Article

Social Media about the Company's Image as an Element of Specific Development

Justyna Żywiołek [1,*]

[1]   Czestochowa Uniwersity of Technology; justyna.zywiolek@wz.pcz.pl

[*]   Correspondence: justyna.zywiolek@wz.pcz.pl; Tel.: +48 34 3250399

Abstract: Personalization, mobility, artificial intelligence, corporate life transferred to the world in social media - all these elements will shape corporate social media in the near future. It is necessary to consider what features and what standards of behaviour enterprises will have to meet in order to build an image in the world of social media and adapt to the preferences and requirements of the client. Corporate social media has been created to support clients in using various services, give them the possibility of easy communication without time and place barriers. Therefore, high-quality corporate social media profiles significantly affect trust in the company and can affect its reputation. Considering that the aim of the article is to examine the impact of social media on the image of the company, various exchanges of perception of the quality of corporate social media, the risks they bring for the company and the perception of them by customers, which gives the image, were examined. The results of empirical research indicate that the security, simplicity and variety of m-banking services have a significant impact on the perceived quality, which in turn has a positive impact on reputation. The author proposed a methodology based on the Kano model and customer satisfaction in order to examine the declared needs and unspecified desires and divide them into different groups with different impact on consumer satisfaction. The study took the form of an original, universal questionnaire that can be used in other similar studies. The analysis included 861 correctly completed questionnaires, and the obtained results were included in the management's action plans after their submission. Enterprises expressed their interest that the measures taken should be reviewed after one to two years.

Keywords: sustainable business; social media in the enterprise; Kano's model, enterprises reputation.

1. Introduction

The impressive possibilities of information and communication technologies allow for the effective exchange of information, streamlining and accelerating activities, virtualizing products and services, and creating and using electronic methods of communication. This, in turn, creates conditions for the emergence of new forms of communication, potentially new channels of information transmission [1]. Creative business models, constant rebuilding or changes of the business strategy make it more and more dispersed, ubiquitous and global as a business process that enables work to be performed across time, distance and function [2]. These changes are constantly transforming the value creation process, enabling a new, innovative approach to creating a corporate image, ranging from branding, to personalization, extended functions for e-services [3], to the integration of business processes and digitization of networks or supply chains [4]. They created the ideal conditions for branding and its image on the web to take a leading role, representing an important and constantly evolving part of the digital world [5]. Recent figures strongly support this claim: in the European Union (EU), for example, the proportion of online shoppers reached 68%, and in 2020 one in three companies in the EU had a company profile on a social network [6], while one in five made online sales through the social network or advertised on it [7].

This article takes a different approach and discusses cyber-security challenges that can negatively affect a company's image on social media and the Internet, and hence on sustainable economic development. The purpose of this article is to understand the main cyber-security threats, identify their actual or potential impacts, and outline the main aspects that should be considered from a prevention and recovery perspective. The article is organized as follows: The introduction is followed by a literature review, focusing on the company's reputation and the activities offered in the field of social media. The research methodology is presented in the fourth part of the article, starting with the research outline and data collection, followed by a detailed description of the data analysis. This part begins with the relevance and reliability analysis and then focuses on the evaluation by using the Kano model. The last part summarizes the article and describes possible further studies that result from the analysis.

2. Research Model and Hypothesis Development

Social media and the company's corporate profiles within it represent an emerging strategic orientation and its role in online reputation and image needs [8]. Moreover, since previous research has indicated a lack of consensus on what constitutes corporate online reputation [9], this study should reveal certain dimensions of social media and its impact on corporate image [10]. Striving for integration, different approaches to the functioning of the enterprise online and in social networking sites and the most common threats that may affect the image of the enterprise through social media [11], which are distinguished as the most important in the current literature and reports of industry websites [12, 13]. We define the following dimensions of the online image: security, simplicity and variability, the number of threats and possible security [14]. As suggested in the literature, companies need to consider how easy it is to use social media and company profiles to be credible and to provide a variety of services online with exactly the same care as in stationary [15]. In addition, we propose to test the impact of the perceived behaviour, actions taken in the network and on social networks on the company's reputation. The research model is presented in Figure 1, while the support for various hypotheses is presented in the following chapters.
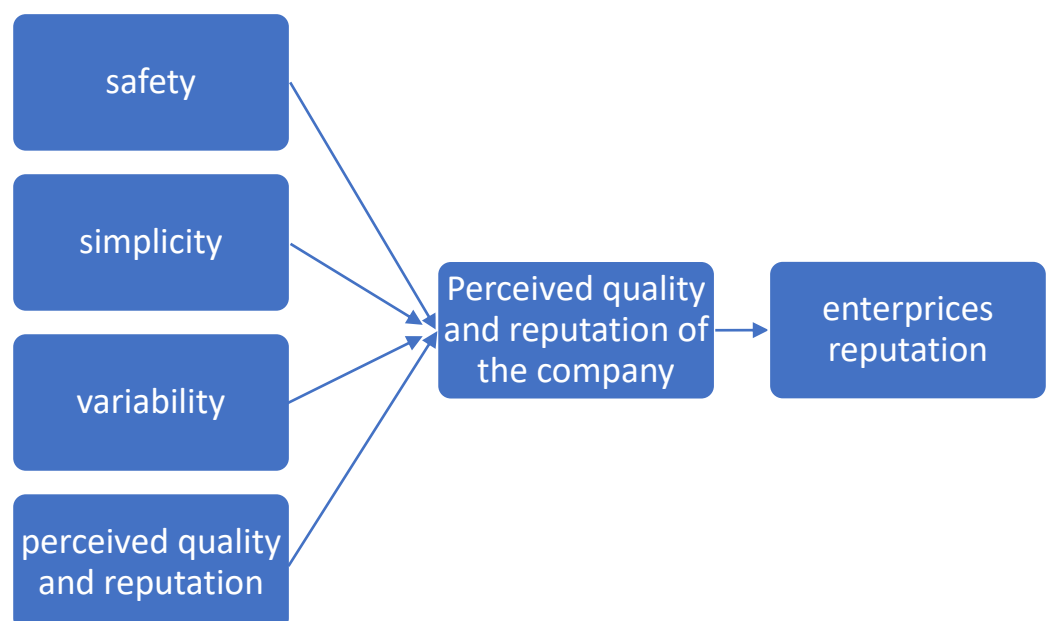

Figure 1. Research model.

Earlier empirical results show that customer satisfaction increases when they perceive the company and its image as positive, good, correct [16], indicating that the

image in social media is associated with customer trust, and finally with the company's reputation [17,18]. Security of company profiles in social media is defined as the ability to prevent unauthorized access to information and resources, keeping accounts in a professional and continuous manner, while ensuring customers that the profiles in the media are reliable, serviced continuously, professionally, and stable, maintaining all their functionalities and exactly at the assumed service time [19, 20]. Concerns about the perceived risk and safety as well as the image of the company seem to be one of the main barriers to the functioning of companies in social media [21, 22]. Higher risk perception and fear of losses may make people avoid creating official company profiles [23,24] and question their quality, professional preparation and functioning [25]. Security has been proven to be one of the most important determinants of social media adoption among Generation Y. Customers can easily turn to other contact channels for services or purchases if they have concerns about the security of social media activities and the accuracy of company profiles [26, 27]. As some previous studies show, safety may be considered an important dimension of the quality and positivity of a company's image [28]. In order to test the effects of social media safety research, we make the first hypothesis:

Hypothesis 1 (H1): The security of social media profiles positively influences the perception of the company's image.

The simplicity with which you can use social media causes that today everyone has a profile, which can be defined as ease of use and simplicity of functioning in the online world [29,30]. Previous studies, such as [25], suggest that enterprises need to consider how to design their profiles to be informative and easy to use. Simplicity was found to have a positive impact on the perceived value of a profile [10] as well as on their actual use [31] and confirmation of the authenticity of a company profile [32]. When customers notice that social media and its activities, such as services and shops are easy to learn, with a user-friendly interface and real-time assistance, they will have a greater sense of self-efficacy, leading to a higher positive image creation [3]. Clients may find the use of social media less attractive than traditional services [33] because they often require more mental effort, are more time-consuming, or the lack of immediate effects causes frustration [34]. In order to test the effects of the perceived ease of use of the offered products and services in social media, we propose the following hypothesis:

Hypothesis 2 (H2). The simplicity of using social media and the clarity of the content provided has a positive effect on the perceived quality of the mobile banking service.

In case of company profiles on social media, the wide range of services, available products and services offered to customers is becoming increasingly important. Profiles in social networks in their simplest form can provide support for simple purchase transactions [35] (eg buying services, paying for a subscription). However, more complex services, such as arranging related products and contracting additional services, may pose a problem for the user [10,24,31,36]. The variability of services within profiles on social networking sites therefore includes the availability of various additional services [37] with an extension to the highest level of variability of social networking services in those systems [38] that allow for the provision of services, personalized services as well as personalized marketing messages [2,17 , 39]. Previous research shows that wider variety and characteristics can be seen as significant predecessors of quality. Their content and the quality of available services is important for the quality of mobile services [40,41]. In line with the previous findings, we propose the following hypothesis:

Hypothesis 3 (H3). Various services offered by social media have a positive impact on the perception of the quality offered in the company and its image.

Although image is a multidimensional construct that varies with that of the stakeholders' [42], the quality of products and services has been identified as one of the key factors describing a company's reputation [43]. Ennew and Sekhon [44] argue that reputation develops when services are accompanied by knowledge, experience, consistency and shared values, and in the case of low-quality products and services, it is not possible to build a lasting, long-term image [45]. Through the quality of products and

services, organizations show their credibility and enjoy the trust of their stakeholders [46], increase customer satisfaction, which leads to a high level of customer engagement and loyalty [2]. The relationship between perceived service and product quality and reputation is important [31] as clients rely on image to assess perceived risk [47–49] when no objective and measurable attributes are present. To test this relationship, we propose the following hypothesis:

Hypothesis 4 (H4). The perceived quality of company profiles in social media has a positive effect on the company's image.

Materials and Methods

In order to test the research model and hypotheses used to verify the conducted research, a questionnaire survey was conducted to collect responses from clients of the surveyed companies who use products and services offered by social media profiles. The research questionnaire consists of four parts. The first part of the questionnaire measured the characteristics of profiles in social media. It consisted of 18 statements about the safety, simplicity, variety of profiles and the threats that social media can bring to the company's reputation.

The second part consists of statements measuring the perceived quality of social media profiles, while the third part consists of assumptions about the company's reputation and image. The last part of the instrument concerned respondent data, including, inter alia, frequency of using company profiles, how they are used. All the multi-point measures used were based on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree) and are presented in more detail in Table 1.

Table 1. Research instrument description.

Construct		Code	Item
Characteristics	Safety	S1	The company profile is credible
		S2	The profile is continuous and stable
		S3	Creating new entries, products or services is carried out accurately and on time
		S4	All the functionalities of the profile are performed reliably and on time
		S5	The use of profiles and the information posted on them is safe
	Simplicity	I1	Downloading codes and information from social media is simple
		I2	Activating the codes used in the profiles is simple
		I3	Searching on social media profiles is simple
		I4	The online payment execution through profiles is simple
		I5	Contact with the company via social media is possible using, for example, chat
	Variability	V1	The profile enables the use of additional services

		V2	The profile allows you to access additional materials or discount codes
		V3	The profile enables participation in competitions prepared by the company
		V4	The profile allows you to order remotely
		V5	The profile allows you to sign up for loyalty programs and webinars
		V6	The profile enables personalized communication
Perceived quality		Q1	Overall customer support via social media is excellent
		Q2	The service or codes offered by social media are of the highest quality
		Q3	Social profiles of the observed companies fully meet my expectations and needs
		Q4	The average score for overall reliability, safety and ease of use and operation is at a good level
		Q5	Overall, I am satisfied with the quality of service through company profiles on social media
Reputation		R1	The profiles are run in several languages and the content is adjusted to the customers' needs
		R2	Company social media evoke positive emotions
		R3	I have a good feeling about the profile being true
		R4	I trust that the redirects to other sites are checked
		R5	I respect companies that publish only selected content and have a good reputation
Threats		T1	Phishing attacks
		T2	Impersonating company profiles
		T3	Malware links
		T3	Hejt among users / no reaction from the company
Balance - development		B1	Social media campaigns about sustainable development
		B2	Possibility of dialogue with stakeholders / image building
		B3	Corporate social responsibility that companies show their customers in an accessible way
		B4	The client as a "tool" for understanding and social change

	B5	Customer involvement in the development of the company / immediate feedback

Source: own study

The criterion for selecting enterprises for the study was the activity of company profiles in social media. It allowed to distinguish the so-called leaders among fans [50] on social networking sites such as facebook or instagram. The selection of respondents was well thought, adequate to the age and ability to use social media [51]. The questionnaire was sent by e-mail to selected respondents on a group of 1000 clients of several large enterprises in Poland and Portugal. Due to the size and importance of companies, they were also the first to make available high-tech channels for offering their products and services [52] and their customers were therefore selected to participate in this survey. Each of the respondents received an e-mail with an invitation to participate in the study, with a brief explanation of the purpose of the study. The anonymity of the respondents was fully secured. During data collection, it was checked that the data was in line with the planned sample quota design. In total, 861 replies were received. The group consisted of 72% of men, and 83% of the respondents had higher education. Among the respondents, 33.8% of them use mobile banking several times a week, 50.87% of the respondents use mobile banking every day, and 0.46% use it less than once a month. The distribution of the use of mobile banking is presented in Table 2.

Table 2. Frequency of using company profiles on social media

Frequency	Score	%
Every day	438	50,87
Several times a week	291	33,80
Once a week	79	9,18
Several times a month	38	4,41
Once a month	11	1,28
Less than once a month	4	0,46
Total	861	100

Several statistical analyzes were performed to ensure the validity and reliability of the research, as well as to test our hypotheses. First of all, the accuracy of the research instrument was checked. As the questionnaire items were adjusted based on the existing literature, the correctness of the content was ensured. It was decided that the application of the Kano model will illustrate customer satisfaction with the image of the company in social media. The Kano model allows to examine the dependence on the development of a product or its service, features and the level of customer satisfaction [53]. Using the Kano model, it can be shown that not all product elements are similarly important from the point of view of customers [54, 55]. Noriaki Kano divided the attributes into six groups [53,56]:

- The "must-be" or "must-have" attributes that must be included in the product and service as a standard file. The lack of these functions may lead to the loss of the client [57]. In case of e-commerce, one of the mandatory features is access to complete contact information about the company. This is not only a good practice, but also an element that is frequently checked by customers. Nobody wants to buy goods from an anonymous source.

- "One-dimensional" attributes are most important to customer satisfaction with a product or service. It is very important that the fulfilment of this type of attribute is almost proportional to the level of customer satisfaction, which may translate into the frequency of purchases or the use of services. Problems with meeting the "one-dimensional" attributes reduce the number of satisfied customers. However, this doesn't progress as quickly as with the "must-be" attributes. For example, sorting options or the number of

filters a customer can select are a "one-dimensional" feature. The more filters, the easier and faster the customer can make a choice.

- "Attractive" attributes must attract the customer to the product or service. These attributes are short-term and can be turned into "must-be" attributes or disappear. Poorly designed "attractive" attributes may go unnoticed. Their absence does not affect the customer's satisfaction, but it may lead to his lack of interest (if the customer is susceptible to the company's offer that is constantly making it more attractive). When it comes to e-commerce, these can be all kinds of promotions that will convince customers to buy in a given e-store due to the lower price, much higher in other stores.

- Inverted attributes occur when the client prefers no attribute at all [57]. More of these attributes in a service or product lead to greater customer dissatisfaction. In the case of e-commerce, customers often do not want to pay for their orders before they are delivered. They prefer to do this when the courier brings the package home.

- Indifferent attributes do not affect customer satisfaction [53]. It may be, for example, the color of the website, which does not affect the functioning of the website or the content of the information. It is important for the customer to buy what he wants for the right price and to have the right information, and it doesn't matter if the site is green or blue.

- The "contradiction" is with the Kano method. It is an attribute that has been assessed as functional or non-functional in both question forms [54].

The Kano method was used in the form of a special type of questionnaire [4]. Based on the statements about the quality of the profiles, a questionnaire was prepared containing positive and negative versions of the statements relating to the attributes of the company's image in social media [58, 59]. The company's customers indicated in the survey what features must be taken into account and which will have an impact on the level of customer satisfaction and the perception of the company's image.

3. Results

Based on previous studies presented in many scientific papers, the factors that occurred most often were identified as recurring [60–63], i.e. factors frequently referred to by researchers and possibly by customers [64]. Information on the features determining the quality of the image in social media was collected [27] by analyzing the extensive literature on this subject. By analyzing this article, as well as other works [33,65–67], it was possible to identify a group of factors that are most often described as those that most significantly affect customer satisfaction [40,68], which includes social media, their applications, operation and content, customer relations, reliability and options for refunds and payments, use of codes and coupons [55]. Among the image of an enterprise in social media, factors related to sustainable development, presented in [3.69–71], include, inter alia, no paper coupons, liquidation of waste, greater access to information, access to goods and services, wide offers [72]. These factors helped to create the survey on which the research was based.

This stage of research is primarily a questionnaire describing the potential attributes that should characterize the image in social media, the media itself and the threats it carries [73]. The respondents were asked to rate the attributes when they occur (positive attributes) and when they do not occur (negative attributes). Based on the responses, it was possible to indicate features that must be included, but also those features that affect the overall customer satisfaction (one-dimensional). The list of positives from the Kano questionnaire is presented in Table 1. The assessment of these features (answers to these questions) was based on the following scale: (a) "I like it", (b) "It must be like this", (c) "I don't mind it", (d) "I can take it", (e) "I don't like it."

Table 1. This is a table. Tables should be placed in the main text near to the first time they are cited.

Attribute	Attributes (Positive Attributes)

Number	
1	A company with a good image should have a well-organized and transparent website.
2	The company should have reliable pages on major social media.
3	Information on social media should be up-to-date and complete.
4	Offers on social media should be updated frequently.
5	Categories and tabs in media should be legible and logical.
6	The regulations of the new online store should be accessible and understandable.
7	Social media stores should include a detailed description of the purchasing process.
8	All customer data provided via social media when placing an order should be secure and private.
9	The customer should be able to choose between different payment methods.
10	The customer should have access to the support services offered by the company on social media.
11	The customer should be able to easily contact the technical support, e.g. via chat, to obtain additional information about the products.
12	The customer should be able to easily contact the order service in order to clarify any doubts.
13	The customer should be able to cancel the transaction before ordering the checkout process.
14	Deliveries should be made in accordance with the conditions specified in the regulations.
15	Profiles present content in several languages
16	The customer can be sure that the profile is confirmed and professional
17	The profile allows logged in users to participate in contests
18	The profile allows logged in users to use a discount code offered in social media.
19	The social media profile provides free webinars
20	Regular profile maintenance gives customers the confidence that their actions are credible.
21	Taking care of the security of profiles prevents attacks on customers.
22	Loyalty programs should be introduced on the social media profile.
23	Social profiles give the opportunity to engage customers in the company's activities for the local community.

[1] Tables may have a footer.

The analysis of the results was based on the individual types of attributes included in the questionnaire, using the comparisons presented in Table 2. Then it was checked which type of feature was indicated most often.

Table 2. Types of attributes in the Kano method [57].

		Negative				
Positive	I like it	Q	A	A	A	O
	That is the way it has to be	R	I	I	I	M
	I do not mind	R	I	I	I	M
	I can put up with it	R	I	I	I	M
	I do not like it	R	R	R	R	Q

Notes: A—attractive; O—one-dimensional; M—must-have; I—customer was indierent to the attribute; R—customer did not like the attribute; Q—there was a contradiction: customers both wanted the attribute to occur and not to occur.

The rating given by customers in the Kano questionnaire can be used to calculate customer satisfaction and dissatisfaction rates. The satisfaction index was in the range (0, 1). If the value was close to 1, customer satisfaction was very high. If the value was close to 0, customer dissatisfaction was very high. Indexes can be interpreted graphically. For this purpose, a two-dimensional matrix was created in which the X axis was an indicator of dissatisfaction with individual attributes into absolute ones, and the Y axis was an indicator of satisfaction. The results were presented on the basis of Table 3.

Table 3. Interpretation method [79].

Distribution of Response	XY Pair	Location of the Point on the Graph
All attractive	0 1	Top left corner
All one-dimensional	1 1	Top right corner
Evenly split between attractive and one-dimensional	0,5 1	Middle of the top, halfway between attractive and one-dimensional—point A
All must-have	1 0	Bottom right corner
Evenly split between one-dimensional and must-have	1 0,5	Middle of right edge, halfway between one-dimensional and must-have—point B
All indierent	0 0	Bottom left corner
Evenly split between must-have and indi_erent	0,5 0	Middle of bottom edge, halfway between must-have and indierent—point C
Evenly split between indi_erent and attractive	0 0,5	Middle of left edge, halfway between indi_erent and attractive—point D
Evenly split among attractive, one-dimensional, must-have, and indierent	0,5 0,5	Exact middle of graph—point E
Evenly split between attractive and must-have	0,5 0,5	Exact middle of graph, halfway between attractive and must-have, without an influence of one-dimensional or indierent—point E
Evenly split among attractive, one-dimensional, and must-have	0,67 0,67	Equally spaced between attractive and must-have, but influenced by one-dimensional—point F

The responses of individual respondents obtained during the research were compared in pairs (positive and negative attributes) in accordance with the assumptions presented in Table 3. The type of feature that occurred most often and the demonstrated indicators of satisfaction and dissatisfaction for the individual were calculated. Attribute numbers corresponded to the numbers and names of the attributes from Table 1. The comparison of the results obtained with the Kano model is presented in Table 4.

Table 4. Kano questionnaire results [own study].

AttributeNumber	Assessment of the Attribute	Satisfaction Index	Dissatisfaction index
1	M	0.82	−0.31
2	A	0.65	−0.75
3	M	0.25	−0.85
4	M	0.57	−0.89
5	O	0.67	−0.85

6	O	0.76	−0.78
7	A	0.66	−0.50
8	A	0.68	−0.59
9	M	0.34	−0.84
10	O	0.40	-0,80
11	I	0.31	−0.93
12	A	0.20	−0.92
13	A	0.32	−0.53
14	O	0.89	−0.68
15	R	0.46	−0.65
16	M	0.11	−0.96
17	M	0.29	−0.93
18	M	0.36	−0.55
19	O	0.23	−0.30
20	O	0.62	−0.70
21	O	0.12	−0.78
22	A	0.20	-0,88
23	A	0,17	-0,57

Rysunek prezentuje prezentację graficzną wyników otrzymanych w tabeli 4.

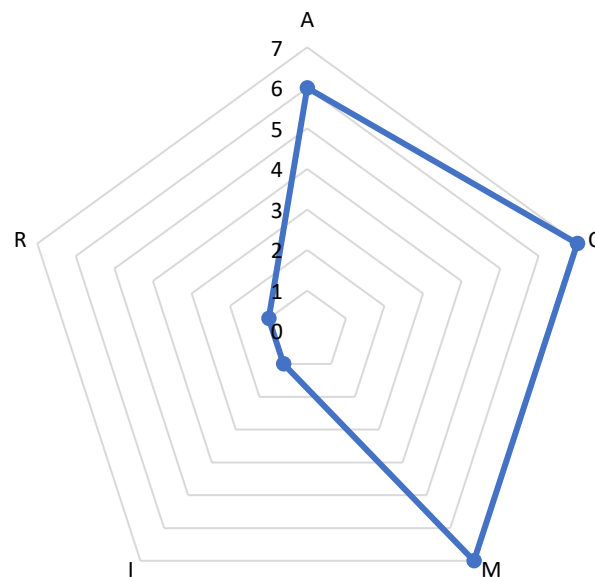The figure presents a graphical presentation of the results obtained in Table 4.

Figure 2. List of attribute types, where: A—attractive; O—one-dimensional; M—must-have; I—indierent; and R—reverse [own study].

When analyzing the results presented in Table 5, it can be seen that the respondents' responses were very diverse. The development of social media in Europe and the widespread access to it have resulted in companies increasingly turning to this solution in order to communicate effectively with customers and thus offer them products and services. Customers are becoming very picky and demanding [74], which is reflected in the results. Most of the attributes of corporate social media, according to customers, are essential functions. Table 5 lists the functions that an enterprise must have, marked with the letter M. The lack of such features means that customers will choose a competitive brand [75].

It can be concluded that the respondents understand the need for sustainable development [76], and the so-called related features were treated by them mainly as indispensable features, i.e. they must be among the attributes of the company's social media [77, 78]. By comparing the results of these studies with previous studies available in the literature, it was possible. It can be seen that the respondents pointed to certain features of company media in terms of sustainable development, which were repeated in other studies, e.g. customer involvement in activities for the benefit of the local community.

4. Discussion

Satisfaction and dissatisfaction indicators for individual attributes allowed us to create a map of attributes and indicate the type of attributes more precisely. This map helped identify the necessary attributes and other types of attributes. The map of the attributes of this research venture is shown in Figure 3.
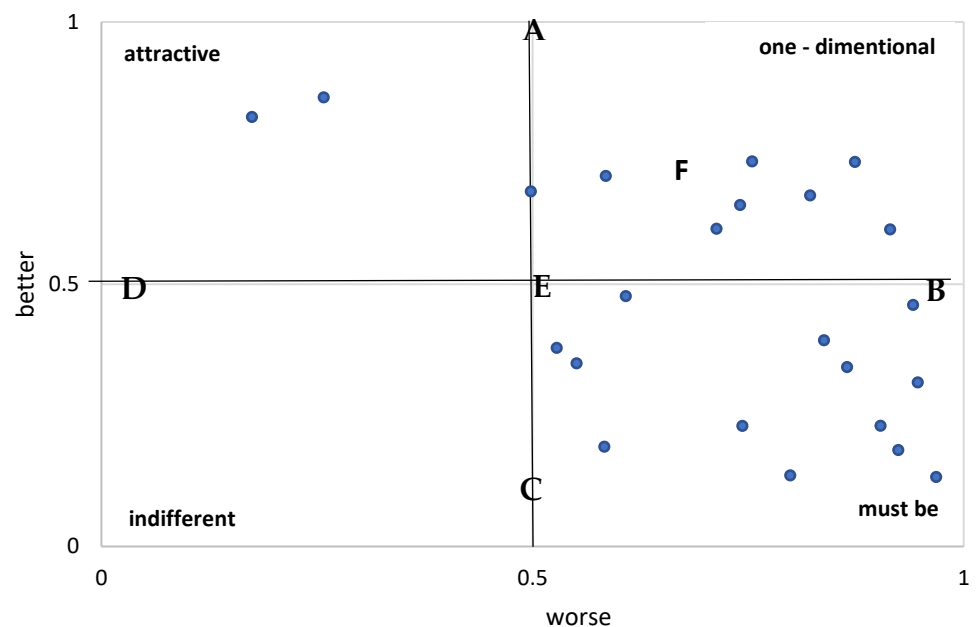

Figure 3. Map of attributes according to the Kano questionnaire [own study].

According to the map shown in Figure 3, you can see that many of the attributes were actually a mix of functions. Most of the points are placed on the right side of the map (high dissatisfaction index), with most of the points in the center of the map (that is, in the middle of the right edge, halfway between the one-dimensional and the must-have, as listed in Table 3). Multiple points were located near the "must-be" point. None of the points were placed in the lower left corner, so-called "neutral".

5. Conclusions

Turbulent environment, fierce competition, developing technology on the market force enterprises to adapt to constantly changing customer requirements. One of the strongest factors of change in enterprises is Revolution 4.0. Among the Industry 4.0 tools, the Internet should be considered in particular. Nowadays, businesses that are not online are less visible to most customers looking for information about them and their goods. Another factor forcing changes in enterprises is the concept of sustainable development.

These changes are aimed at a more rational and efficient management of all resources, which will allow for less pressure and a lower environmental impact. Sustainability derives from the triplebottomline concept, which implies a balance between the three dimensions.

In the case of enterprises' activities in social media, individual dimensions of sustainable development have particular advantages and disadvantages. All three dimensions of sustainability need to be interconnected to deliver both short and long-term benefits, and the social media enterprise strikes a balance between all these dimensions [47].

The article uses a questionnaire for assessing activities based on the research model and the hypotheses as well as the Kano customer satisfaction assessment model to indicate the features of the company's image in social media, taking into account selected assumptions of sustainable development. Thanks to the surveys in which the leaders among fans from Poland and Portugal took part, one-dimensional features were identified that affect the image in a direct and immediate way. It should therefore be emphasized that the respondents are environmentally aware and see the need for the social media of enterprises to operate in accordance with the concept of sustainable development. Moreover, a satisfied and loyal customer is a good source of advertising [79] for a company and an opportunity to build an image in the online world.

These results were communicated to the management of the surveyed companies and discussed, they will also be taken into account when designing further activities for the company's social media. The management agreed that after 1-2 years of functioning after changes in the image activities in social media, the authors could conduct new studies assessing the functioning of the indicated features and check the functioning of the image in social media in the conditions of sustainable development.

The methodology used in the article is very universal. A survey questionnaire and a Kano questionnaire created for research purposes can be used by companies in other industries, to design activities in social media and to assess the quality of their activities and image.

Through this research, this article aims to understand the importance of the quality of a company's social media content, products and services and its relationship to reputation [79]. This article also aimed to contribute to the current literature by identifying the aspects of corporate social media activity that are arguably the most fuelling of corporate reputation growth. The results show that all the analyzed quality elements, namely: safety, simplicity and variety have a positive impact on the perceived quality of the service, thus confirming our first three hypotheses. Moreover, it was hypothesized that the quality of activities in social media would be correlated with the company's reputation, which was confirmed by the analysis. Given that reputation is the perception or public image of a company, it is not directly controlled and therefore difficult to manipulate [80].

Future research should include, for example, a group of respondents to a specific industry and seek to include more objective measures to assess the quality of online electronic activities as well as reputation. Moreover, there are additional elements that may influence the perceived quality and image.

References

1. Al-khateeb, S.; Agarwal, N. Case Studies of Deviance in Social Media. In *Deviance in Social Media and Social Cyber Forensics*; Al-khateeb, Ed.; Springer International Publishing: Cham, 2019; pp 79–94, ISBN 978-3-030-13689-5.

2. Bharadwaj, A.; El Sawy, O.A.; Pavlou, P.A.; Venkatraman, N. Digital Business Strategy: Toward a Next Generation of Insights. *MISQ* **2013**, *37*, 471–482, doi:10.25300/MISQ/2013/37:2.3.

3. Crossler, R.E.; Johnston, A.C.; Lowry, P.B.; Hu, Q.; Warkentin, M.; Baskerville, R. Future directions for behavioral information security research. *Computers & Security* **2013**, *32*, 90–101, doi:10.1016/j.cose.2012.09.010.

4.   Chen, S.-C.; Lin, C.-P. The impact of customer experience and perceived value on sustainable social relationship in blogs: An empirical study. *Technological Forecasting and Social Change* **2015**, *96*, 40–50, doi:10.1016/j.techfore.2014.11.011.

5.   *How to measure anything in cybersecurity risk;* Hubbard, D.W.; Seiersen, R., Eds.; Wiley: Hoboken, New Jersey, 2016, ISBN 9781119162315.

6.   Lee, N. Social Media and Two-Way Street of Total Information Awareness. In *Counterterrorism and cybersecurity*: *Total information awareness*; Lee, N., Ed.; Springer: New York, 2013; pp 83–97, ISBN 978-1-4614-7204-9.

7.   *Social Media for Government*: *Implementing and Managing a Participatory, Open, and Collaborative Government*; Khan, G.F., Ed.; Springer: New York, 2017, ISBN 978-981-10-2940-0.

8.   *Cybersecurity in humanities and social sciences*: *A research methods approach*; Loiseau, H.; Ventre, D.; Aden, H., Eds.; ISTE, Ltd; Wiley: London, UK, Hoboken, NJ, 2020, ISBN 9781119777588.

9.   Singh, R.; Kaur, R. Sentiment Analysis on Social Media and Online Review. *IJCA* **2015**, *121*, 44–48, doi:10.5120/21660-5072.

10.   *Social media in human resources management;* Bondarouk, T.; Olivas-Luján, M.R., Eds.; Emerald: Bingley, 2013, ISBN 978-1-78190-900-3.

11.   Lee, N. *Facebook Nation*: *Total Information Awareness;* Springer New York; Imprint; Springer: New York, NY, 2013.

12.   Kaplan, A.M.; Haenlein, M. Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons* **2010**, *53*, 59–68, doi:10.1016/j.bushor.2009.09.003.

13.   Lande, D.; Puchkov, O.; Subach, I. System for analysing of big data on cybersecurity issues from social media. *ITS* **2020**, *8*, 4–18, doi:10.20535/2411-1031.2020.8.1.217993.

14.   Li, L.; He, W.; Xu, L.; Ash, I.; Anwar, M.; Yuan, X. Investigating the impact of cybersecurity policy awareness on employees' cybersecurity behavior. *International Journal of Information Management* **2019**, *45*, 13–24, doi:10.1016/j.ijinfomgt.2018.10.017.

15.   Ma, R.; Cherian, J.; Tsai, W.-H.; Sial, M.S.; Hou, L.; Álvarez-Otero, S. The Relationship of Corporate Social Responsibility on Digital Platforms, Electronic Word-of-Mouth, and Consumer-Company Identification: An Application of Social Identity Theory. *Sustainability* **2021**, *13*, 4700, doi:10.3390/su13094700.

16.   Kiforchuk, K. Methods and Techniques of Assessment of the Value Orientations of Social Media Users. *TACS* **2020**, *2*, doi:10.20535/tacs.2664-29132020.1.209476.

17.   T. Madhushani S. Jayasanka; E. Marcus; A. Aberathne. Social media sentiment analysis using machine learning classifiers. *International Journal of Computer Science and Mobile Computing Proceedings of 2012 IEEE / ACM International Conference on Advances in Social Networks Analysis and Mining*.

18.   Yabe, T.; Rao, P.S.C.; Ukkusuri, S.V. Modeling the Influence of Online Social Media Information on Post-Disaster Mobility Decisions. *Sustainability* **2021**, *13*, 5254, doi:10.3390/su13095254.

19.   Tavakolifard, M.; Almeroth, K. Social computing: an intersection of recommender systems, trust/reputation systems, and social networks. *IEEE Network* **2012**, *26*, 53–58, doi:10.1109/MNET.2012.6246753.

20.   Zamir, H. Cybersecurity and Social Media. In *CYBERSECURITY FOR INFORMATION PROFESSIONALS*: *Concepts and applications*; Chang, H.-C., Ed.; Auerbach Publications: BOCA RATON, 2020; pp 153–171, ISBN 9781003042235.

21.   Jost, J.T.; Barberá, P.; Bonneau, R.; Langer, M.; Metzger, M.; Nagler, J.; Sterling, J.; Tucker, J.A. How Social Media Facilitates Political Protest: Information, Motivation, and Social Networks. *Political Psychology* **2018**, *39*, 85–118, doi:10.1111/POPS.12478.

22.   J. W.Treem. Social media use in organizations: Exploring the affordances of visibility, editability, persistence, and association. *Communication Yearbook* **2012**, *36*, 143.

23. *Handbook of social media management*: *Value chain and business models in changing media markets*; Friedrichsen, M.; Mühl-Benninghaus, W., Eds.; Springer Berlin Heidelberg; Imprint; Springer: Berlin, Heidelberg, 2013, ISBN 978-3-642-28896-8.

24. *Harnessing social media as a knowledge management tool*; Chugh, R., Ed.; IGI Global: Hershey, Pennsylvania (701 E. Chocolate Avenue, Hershey, PA 17033, USA), 2017, ISBN 9781522504955.

25. Allcott, H.; Gentzkow, M. Social Media and Fake News in the 2016 Election. *Journal of Economic Perspectives* **2017**, *31*, 211–236, doi:10.1257/jep.31.2.211.

26. Why Cybersecurity Management Is Important1 Computing and Culture Shock. In *The Complete Guide to Cybersecurity Risks and Controls,* 1st edition; Kohnke, A., Shoemaker, D., Sigler, K., Eds.; Auerbach Publications, 2016; pp 18–43, ISBN 9780429183935.

27. A. J. Reagan; B. Tivnan; J. Williams; C. Danforth; P. Dodds. Benchmarking sentiment analysis methods for large-scale texts: A case for using continuum-scored words and word shift graphs. *ArXiv* **2015**.

28. Donalds, C.; Osei-Bryson, K.-M. Cybersecurity compliance behavior: Exploring the influences of individual decision style and other antecedents. *International Journal of Information Management* **2020**, *51*, 102056, doi:10.1016/j.ijinfomgt.2019.102056.

29. Friedrichsen, M.; Mühl-Benninghaus, W. The Social Media Management Chain, How Social Media Influences Traditional Media. In *Handbook of social media management*: *Value chain and business models in changing media markets*; Friedrichsen, M., Mühl-Benninghaus, W., Eds.; Springer Berlin Heidelberg; Imprint; Springer: Berlin, Heidelberg, 2013; pp 3–6, ISBN 978-3-642-28896-8.

30. *New Security Paradigms Workshop 2009*: *Proceedings : September 8-11, 2009, the Queen's College, University of Oxford, UK*; Heydari, M.H.; Ford, R.; Somayaji, A., Eds. Proceedings of the 2009 workshop on New security paradigms workshop - NSPW '09; Association for Computing Machinery: New York, N.Y., 2009.

31. Social Media Monitoring. In *The indestructible brand*: *Crisis management in the age of social media*; Sharma, V., Kharas, H., Eds.; SAGE: Los Angeles, 2017; pp 86–98, ISBN 9789386446794.

32. Galen Panger. Emotion in Social Media **2017**.

33. Sultan, M.T.; Sharmin, F.; Badulescu, A.; Gavrilut, D.; Xue, K. Social Media-Based Content towards Image Formation: A New Approach to the Selection of Sustainable Destinations. *Sustainability* **2021**, *13*, 4241, doi:10.3390/su13084241.

34. J. Pennebaker; Ryan L. Boyd; K. Jordan; Kate G. Blackburn. The Development and Psychometric Properties of LIWC2015 **2015**.

35. Patnayakuni, N.; Patnayakuni, R.; Gupta, J.N.D. Towards a Model of Social Media Impacts on Cybersecurity Knowledge Transfer. In *Harnessing social media as a knowledge management tool*; Chugh, R., Ed.; IGI Global: Hershey, Pennsylvania (701 E. Chocolate Avenue, Hershey, PA 17033, USA), 2017; pp 249–271, ISBN 9781522504955.

36. Bakker, M.; Leenders, R.T.; Gabbay, S.M.; Kratzer, J.; van Engelen, J.M. Is trust really social capital? Knowledge sharing in product development projects. *The Learning Organization* **2006**, *13*, 594–605, doi:10.1108/09696470610705479.

37. Chou, S.-Y.; Shen, G.C.; Chiu, H.-C.; Chou, Y.-T. Multichannel service providers' strategy: Understanding customers' switching and free-riding behavior. *Journal of Business Research* **2016**, *69*, 2226–2232, doi:10.1016/j.jbusres.2015.12.034.

38. Warkentin, M.; Johnston, A.C.; Shropshire, J. The influence of the informal social learning environment on information privacy policy compliance efficacy and intention. *European Journal of Information Systems* **2011**, *20*, 267–284, doi:10.1057/ejis.2010.72.

39. *CIKM 2017*: *Proceedings of the 2017 ACM Conference on Information and Knowledge Management : November 6-10, 2017 : Singapore;* Lim, E.-P.; Winslett, M.; Sanderson, M.; Fu, A.; Sun, J.; Culpepper, S.; Lo, E.; Ho, J.; Donato, D.; Agrawal, R.; Zheng, Y.; Castillo, C.; Sun, A.; Tseng, V.S.; Li, C., Eds. CIKM '17: ACM Conference on Information and Knowledge Management, Singapore Singapore, 06 11 2017 10 11 2017; Association for Computing Machinery: New York, NY, 2017.

40. Opgenhaffen, M.; d'Haenens, L. Managing Social Media Use: Whither Social Media Guidelines in News Organizations? *International Journal on Media Management* **2015**, *17*, 201–216, doi:10.1080/14241277.2015.1107570.

41. Patnayakuni, N.; Patnayakuni, R.; Gupta, J.N.D. Towards a Model of Social Media Impacts on Cybersecurity Knowledge Transfer. In *Cyber security and threats*: *Concepts, methodologies, tools, and applications*; Management Association, I.R., Ed.; IGI Global, Information Science Reference (an imprint of IGI Global): Hershey, PA, 2018; pp 521–543, ISBN 9781522556343.

42. Kietzmann, J.H.; Silvestre, B.S.; McCarthy, I.P.; Pitt, L.F. Unpacking the social media phenomenon: towards a research agenda. *J. Public Affairs* **2012**, *12*, 109–119, doi:10.1002/pa.1412.

43. S.Das. The effect of social influence on security sensitivity. *Proc. SOUPS* **2014**, *Vol. 14*.

44. Devlin, J.F.; Ennew, C.T.; Sekhon, H.S.; Roy, S.K. Trust in financial services: Retrospect and prospect. *J Financ Serv Mark* **2015**, *20*, 234–245, doi:10.1057/fsm.2015.21.

45. E.Rader. Stories as informal lessons about security. *Proceedings of the Eighth Symposium on Usable Privacy and Security* **2012**, 6.

46. A. Agarwal; Boyi Xie; Ilia Vovsha; Owen Rambow; Rebecca J. Passonneau. Sentiment Analysis of Twitter Data **2011**.

47. Chehri, A.; Fofana, I.; Yang, X. Security Risk Modeling in Smart Grid Critical Infrastructures in the Era of Big Data and Artificial Intelligence. *Sustainability* **2021**, *13*, 3196, doi:10.3390/su13063196.

48. *The cyber risk handbook : creating and measuring effective cybersecurity capabilities;* Antonucci, D., Ed.; Wiley: Hoboken, NJ, USA, uuuu-uuuu, ISBN 9781119309741.

49. Cybersecurity Risk Management for the Enterprise. In *How to measure anything in cybersecurity risk*; Hubbard, D.W., Seiersen, R., Eds.; Wiley: Hoboken, New Jersey, 2016; pp 197–198, ISBN 9781119162315.

50. Ling, C. Information Asset Management for Cyber. In *The cyber risk handbook : creating and measuring effective cybersecurity capabilities*; Antonucci, D., Ed.; Wiley: Hoboken, NJ, USA, uuuu-uuuu; pp 281–288, ISBN 9781119309741.

51. Khandpur, R.P.; Ji, T.; Jan, S.; Wang, G.; Lu, C.-T.; Ramakrishnan, N. Crowdsourcing Cybersecurity. In *CIKM 2017*, Proceedings of the 2017 ACM Conference on Information and Knowledge Management : November 6-10, 2017 : Singapore. CIKM '17: ACM Conference on Information and Knowledge Management, Singapore Singapore, 06 11 2017 10 11 2017; Lim, E.-P., Winslett, M., Sanderson, M., Fu, A., Sun, J., Culpepper, S., Lo, E., Ho, J., Donato, D., Agrawal, R., Zheng, Y., Castillo, C., Sun, A., Tseng, V.S., Li, C., Eds.; Association for Computing Machinery: New York, NY, 2017; pp 1049–1057, ISBN 9781450349185.

52. Kietzmann, J.H.; Hermkens, K.; McCarthy, I.P.; Silvestre, B.S. Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons* **2011**, *54*, 241–251, doi:10.1016/j.bushor.2011.01.005.

53. Bayus, B.L. Kano Model of Customer Satisfaction. In *Wiley international encyclopedia of marketing*; Sheth, J.N., Malhotra, N.K., Eds.; Wiley: Chichester, 2011, ISBN 9781405161787.

54. Turisová, R. A GENERALIZATION OF TRADITIONAL KANO MODEL FOR CUSTOMER REQUIREMENTS ANALYSIS. *QIP Journal* **2015**, *19*, doi:10.12776/qip.v19i1.407.

55. Choi, Y.; Di Gao. The Role of Intermediation in the Governance of Sustainable Chinese Web Marketing. *Sustainability* **2014**, *6*, 4102–4118, doi:10.3390/su6074102.

56. Min, H.; Yun, J.; Geum, Y. Analyzing Dynamic Change in Customer Requirements: An Approach Using Review-Based Kano Analysis. *Sustainability* **2018**, *10*, 746, doi:10.3390/su10030746.

57. Kano Model. In *Techniques and sample outputs that drive business excellence*; Harrington, H.J., Ed.; CRC Press: [Place of publication not identified], 2017; pp 146–149, ISBN 9780429254451.

58. Župič, I. Social Media as Enabler of Crowdsourcing. In *Social media in human resources management*; Bondarouk, T., Olivas-Luján, M.R., Eds.; Emerald: Bingley, 2013; pp 243–255, ISBN 978-1-78190-900-3.

59. Liang; Xue. Avoidance of Information Technology Threats: A Theoretical Perspective. *MIS Quarterly* **2009**, *33*, 71, doi:10.2307/20650279.

60. Jin, Y.; Park, Y.; Yu, J. An Assessment Model for Evaluating Asymmetric Effects of Attribute-Level Performance on Satisfaction. *Sustainability* **2019**, *11*, 4323, doi:10.3390/su11164323.

61. Johnston, A.C.; Warkentin, M.; Siponen, M. An Enhanced Fear Appeal Rhetorical Framework: Leveraging Threats to the Human Asset Through Sanctioning Rhetoric. *MISQ* **2015**, *39*, 113–134, doi:10.25300/MISQ/2015/39.1.06.

62. Rianmora, S.; Werawatganon, S. Applying Quality Function Deployment in Open Innovation Engineering. *JOItmC* **2021**, *7*, 26, doi:10.3390/joitmc7010026.

63. Rolland, S.; Freeman, I. A new measure of e-service quality in France. *Intl J of Retail & Distrib Mgt* **2010**, *38*, 497–517, doi:10.1108/09590551011052106.

64. Szmelter, A.; Woźniak, H. BUSINESS MODEL EVOLUTION – THE LOGISTICAL ASPECT OF CHANGES IN GLOBAL AUTOMOTIVE INDUSTRY. *Torun Business Review* **2017**, *15*, doi:10.19197/tbr.v15i4.59.

65. *Wiley international encyclopedia of marketing*; Sheth, J.N.; Malhotra, N.K., Eds.; Wiley: Chichester, 2011, ISBN 9781405161787.

66. Wu, J.; Wang, Y.; Zhang, R.; Cai, J. An Approach to Discovering Product/Service Improvement Priorities: Using Dynamic Importance-Performance Analysis. *Sustainability* **2018**, *10*, 3564, doi:10.3390/su10103564.

67. Ozanne, L.K.; Ballantine, P.W. Sharing as a form of anti-consumption? An examination of toy library users. *Journal of Consumer Behaviour* **2010**, *9*, 485–498, doi:10.1002/cb.334.

68. Schepers, P.; van den Berg, P.T. Social Factors of Work-Environment Creativity. *J Bus Psychol* **2007**, *21*, 407–428, doi:10.1007/s10869-006-9035-4.

69. Khan, G.F. Social Media Risks Management. In *Social Media for Government*: *Implementing and Managing a Participatory, Open, and Collaborative Government*; Khan, G.F., Ed.; Springer: New York, 2017; pp 135–151, ISBN 978-981-10-2940-0.

70. Lee; Chen; Lin; Li; Zhao. Developing a Quick Response Product Configuration System under Industry 4.0 Based on Customer Requirement Modelling and Optimization Method. *Applied Sciences* **2019**, *9*, 5004, doi:10.3390/app9235004.

71. *Techniques and sample outputs that drive business excellence*; Harrington, H.J., Ed.; CRC Press: [Place of publication not identified], 2017, ISBN 9780429254451.

72. Wang, S.; Noe, R.A. Knowledge sharing: A review and directions for future research. *Human Resource Management Review* **2010**, *20*, 115–131, doi:10.1016/j.hrmr.2009.10.001.

73. Rajamäki, J.; Katos, V. Information Sharing Models for Early Warning Systems of Cybersecurity Intelligence. *ISIJ* **2020**, *46*, 198–214, doi:10.11610/isij.4614.

74. Tsurkan, V. METHOD OF INFORMATION SECURITY MANAGEMENT SYSTEMS FUNCTIONAL ANALYSIS. *Cybersecurity* **2020**, *4*, 192–201, doi:10.28925/2663-4023.2020.8.192201.

75. Liang, H.; Xue, Y. Understanding Security Behaviors in Personal Computer Usage: A Threat Avoidance Perspective. *JAIS* **2010**, *11*, 394–413, doi:10.17705/1jais.00232.

76. Johnston; Warkentin. Fear Appeals and Information Security Behaviors: An Empirical Study. *MIS Quarterly* **2010**, *34*, 549, doi:10.2307/25750691.

77. The "Science" of Cybersecurity in the Human and Social Sciences. In *Cybersecurity in humanities and social sciences*: *A research methods approach*; Loiseau, H., Ventre, D., Aden, H., Eds.; ISTE, Ltd; Wiley: London, UK, Hoboken, NJ, 2020; pp 1–23, ISBN 9781119777588.

78. Qualitative Document Analysis for Cybersecurity and Information Warfare Research. In *Cybersecurity in humanities and social sciences*: *A research methods approach*; Loiseau, H., Ventre, D., Aden, H., Eds.; ISTE, Ltd; Wiley: London, UK, Hoboken, NJ, 2020; pp 153–183, ISBN 9781119777588.

79. Fassnacht, M.; Koese, I. Quality of Electronic Services. *Journal of Service Research* **2006**, *9*, 19–37, doi:10.1177/1094670506289531.

80. Zhang, W.; Gao, F. An Improvement to Naive Bayes for Text Classification. *Procedia Engineering* **2011**, *15*, 2160–2164, doi:10.1016/J.PROENG.2011.08.404.