of an energy facility	1.9	93.53
P18	Cleanliness and neatness of the staff	1.59	95.12
P19	Listening to the client	1.4	96.52
P20	The quality of customer service equipment	1.18	97.7
P21	Interest shown to customers (staff availability)	1.13	98.83
P22	Staff politeness	1.13	99.96
P23	Building trust in the customer	0.04	100

Source: own study.

The analysis of the presented results shows that the challenge faced by energy companies is related to the above-mentioned factors connected with empathy that influence the clients' perception of energy service quality. For this purpose, this issue was subjected to a deeper analysis. The 5 WHY method was used (Figure 7). The 5 WHY method is a Lean Management method for identifying a single reason for an issue, allowing it to react to problems that stem from a single root cause in the most efficient and effective way possible. It involves finding the cause of a problem by asking "why?" five times to find out why the problem started and where it started. The 5 WHY technique is a novel approach to determining the fundamental cause of a problem by analyzing cause–effect relationships [117]. The 5 WHY technique utilizes a questioning technique to figure out the cause-and-effect links of a certain loss or problem. The main goal of this strategy is to identify the source of a loss or problem. This method does not require five questions, and the number of questions can be raised as needed, but in most cases, five questions are sufficient to find the core reason. The final response in this method refers to a procedure. The root reason must be a wasteful process that either does not work or does not exist at all. Method 5 WHY was invented by Sakichi Toyoda. Asking questions to find the root causes of a problem is the simplest technique to analyze. The researcher keeps asking "why" until he or she comes to a relevant conclusion. It must be made sure that the question is asked until the root cause of the problem is found [118].

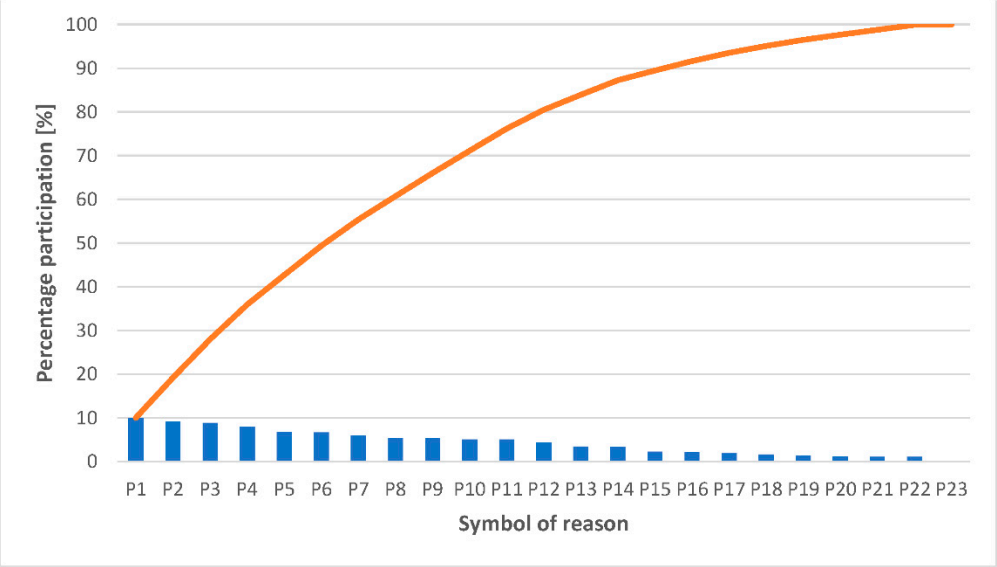

Figure 6. Pareto–Lorenz diagram causes of customer dissatisfaction with the quality of energy services by frequency of occurrence.

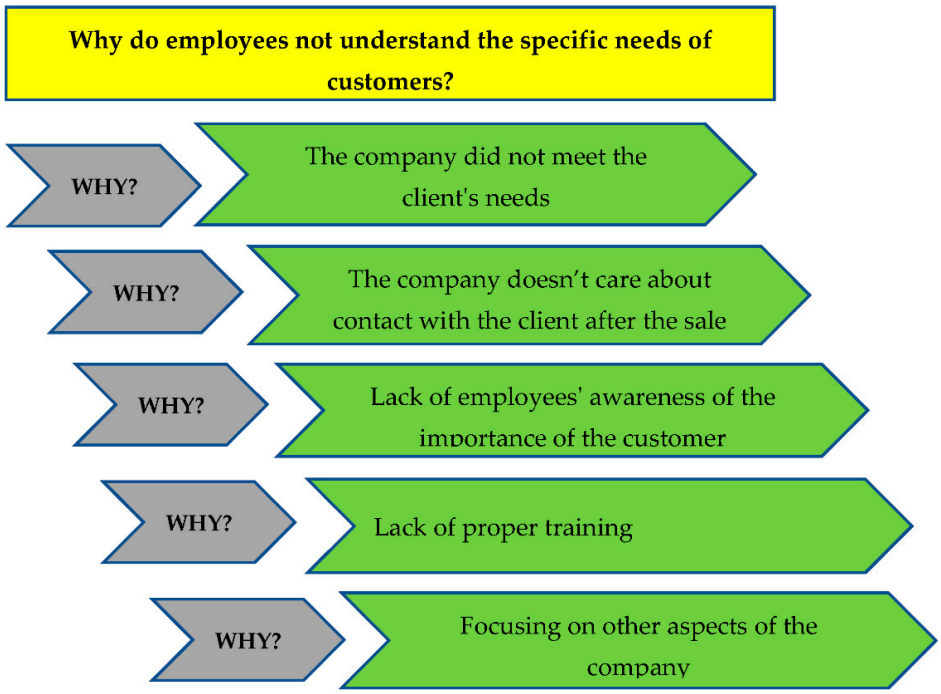

Figure 7. The 5 WHY method for the problem: Why do employees not understand the specific needs of customers?

The analysis of the 5 WHY method (Figure 7) shows that the biggest problem in energy companies is the lack of training in customer satisfaction. Lack of training and neglect of appropriate staff skills in the field of customer service means that there is a lack of advice on energy saving. The client feels lost; it is not possible to gather the necessary knowledge on how to live economically, which will only aggravate their dissatisfaction and frustration. Customers have great doubts as to the level of service in the energy market, which, due to the specificity of the industry, is a challenge for staff and companies. In the next stage of the investigation, the 5W1H technique was applied (Table 5). The 5W1H technique stands for tool logic, a quality instrument that enables quick identification and elucidation of a

problem's fundamental aspects [54,119]. The method is used to analyze domain concepts and relations from six aspects, including who, when, where, what, why, and how [120–123].

Table 5. The 5W1H method for the problem: The customer is dissatisfied with the quality of energy services.

PROBLEM	A Customer Is Dissatisfied with the Quality of Energy Services
WHAT?	The problem concerns an energy customer who contacts the company at a critical moment. The client assesses the time the energy company reacts to a crisis situation.
WHERE?	Lack of adequate help
WHO?	The problem was observed by an energy service company
WHEN?	The issue involves a consumer who approaches the company at a vital juncture. The client evaluates how quickly the energy business responds to a crisis.
WHY?	The described problem reduces customer satisfaction and affects the number of complaints and grievances
HOW?	The customer complains about the quality of service.

Source: own study.

In comparison to other businesses that provide various types of services, the power supplier has a far lower chance of being contacted by the customer. Because we use their hotlines so frequently, mobile network carriers and banks are more likely to have a chance to "pamper" their customers in communication. An energy client normally calls the company only when something goes wrong (a breakdown, an invoice problem), after which they can evaluate the provider and its response time in a crisis situation. (This is especially true for an individual client who seeks to reduce prices and switches energy suppliers less frequently than a business.) This is a major hurdle for the organization since customers will now perceive it in terms of quality. A high level of customer satisfaction is of great importance for the energy company in particular. The most important aim seems to be customer satisfaction with the service quality. Figure 8 shows an arrow diagram that was used to improve customer satisfaction. Affinity diagrams, interrelationship diagrams, tree diagrams, matrix diagrams, matrix data analysis, arrow diagrams, and process decision program charts are among the new quality tools [124,125]. The new seven tools make it easier to identify, plan, and coordinate a solution to an issue [126]. They are used in conjunction with fundamental quality instruments to improve the efficacy of Total Quality Management (TQM) [127]. The importance of quality tools may be seen in the rise in customer demand for higher-quality products [128].

Activities numbered 1–8:

1: A review of the credentials of the employees.
2: Identifying the training needs.
3: Figuring out what kind of training you will need.
4: Selecting a training center.
5: Putting the training into action.
6: The creation of operating procedures.
7: Creating databases with client complaints.
8: Identifying hardware and software requirements.

Figure 8 depicts the series of events leading to improved customer service, with service as one of the potential activities for increasing customer satisfaction. Because each step is stated with the exact number of days required for implementation, we know exactly how long it will take us to improve customer service after reviewing this diagram. As a result, we will need 12 days to select a training facility. We can also say that we can assess staff qualifications, write operating procedures, and figure out hardware and software needs all at the same time. Based on the conducted research, the CIT method, the Pareto–Lorenz diagram, the 5WHY method, and the arrow diagram, as well as its results, a model of customer quality and value was proposed. The model is in Figure 9. The model presented

in Figure 9 shows that the elements that affect the quality and value for the customer are primarily related to the quality of service. This means that the challenge for energy companies is the training of personnel. The training will not only make employees aware of the importance of the client but also how important their role as internal clients is in shaping a positive image of the company and relations with the client. The model also emphasizes how important it is to remember continuous improvement and care for quality and value for the customer yesterday, today, and tomorrow. Environmental aspects, safety, and proper relations (company–client) are also very important aspects for clients. The elements of the model are related to the ISO 9001: 2015 quality management process model [129–132] in which the most important element determining the company's success is the customers and their satisfaction [133–135]. According to the model, the client needs a sense of security, attention, and company care for environmental aspects and network reliability from the energy company.

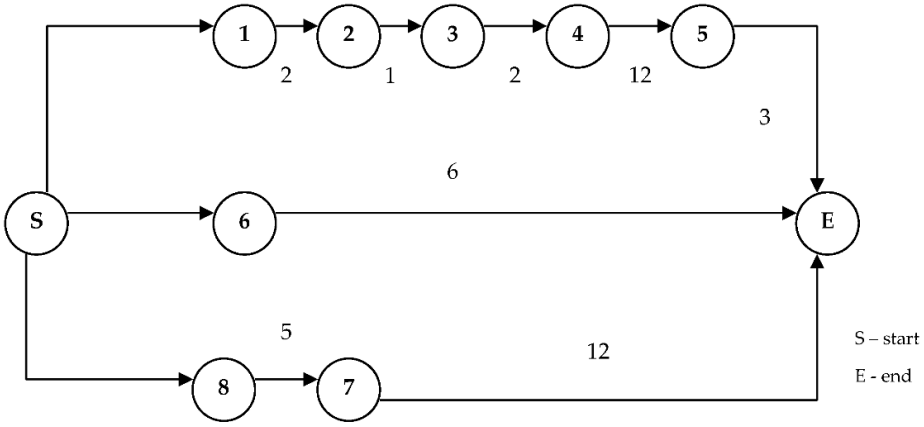

Figure 8. The arrow diagram to improve customer satisfaction.

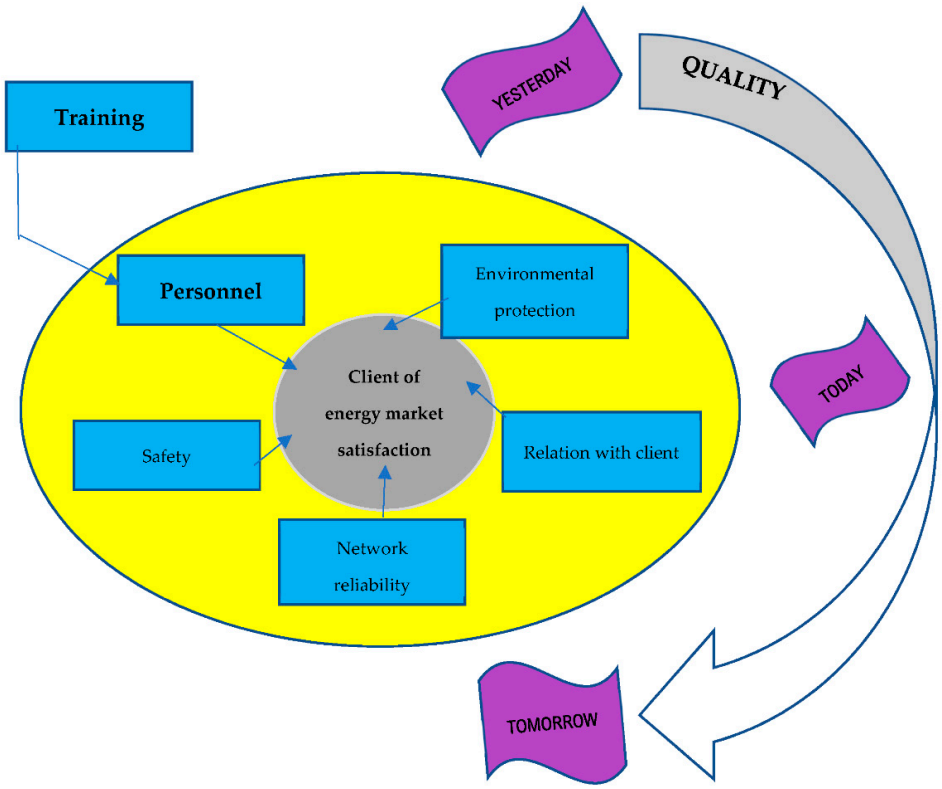

Figure 9. Model of elements determining quality and value for customers in the energy market.

5. Conclusion and Discussion

Nowadays, client behaviors are changing, so building new market positions is even more difficult for modern companies. Because of the new technologies at their disposal, their approach to energy is evolving. They had previously been largely passive, only contacting their energy company when an issue arose. Some people are already generating their own electricity or using sophisticated control and automation systems to monitor and manage their energy. New expectations and opportunities are combined to transform the larger strategic framework as well as the customer context in which power utilities operate. These are pouring in from a variety of directions. Regulatory expectations are shifting, with some nations implementing far-reaching energy reform programs and others gaining significant traction. Consumer-centric business models are evolving, becoming increasingly reliant on customer interaction. Customer expectations are shifting as expanded online digital retailing sets the benchmark for immediacy, simplicity, and control. All of these shifts are fueled by technological advancements that are altering people's power choices and the way the energy system can be regulated.

To ensure improved customer responsiveness, one corporation established a customer feedback system to drive product creation, sales, service, and support departments. The customer is the one who determines quality. Regardless of how innovative or high-quality a product is, if it fails to fulfill client expectations, it will fail. The task at hand is to figure out what customers want and whether they are happy with the company, its products, and its service. This is where organizations that have well-intentioned quality programs can go astray [121,132]. When it comes to creating value, quality is crucial. The number and variety of products available on the market have never been so developed as a result of global, fierce competition combined with the expansion of product creation and manufacturing methods [24,136]. The following questions were asked in the paper:

- What factors determine the quality of energy services?

The analysis of issues related to the quality of the energy market allows us to conclude that for customers, proper contact with an energy company is very important. In the era of globalization of technology development, the client-prosumer would like to receive not only a service from the company but also wants the company, through an internal client, i.e., an employee, to give the client a sense of security and provide high-quality service. Consumers are increasingly choosing to contact companies electronically—via e-mail, websites, or social media—and businesses in the energy sector should be aware of this. Nowadays, communication via social media is quite widespread. Regrettably, many businesses, including energy, fail to realize their full potential. Unfortunately, social media is not currently equipped to handle requests for sensitive personal information, but it is a great way to keep customers informed about tariff changes, power outages, and the location of customer support centers. Social media contributes to the company's image as a consumer-friendly and approachable entity. Customers can report issues and request information on vendor profiles, and communication then transfers to more traditional methods. Additionally, instruction on the use of environmentally friendly energy can be provided. Moreover, social media may be used to educate people about environmentally friendly energy use, which helps a company's reputation. This trend can be seen in both Western markets and Poland, where modern means of client connection are becoming increasingly significant.

With a view to ensuring high-quality energy services, enterprises should be guided in their activities by the first principle of quality management: a customer-focused enterprise [137,138]. The company should remember that it depends on customers, and that is why it should know their expectations, accept them, and try to make the expectations expressed in the product exceed the initial expectations. Additionally important, from the perspective of ensuring proper service and relationship with the customer, is to take into account the third principle of quality management: employee involvement [137]. Energy companies should remember that the core, the most important part of the enterprise, is the crew. The rules say that only the full involvement of employees contributes to increasing

the efficiency of the company's operations. Enterprises should take measures to build the awareness of employees towards shaping the proper quality of energy services. The retailer's relationship with the consumer begins to be eclipsed in the new world where the utility sector's digital assets connect to the customer's digital assets, since many benefits of digital interaction, such as demand response, will flow from assets further up the energy value chain. The contacts between the supplier or retailer and the customer for the provision of energy and related services do not require the same level of intensity as the grid's minute-by-minute interactions with the customer's assets. For grid firms, this is a huge shift. As a result of unbundling, many markets have become asset- and system-focused, but if the future develops in such a way that grid management and sustainability necessitate a partnership between customers and the grid, they will necessitate a strong customer interface, either directly or through intermediaries.

In the opinion of the respondents, the network failure rate is also a factor influencing the quality of energy services. Therefore, enterprises should take initiatives to reduce network failures. Enterprises implement programs that reduce the number and duration of unplanned breaks, network automation and monitoring, the construction of modern communication channels for the purposes of network control and analysis of network operating parameters in real-time, and the use of systems that signal the failure of power lines underground, which reduces the impact of weather conditions on the operation and failure rate of the network and also improves the safety of energy supply to customers. However, it seems that despite these efforts, the client requires further initiatives.

- What factors determine the value of energy services?

The results showed that the customer's value is related to the energy sector's direct contact with consumers. This comprises both customer site interactions and talks at the company's headquarters, i.e., a personalized approach to the client, and the way in which a conversation is conducted. Attainment of proper communication rules and conditions under which contacts occur, for example, employee energy from a plant, which will spend a few hours with a business client, may be good counsel for them. The energy firm aspires to provide a consistent, repeatable product offering that satisfies client expectations. As a result, maintaining frequent touch with the client, listening to them, and responding to their needs is essential. The customer is the most important person for the energy company, according to the literature [138–141], because:

- they are the most important person in the company, even when they write or call;
- they are not dependent on the company, the company is dependent on them;
- the client cannot be won—they will leave the competition;
- the client does not interfere with our work, but is its meaning and purpose.

Customers today live in a world where communication is becoming increasingly chaotic. Obtaining information about certain values necessitates the use of proper tools as well as the message's content. The more commercials there are, the more human organisms become resistant to them. Producers and energy suppliers face new challenges as a result of changing customer behavior. The demand for electricity during commercial breaks when broadcasting a football match is rapidly increasing, in particular in large cities. The break is used to make tea (using an electric kettle), go to the restroom, make a phone call, and so on. The same thing happens when advertising blocks are broadcast on all stations at the same time. Energy companies are working hard to come up with new technology that will allow them to keep providing electricity even in extreme conditions.

The customer chooses not only the organization's financial results but also its competitive position and image. The customer focus approach has many significant advantages, including increased revenue and market share due to a flexible and rapid reaction to market possibilities, increased efficiency in resource utilization to enhance customer satisfaction, and increased customer loyalty. Research and understanding of the client's needs and expectations; ensuring that the organization's goals are related to the client's needs and expectations; communicating the client's needs and expectations throughout the organiza-

tion; measuring customer satisfaction and taking action based on the results and systematic customer relations management of is necessary. This implies that customer needs should be the primary input data for all processes in the system, and their happiness with the company's goods and services, as well as their confidence in the organization, should be the primary output data. Customers should be a source of information for the company in order for its processes to run smoothly and for goods and services to be compliant. This strategy ensures that the organization within the energy industry consistently improves customer satisfaction by addressing their needs.

There are implications from the work that customer value is an essential and ever-changing field of study. The expanding demands and expectations of customers, more buying awareness, shorter product life cycles, the dynamism of current technology development, and better access to resources are just a few of the developments that are taking place. Companies seek the favor of clients and their interest in a given offer. As a result, the customer has some "power", and their requirements should be met. Changing business circumstances compel companies to reassess their core competencies and adapt to the environment's unparalleled complexity and dynamism, as well as the unpredictability of the events that occur within it.

In the era of globalization, providing customers in the energy market with high-quality products is becoming the standard of conduct for modern enterprises. Focusing on the customer's requirements and expectations and on providing high-quality products and services is an important element in building the competitive position of energy market companies. Maximizing profits by providing customers with high-quality products and services should be the main goal of marketing strategies that integrate areas such as process management, quality, innovation, and marketing in order to obtain and maintain a competitive advantage through constant innovation. Continuous quality improvement and focus on the customer and their requirements cause a given product or service to be perceived as desired, respected, useful, or important. It was found that energy companies are focused on customers and their needs, but they should constantly improve, especially in the area of customer relations and an individual approach to the customers and their needs. The conducted research allowed us to determine how the customer perceives quality. According to them, this is primarily through reliability and empathy. Research has shown that it is very important for the client that the company take them seriously. The high quality of products is the greatest and most important value for the customer, which they look for when making purchases.

The next step will be to compare countries to find out which country is more concerned with quality and value for the customer in terms of sustainable development and industry 4.0.

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