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Application of Cluster Analysis in Marketing Communications in Small and Medium-Sized Enterprises: An Empirical Study in the Slovak Republic

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Abstract: Creating an effective marketing strategy according to current trends is a key process needed to achieve sustainable growth that can result in attracting a great number of existing as well as potential customers. Moreover, an enterprise's success is affected by the aforementioned process. The aim of the paper is to determine the clusters of small and medium-sized enterprises operating in the Slovak Republic and the use of marketing communication tools in the future. The research into marketing communications and customer relationship management (CRM) building in companies was carried out in Slovakia in the years 2017 and 2018. In total, 1,009 small and medium-sized enterprises from Slovakia participated in the research. Following a K-means clustering algorithm, three clusters were determined. Descriptive statistics, cluster analysis using K-means clustering, and an analysis of variance (ANOVA) were used to identify no statistically significant difference in terms of the size of enterprises.

Keywords: SMEs; marketing communications; marketing communication tools; CRM; customer database; cluster analysis

1. Introduction and Background

Small and medium-sized enterprises (SMEs) are considered the key economic drivers in Europe [1]. Significant contribution to gross domestic product, increasing innovative activities, launching a new product in a flexible way, creating jobs, retaining existing jobs and generating overall social growth can be observed [2–10]. In Slovakia, SMEs have a key role in boosting productivity. More than a half of the active labour force contributing to a large extent to the added value is hired by SMEs [11]. SMEs make up 99.9% of the total number of enterprises in Slovakia; 96.9% of them are micro-enterprises (with less than 10 employees), 2.5% are small enterprises and 0.5% are medium-sized enterprises. In the knowledge economy, innovation ability as well as the sustainability of business processes are key factors for enterprises thriving and withstanding the fierce market competition [12–15]. The business activities of SMEs are affected by the growing trend of globalization putting the pressure on businesses in order to develop effective strategies to succeed in a highly competitive environment [16–19]. In this context, the business strategies of modern enterprises are aimed at achieving sustainable processes [20,21].

Since the customer relationship management is based on the fact that customer is the main source of enterprise revenue, finding customers, attracting them, meeting their needs, wishes and interests are the keys to sustainable growth and subsequent success [22–32]. Marketing communications are becoming an important part of strategic business management in achieving sustainable development [33–36]. On one hand, it is used to inform employees about performances, to explain the properties, highlight the benefits, quality, value, the use. On the other hand, it provides ability to listen, propose consumers' motions and demands, and deal with them appropriately [37,38].

The traditional mix of marketing communications consisting of advertising, public relations, sales promotion and personal sales is most often used for communication with the customer during the pre-buy, purchase and after-purchase period [39–42]. Advertisements are the most commonly used and most popular marketing communication tools delivering important messages to a large group of consumers faster than any other form of marketing communications [43–45]. While launching a product or promoting products with low consumer interest or almost no interest due to the lack of information or low awareness, using public relations has proven to be useful [46,47]. The marketing communication tool is used in particular because of its huge impact on public opinion. Much lower costs in comparison to standard advertising can be considered a further reason [48]. The number of customers can be increased as well as the particular service being supported by sales promotion. The aim of impersonal communication is to encourage the customer to try to use a particular product or service with temporary benefits or rewards [49]. When the advertising seems to be ineffective, personal sales are used as a more demanding form of promotion by providing information, showing, building long-term relationships, or by persuading certain members of the public [50,51].

New technology developments result in the use new, modern tools of marketing communications [52–55]. Computers, the Internet, mobile phones, radio, television and various types of game consoles are used as communication channels to promote products in the area of digital marketing [56–58]. The growing importance of mobile marketing is caused by mobile phone penetration. Any marketing activity can be carried out by customers by means of their personal mobile devices [59,60]. Marketing activities are performed through wireless mobile technology using services such as Short Message Service (SMS), Multimedia Messaging Service (MMS), Wireless Application Protocol (WAP), and third-generation network capabilities [61,62]. Maximum publicity with minimal costs can be achieved through guerrilla marketing highlighting the sensation (unique, original idea proving courage, joke and innovative thinking) not bothering the target customers and, moreover, not harming the public [63–65]. Ambient, i.e., non-standard, alternative media, particularly outdoor media including public transport, benches, bus stops, litter bins, public lighting pillars, public space, shop or restaurant interiors, are used to attract attention of customers [66,67]. Viral marketing when customers provide information about the product, service or website has become very popular as well [67–69]. Event marketing is used in order to build relationships with suppliers, clients and own employees. Organizers of events (concerts and festivals) try to come up with new ideas, beat competitors and attract the customers [58,67]. Product placement, selling, sponsorship, exhibitions, corporate identity, packing, and point-of-sale merchandising are examples of advanced marketing communications [48,70,71].

New opportunities to provide information in a quickly accessible form have been available because of new technology development [72–74]. Consequently, consumers are more demanding, knowledgeable and well informed [75]. They can choose a product taking into account their requirements in terms of price, nutrition, function or value for money, etc. Emphasis is placed not only on the properties, price, quality and delivery conditions, but also on range of sales and after-sales services [76–79]. Increasing customer diversity results in a great variety of new communication tools being implemented [80–84]. Creating an effective marketing strategy according to current trends is a key process needed to achieve sustainable growth that can result in attracting a great number of existing as well as potential customers. Moreover, enterprise success is affected by the aforementioned process as well [85–92]. The introduction of the intelligent system known as Industry 4.0 requires enterprises to adapt to new market demands. Fundamental changes in technological developments are reflected

in marketing promotion through a form of new communication and virtual channels. Sustainability of SMEs implies a greater use of progressive forms of marketing communications and especially e-marketing tools [93,94]. From this point of view, the attention of researchers in Slovakia is mainly focused on the use, conditions and research on the effectiveness of these electronic forms of marketing communication. Pollák and Dorčák [95] identified the basic prerequisites for the effective use of the Facebook social networking site as a platform for marketing communications for SMEs in Slovakia. Similarly, Hudák et al. [96] in their study tested the marketing elements of an email and provided recommendations for creating an effective marketing email. Several authors mention the results of research studies into specific elements of the Internet and mobile marketing communications [97–99]. In terms of research on applied marketing communications in Slovakia, the results are presented in specific areas such as tourism [100,101], environmental protection [102,103], higher education [104,105], the hotel industry, and others. In general, there is a lack of research focusing on SMEs in Slovakia.

The aim of the paper is to determine the clusters of SMEs operating in the Slovak Republic according to use of the marketing communication tools (current use and plans for future). Uniqueness of the research lies in enhancing the knowledge by looking not only at the current use of marketing communication tools in the environment of small and medium-sized enterprises in Slovakia, but also by viewing the future of the use of marketing communication tools. The classification into clusters brings a new dimension because clusters are created according to the current and planned future use of marketing communication tools. These clusters are then tested for differences in multiple attributes such as enterprise size, majority ownership, territorial scope of marketing activities, the use of an agency to implement marketing programs, the creation of customer database, and the use of a customer relationship management (CRM) system.

2. Materials and Methods

The research was focused on marketing communications and CRM building in companies in Slovakia. The research was carried out over the course of the years 2017 and 2018. Representatives of selected companies, responsible for the decision-making process in marketing management and marketing communications, participated in the research. When selecting the respondents, a proportional stratified sampling method was used (regarding the size, location, sector, legal form, major business owner). Business entities registered with the Infostat Company in the Slovak Republic in 2017 were considered the sampling unit. The questionnaire was sent to 1600 selected SMEs by an e-mail or by mail directly to the address of the headquarters or they were addressed personally. At the end of 2017, 257 questionnaires were accepted and 752 questionnaires from SMEs were collected at the beginning of the year 2018. The total number of SMEs filling the questionnaires correctly was 1009 (see Table 1). The sampling unit is presented in Table 1. The response rate was 63%.

Table 1. Description of sampling unit.

Type of Enterprise	Frequency	Percent	Valid Percent	Cumulative Percent
Small enterprise	869	86.10	86.10	86.10
Medium-sized enterprise	140	13.90	13.90	100.00
Total	1009	100.00	100.00	

Source: Authors' compilation.

The questionnaire consisted of 32 questions aimed at analysing the state-of-the-art of the use of marketing communication mix elements in the enterprises. Furthermore, attitudes towards applying new elements of marketing communications and new media as well as towards the current trends were determined following the questionnaire. Its aim was to identify possible changes in the use of particular elements of the marketing communication mix. Enquiries relating to the creation and use of databases, the implementation of CRM systems, the awareness of the concept of integrated marketing communications and its application in studied enterprises were those of great importance as well. For

the purpose of this paper, data associated with the use of selected marketing communication tools such as television, radio, print media, point of sales, telephone, mobile, the Internet, cinema and other progressive forms were gathered.

Data were processed using basic descriptive statistics (absolute and relative frequency, arithmetic mean). Subsequently, the cluster analysis of the K-means cluster in SPSS statistics was used to identify clusters. Determining empirical types, segments, and biological clusters is based on identifying sub-clusters with similar vector variable profiles. The procedure follows the Euclidean distance matrices between rows [106]. The aim of the analysis—to iterate and classify—was selected in order to specify SME groups in the Slovak Republic according to the applied marketing communication tools (variables). Since this method is not invariant to the order of cases, four different clustering solutions (via randomly generated order of cases RU1, RU2, RU3 and RU4 using SPSS statistical program) have been tested in order to obtain appropriate results. Following number of resulting clusters—3, 4, 5, and 6 were also tested. Subsequently, the resulting alternative cluster results were evaluated in terms of composition and preferences in using the marketing communication tools. the option with four resulting clusters in the random arrangement of RU2 presented in Table 2 seems to be the best. A small group of nine cases (Cluster 3), completely different from the total set, are included in the resulting clusters. These cases of small groups are not included in the further analysis [106].

Table 2. Number of cases in each cluster.

Cluster	Small Enterprise	Medium-Sized Enterprise	Row Sums
1 cluster			21.90%
Absolute frequency	187	34	221
Relative frequency	84.60%	15.40%	
2 cluster			19.03%
Absolute frequency	156	36	192
Relative frequency	81.30%	18.80%	
3 cluster			0.89%
Absolute frequency	9	0	9
Relative frequency	0.89%	0.00%	
4 cluster			58.18%
Absolute frequency	517	70	578
Relative frequency	88.10%	11.90%	
Total absolute frequency	869	140	1009
Total relative frequency	86.10%	13.90%	100.00%

Source: Authors' compilation.

Differences in the profiles of created clusters are presented in Table 3. The distance between Cluster 2 and Clusters 3 and 4 is the greatest one. The minimum difference is between Cluster 1 and Cluster 4 (i.e., 2.02 times less than between 2 and 4).

Table 3. Distances between final clusters.

Cluster	1	2	3	4
1		6.037	7.281	4.467
2	-		10.172	9.063
3	-	-		7.451
4	symmetric	-	-	

Source: Authors' compilation.

Descriptive statistics were used to analyse the resulting clusters. The correlation between formed clusters is tested using analysis of variance (ANOVA). The following hypothesis was determined:

H1: SMEs representing individual clusters (based on the use of marketing communication tools and their intended use) in terms of selected attributes (enterprise size, majority ownership, territorial scope of marketing activities, agency used in marketing programs, customer database creation, and CRM use) are equal.

3. Results and Discussion

The data gathered and processed for the needs of SPSS Statistics were subjected to a cluster analysis of the K-means cluster. An alternative with the four resulting clusters with the random sequence of the RU2 cases was selected by comparing the possible results of the created clusters. Subsequently, these results were tested by ANOVA. The results are presented in Table 4. However, the significance of the differences does not make sense theoretically and, therefore, testing the hypotheses dealing with ANOVA averages is not possible especially due to the fact that clusters arise in such a way that the vectors differ as much as possible and the significance of differences is supported this way.

Table 4. The analysis of variance (ANOVA) analysis.

Media	Marketing Communications Form	Cluster		Error		F	Sig.
		Mean Square	df	Mean Square	df		
Television	Classic advertising spots	81.284	3	0.382	1005	212.775	0.000
	Advertising spots with a direct response	61.367	3	0.492	1005	124.701	0.000
	TV program sponsorship	66.569	3	0.248	1005	268.957	0.000
	Interviews with company representatives	46.066	3	0.358	1005	128.587	0.000
	Interviews	40.469	3	0.641	1005	63.130	0.000
	Organizing competitions	96.056	3	0.398	1005	241.057	0.000
	Providing prizes to competitions	127.349	3	0.406	1005	313.769	0.000
	Product placement	72.096	3	0.376	1005	191.822	0.000
	Teleshopping	39.917	3	0.124	1005	321.483	0.000
	Teletext	46.413	3	0.131	1005	353.641	0.000
Radio	Classic advertising spots	116.499	3	0.421	1005	276.409	0.000
	Advertising spots with a direct response	102.672	3	0.307	1005	334.763	0.000
	Program sponsorship	87.123	3	0.268	1005	325.633	0.000
	Interviews with company representatives	51.767	3	0.358	1005	144.610	0.000
	Interviews	95.709	3	0.474	1005	202.050	0.000
	Organizing competitions	75.106	3	0.329	1005	228.165	0.000
	Providing prizes to competitions	124.374	3	0.278	1005	446.874	0.000
	Product placement	59.299	3	0.230	1005	258.327	0.000
Point of sale	Leaflets	40.128	3	0.658	1005	60.958	0.000
	Posters	49.939	3	0.743	1005	67.237	0.000
	Catalogues	54.502	3	0.692	1005	78.755	0.000
	Tasting	61.108	3	0.288	1005	212.157	0.000
	Competitions	100.865	3	0.504	1005	200.223	0.000
	Presentations	51.909	3	0.703	1005	73.891	0.000
Print (newspapers, magazines)	Desktop advertising (classic)	62.487	3	0.679	1005	92.051	0.000
	Desktop advertising with a response	62.226	3	0.345	1005	180.574	0.000
	Line advertising	62.083	3	0.395	1005	157.360	0.000
	Inserted leaflets	99.978	3	0.555	1005	180.070	0.000
	Inserted samples	75.444	3	0.217	1005	348.172	0.000
	Public relations (PR) articles	36.258	3	0.730	1005	49.654	0.000
	Organizing competitions	75.991	3	0.407	1005	186.885	0.000
	Providing prizes to competitions	94.998	3	0.476	1005	199.482	0.000
Telephone	Passive telemarketing	60.296	3	0.294	1005	205.419	0.000
	Active telemarketing	58.988	3	0.437	1005	135.000	0.000
	Sales over the phone	48.477	3	0.482	1005	100.553	0.000
	Organizing competitions	44.493	3	0.217	1005	204.716	0.000
Mobile	Mobile advertising	81.690	3	0.283	1005	288.476	0.000
	Bluetooth marketing	59.691	3	0.050	1005	1204.529	0.000
	Banners in applications	69.945	3	0.311	1005	225.094	0.000
	Mobile apps	81.223	3	0.331	1005	245.484	0.000
	Geolocalisation	59.764	3	0.135	1005	442.572	0.000
	Sending short message service (SMS) to customers	61.569	3	0.599	1005	102.810	0.000
	Sending multimedia messaging service (MMS) to customers	72.361	3	0.197	1005	366.746	0.000
	Passive telemarketing	58.921	3	0.213	1005	277.030	0.000
	Active telemarketing	62.063	3	0.311	1005	199.528	0.000

Table 4. Cont.

Media	Marketing Communications Form	Cluster		Error		F	Sig.
		Mean Square	df	Mean Square	df		
Internet	Viral marketing	90.418	3	0.522	1005	173.182	0.000
	Discussion forums	59.425	3	0.651	1005	91.259	0.000
	Contextual advertising	98.314	3	0.451	1005	217.853	0.000
	Website	10.471	3	0.399	1005	26.244	0.000
	Sponsoring a discussion forum	56.112	3	0.221	1005	253.399	0.000
	Direct e-mail	54.976	3	0.713	1005	77.072	0.000
	Banners	53.363	3	0.700	1005	76.220	0.000
	Blogs	65.205	3	0.558	1005	116.909	0.000
	Vlogs	50.363	3	0.156	1005	323.340	0.000
	PPC advertising	60.294	3	0.427	1005	141.128	0.000
	Content marketing	48.697	3	0.422	1005	115.395	0.000
	Native advertising	36.784	3	0.244	1005	151.019	0.000
	Affiliate marketing	60.881	3	0.203	1005	299.907	0.000
	Search engine optimization (SEO)	40.226	3	0.572	1005	70.271	0.000
	Facebook	23.213	3	0.624	1005	37.209	0.000
	Instagram	58.861	3	0.647	1005	90.992	0.000
	Youtube	88.188	3	0.507	1005	173.832	0.000
	Other social media	61.708	3	0.353	1005	174.572	0.000
	Cinema	Cinema advertising	47.540	3	0.199	1005	238.407
Product placement		44.522	3	0.087	1005	511.045	0.000
Film sponsorship		36.055	3	0.133	1005	270.200	0.000
Other forms	Organizing events	49.996	3	0.760	1005	65.742	0.000
	Co-organizing events	63.608	3	0.662	1005	96.047	0.000
	Fairs and exhibitions	22.792	3	0.717	1005	31.773	0.000
	Press conferences	67.109	3	0.350	1005	191.499	0.000
	Presentation events	30.318	3	0.751	1005	40.355	0.000
	Guerrilla marketing	53.010	3	0.111	1005	475.819	0.000
Buzz marketing, WOM	44.943	3	0.121	1005	370.306	0.000	

Note: Word of mouth (WOM) is oral communication in the context of a consumer's behaviour, used to spread the reputation of the firm, product or service. It is a consumer's personal recommendation or something that is discussed. Items essential in determining clusters are highlighted in bold. Source: Authors' compilation.

The F tests were used for descriptive purposes because the clusters were chosen to maximize the differences between cases in different clusters. The observed significance levels are not corrected and, thus, cannot be interpreted as testing the H1 hypothesis. When comparing the results of the F value in Table 4, the highest values are mentioned in the case of communication most involved in defining the resulting groups, the clusters. The use of mobilebluetooth marketing (F value of 1204.529, contributing 26.24 times more to determining the clusters than the website—the least evaluated item) was the most important factor. The use of product placement, guerrilla marketing, price awarding on radio and mobile geolocalization supported the rise of clusters significantly. Following the methods used, three significantly different clusters of SMEs in Slovakia (traditionalists, progressives and minimalists) were determined in terms of marketing communication tools implemented.

3.1. Cluster 1—Traditionalists

Cluster 1 represents 21.9% of enterprises (whereof 25.8% are foreign majority owned enterprises), 84.6% of them are small enterprises (80.2% domestic and 19.8% foreign majority owners) and 15.4% are medium-sized enterprises (41.2% domestic and 58.8% foreign majority ownership). The impact of implemented marketing communication activities is regional (51.1%), nationwide (33.9%), and international (14.9%). That is why, compared to other clusters, the fact that it is a smaller group with the highest number of a foreign majority owner can be seen. The impact of communication activities is especially regional compared to Clusters 2 and 4. Databases of customers are created by 71.5% of the traditionalists, but only 68.8% use them for marketing communications and 14% for other marketing activities. The CRM system is implemented by 33.9% while 32% consider it effective and 65.3% partially effective.

In terms of using marketing communication tools (Figure 1), it is rather a more conservative group of SMEs with running marketing communication strategy. More traditional forms of marketing

communications are preferred by them. Television forms of marketing communications are the most often used by the SMEs in Cluster 1. Nowadays, up to 69.7% use cash prizes in competitions and 14.5% are planning to do so in the future; 51.6% of enterprises organize TV competitions; and 50.7% provide TV talks (17.6% are planning to do so in the future). More than half of the businesses in this cluster use radio for marketing communications in the form of commercials (58.8% and 18.1% are planning to use this form), talk shows and interviews (57.5% and 14.5 are planning it in the future); and almost half of businesses provide cash prizes in competitions (49.8% and 22.6% are planning it). Advertising spread by post is used by more than a half of enterprises (except the form of putting samples in mailboxes) and only a small percentage (2.7%–13.1%) is planning to use these forms in the future. Leaflets are used by 68.3%, direct mail by 61.1%, and catalogues by 52%.

Considering the point of sale, leaflets are the most commonly used form of advertising (84.2% and 5% are planning it), 58.4% organize competitions, 56.6% make presentations and 54.8% provide catalogues. Tasting (12.2%) is the form used least in terms of the point of sale. Compared to other clusters, print media advertising (74.7%), inserting leaflets (68.8%) and providing prizes in competitions (61.1%) are the most applied forms. Phone as a communication tool is used by enterprises. 27.1% of them focus on selling on the phone and 26.2% use the phone to contact their customers. Passive telemarketing is used only by 13.1%. Future progress of using the phone is planned in the range from 6% to 10%. Online forms of marketing communications, e.g., websites (84.2% and 0.9% are planning it), profiles on Facebook (81.4% and 1.8% are planning it), advertising banners (54.8%), direct emails (51.6%), Instagram (45.7%) and YouTube (40.7%) are used by companies in this cluster primarily. This cluster is characterized by the highest rate of the Internet advertising (13.6%) compared to 9.4% of enterprises in Cluster 2 and 3.7% in Cluster 4. Cinema ads are used by the overwhelming majority of companies (57.5% and 16.3% are planning it). Less than half of enterprises invest in billboard advertising (36.7%, and 7.7% are planning it) and vehicle advertising (44.8%, 3.6% are planning it); 55.7% organize events, 55.2% are involved in organizing events, and presentations are held by 52% of enterprises. More progressive forms such as guerrilla marketing (5.4%), buzz marketing, or WOM (4.1%) are rarely used.

3.2. Cluster 2—Progressives

A progressive cluster includes 19.03% of SMEs (21.9% foreign majority owned enterprises), whereof 81.3% are small enterprises (85.9% domestic and 14.1% foreign majority owners) and 18.7% are medium-sized enterprises (44.4% domestic and 54.6% foreign majority owners). Therefore, the impact of the implemented marketing communication activities is regional (39.6%), nationwide (39.1%) and international (21.4%). In fact, national and international impact of communication marketing activities is larger than in Clusters 1 and 4. A customer database is created by only 56.3% of the progressives, whereby only 55.2% of them use it for marketing communications and 17.2% for other marketing activities. A CRM system is implemented in 40.6% of the enterprises, and 56.4% consider it to be effective while 41% think it is only partially effective.

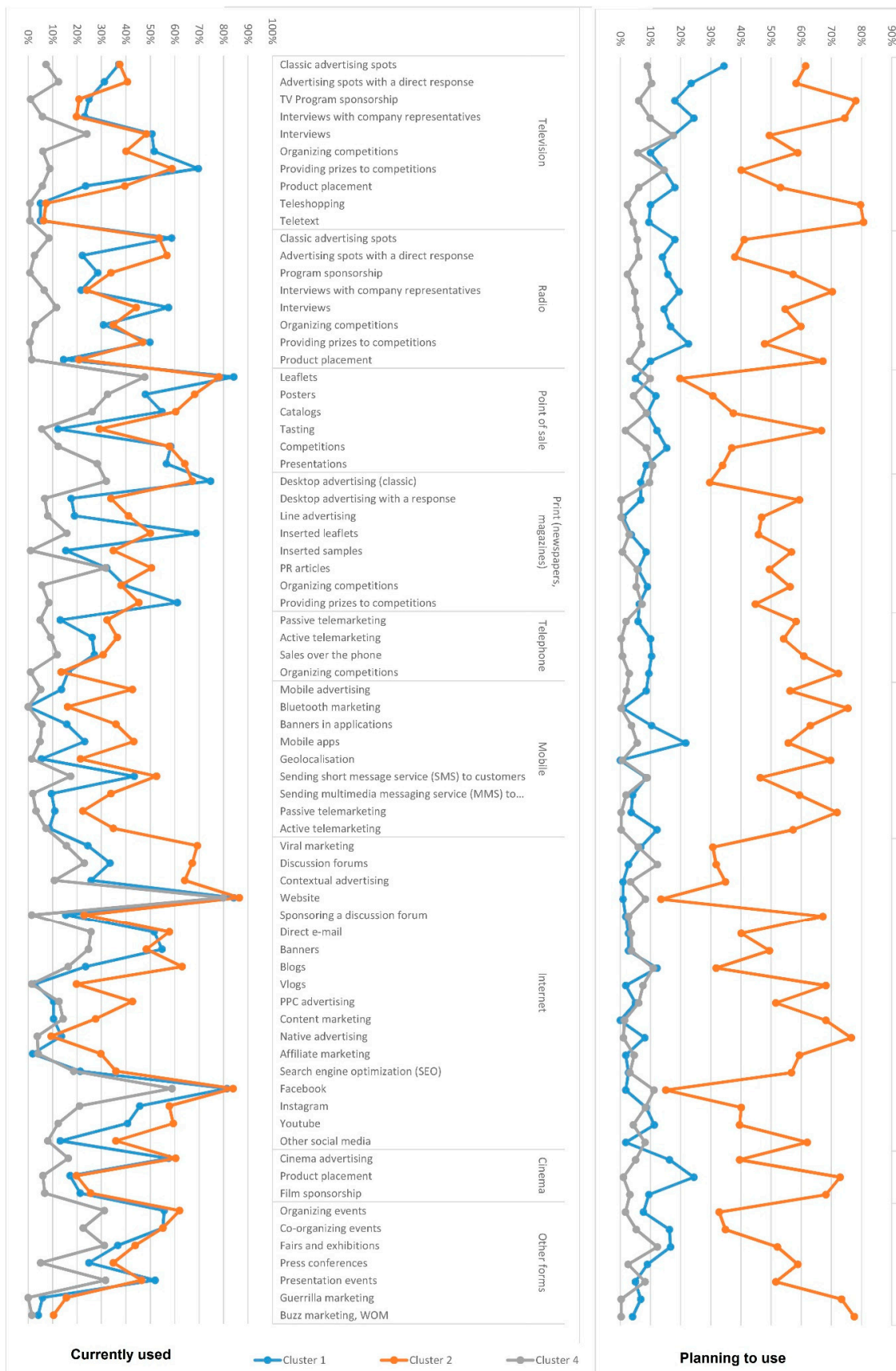


Figure 1. Use and planned use of marketing communication tools by small and medium-sized enterprises (SMEs).

A wide range of communication tools is used by the members of Cluster 2 (Figure 1). However, in comparison to Cluster 1, Progressives prefer mobile, online and more progressive forms of communication tools and their plans and visions dealing with the future of media are ambitious. The use of TV for marketing purposes is less important than in Cluster 1, however, they are planning to use it especially in the future. Similarly to Cluster 1, prizes in TV competitions are provided by most enterprises (58.9% and 40.1% are planning to do it in the future). Talk shows are provided by 48.4% (49.5% are planning to do it in the future), and 40.6% use TV (direct-response advertising spots), and 58.3% of them are planning to implement this form into marketing communications in the future. Radio, e.g., ad spots with a direct response (including the phone number, website, or email), is preferred by more than half of enterprises in this cluster, 56.8%; 38% enterprises are planning to do so in the future. Moreover, 53.6% use it for classic advertising spots and 41.1% are planning to do so in the future. Beside the use of the aforementioned forms of radio communication, this group of SMEs has high aspirations for its implementation in the future (up to 70.3% are planning to send their representatives to radio sessions). Mailing as a marketing tool is widely used by these enterprises; leaflets are used by 71.9% of these enterprises, direct offers by 75.5% and catalogues by 62.5%, while 36.5% are planning to take advantage of postal services in the future. Sending samples is used by 35.4% and 57.8% are planning to do so in the future. The forms of communication at the point of sale are used by most members of this cluster, 78.1% of them are using leaflets (19.8% are planning to use them), 68.2% are using advertising banners and 30.7% are planning to use them, and 57.8% are using competitions. Compared to Cluster 1, space advertising, leaflets and prizes in competitions are used the enterprises in this cluster to a lesser extent. On the other hand, aspirations for their future implementation is relatively high, from 29.7% to 45.8%. Similarly, it is also high in the case of other forms of print media strongly used in the group. A landline for marketing communications is most often used by members of the Cluster 2, moreover, the members still not using it are planning to change it in the near future. Active customer contact is used by 36.5%, passive telemarketing by 32.3%, and sales on the phone is carried out by 30.7% of enterprises. This group of SMEs uses Internet communications (except for native advertising) most of all. A high percentage is planning to use them. Similar to other clusters, websites (86.5% and 13.5% are planning them) and Facebook profiles (83.9% and 15.1% is planning them) are the most used forms. Attention is also paid to viral marketing (69.3% and 30.7% are planning to use it), as well as to discussion forums (67.2% and 31.8% are planning them) and contextual advertising (64.1% and 34.9% are planning this). The enterprises in this cluster use and, in particular, are planning to use even less common forms such as content and affiliate marketing, SEO, vlogs and blogs. It is the group of companies using (or it is planning to use) cinema for marketing communications most, e.g., cinema ads (60.4% and 39.6% are planning to do so), sponsorship (25.5% and 68.2% are planning to do so) and product placement (19.8% and 72.9% are planning to do so in the future). Considering outdoor advertising, this group invests most and is planning to invest in stands (60.4% and 33.3% are planning), vehicle advertising (52.6% and 43.2% are planning) and billboards (37.5% and 52.6% are planning this investment). More than three quarters of enterprises in this cluster (77.6%) are planning to invest in ambient media. According to the other media used, the fact that this group does not only use but it also prefers using more progressive forms in the future, e.g., guerrilla marketing, as well as buzz marketing can be seen (15.6% of enterprises has already used them and 73.4% are planning to use them in the future. WOM is used by 10.4% of enterprises and 77.6% are planning to do so in the future; 62% organize and 32.8% are planning to organize events, and 55.2% are involved in organizing the events. In addition, presentations are held by 46.4% of enterprises.

3.3. Cluster 4—Minimalists

Cluster 4 is represented by 58.18% of enterprises (whereof 86.7% are domestic majority owners) and it consists of small enterprises (88.1%). In the case of 91.1% of them, the majority of owners are domestic and in the case of 8.9% the majority of owners are foreign. When medium-sized companies (11.9%) are mentioned, 54.3% of them have domestic and 45.7% foreign majority owners. The impact

of implemented marketing communication activities is regional (46.2%), nationwide (35.4%), and international (18.4%); 84.5% of the minimalists create customer databases, but only 60.8% use them for marketing communications, and 12.4% for other marketing activities. Similar to Cluster 1, 33.9% has a CRM system. However, 47.7% of enterprises in this cluster consider it effective and 32.7% partially effective.

Marketing communications is not emphasised by this group of SMEs (Figure 1). However, they use marketing communication tools but only to a lesser extent. Websites and Facebook profiles are the most used forms. When investing in marketing communications, they prefer the following media: post office, point of sale, print, the Internet and organized and co-organized events, or exhibitions and fairs. Communication tools are not used by this group very often, moreover, they are not planned to be used in the future as well. TV and radio, landline, mobile, or outdoor advertising are implemented by these SMEs only rarely. In terms of point of sale, leaflets are used by 47.7% of enterprises, advertising banners by 35.5% and space advertising by 32%. Compared to other clusters, the fact that online marketing communication is the least used form in this group can be stated. These enterprises use only websites (79.9% and 8.3% are planning to do so) and Facebook profiles (58.9% and 11.2% are planning to do so in the future). The use of other forms of online marketing communication does not exceed 26%. Similar to other marketing tools, cinema is the least used or planned alternative by this group. Pre-release commercials are used by 16.4% of enterprises while other forms are not used very often. In the case of outdoor advertising, these enterprises pay the highest attention to vehicle advertisements (16.5%) while 12.1% of them focus on stands. The planning of future investments in outdoor advertising is almost none. Taking into consideration other forms of marketing communications, the fact that 31.2% of these enterprises organize events and participate in fairs and exhibitions (12.3% are planning to do so in the future) can be seen. Presentations are organized by 31.7% of enterprises.

Due to the composition of determined clusters, the dependence of several attributes, such as enterprise size, majority ownership, the territorial scope of marketing activities, agency used in marketing programs, customer database creation, and CRM were verified by ANOVA. Following the one-way ANOVA with the p-value smaller than 0.05 at the significance level of 5%, a significant difference in clusters was confirmed in terms of the majority owner of the enterprise (Table 5), the territorial scope of marketing communication programs (Table 6), the use of agency services for the implementation of marketing programs (Table 7), the creation of customer databases (Table 8), and the use of the CRM system (Table 9). Thus, the H0 claiming the given attribute is the same in the clusters was rejected in favour of the alternative hypothesis. By contrast, the size of the enterprise (Table 10) is not statistically significantly different comparing individual clusters. It is confirmed by the Anova test result, where p value is 0.56.

Table 5. ANOVA analysis of clusters vs. the majority owner of the company.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.204	3	1.068	7.519	0.000
Within Groups	142.747	1005	0.142		
Total	145.950	1008			

Source: Authors' compilation.

Table 6. ANOVA analysis of clusters vs. the territorial scope of marketing communication programs.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.968	3	2.656	4.754	0.003
Within Groups	561.398	1005	0.559		
Total	569.366	1008			

Source: Authors' compilation.

Table 7. ANOVA analysis of clusters vs. the use of an agency implementing the marketing communication program.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.626	3	2.875	3.631	0.013
Within Groups	795.935	1005	0.792		
Total	804.561	1008			

Source: Authors' compilation.

Table 8. ANOVA analysis of clusters vs. creating a customer database.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18.712	3	6.237	17.763	0.000
Within Groups	352.890	1005	0.351		
Total	371.602	1008			

Source: Authors' compilation.

Table 9. ANOVA analysis of clusters vs. implemented customer relationship management (CRM) system.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.230	3	3.410	6.444	0.000
Within Groups	531.786	1005	0.529		
Total	542.016	1008			

Source: Authors' compilation.

Table 10. ANOVA analysis of clusters vs. enterprise size.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.903	3	0.301	2.528	0.056
Within Groups	119.672	1005	0.119		
Total	120.575	1008			

Source: Authors' compilation.

The H1 hypothesis is confirmed in the case of the attribute of enterprise size. In the case of the attributes of majority ownership, the territorial scope of marketing activities, agency used in marketing programs, customer database creation and CRM use, the H1 hypothesis was refused in favour of alternative one.

Following the research results, the fact that all companies use TV, radio, print media, mobile devices, the Internet, as well as outdoor and indoor advertising can be stated.

A marketing communication survey was carried out by Starchon and Vilcekova [107] in 2007 and 2017. More than 300 enterprises participated in this research and the findings reflect changes in communication behaviour. For example, an increase in consumer contests can be observed. According to this study, in 2007, this tool was used only by 16% of enterprises. Compared to the year 2017, it was more than 33% of the studied enterprises. An overall growth can be observed in the intensity of using different tools including television. Starchon and Vilcekova [107] mentioned that in 2007, 23% of companies used TV commercials while in 2017 it was 34%. While advertising in print media has a general tendency to decline, an increase in PR activities can be seen. Unsurprisingly, the biggest change can be noticed in using the new media. An increase of 13% can be observed in content marketing (7% in 2007 compared to 19% in 2017). The huge increase can be seen in the use of social media. In 2007, only 7% of enterprises used this tool while in 2017 it was 75% [107]. In Slovakia, most of the enterprises use Facebook, Instagram and YouTube to communicate with their customers. SMEs represent a significant part of Slovak economy with the greatest potential for growth and the impact

on economic stabilization and balanced development of the regions [108–112]. In Slovakia, 99.9% of the total number of business entities are SMEs and in 2017, they recorded increased employment (+1.4%), added value (+8.9%), or profit (+7.5%), while value added growth in this sector was the most significant over the course of the last seven years [12]. In the competitive market, SMEs are vulnerable and exposed to many risks but their existence and success are of great importance in the Slovak Republic. Therefore, the aim of the study is to support companies by helping them make the right decision about developing suitable marketing communication programs using adequate communication tools and selecting appropriate media.

Pohludka and Štverková [108] present the results of the research focused on the use of CRM in SMEs in the Czech Republic carried out using a sample of 319 business entities. Following their research, the fact that, similarly to the enterprises in Slovakia, there is a significant gap between companies creating customer databases (81%) and subsequently using the data within a CRM (45%) can be seen. Collecting customer data does not mean that a CRM is implemented in the enterprise. A CRM philosophy is a prerequisite for an enterprise to collect customers' data and cooperate with them.

When verifying the CRM implementation in the studied enterprises, the fact that 45% of entities have a CRM system, 3% are in the implementation phase; 21% consider implementation and 31% of respondents do not consider implementing CRM was found. In particular, micro-businesses do not think about a CRM system implementation. Taking a closer look at the medium-sized enterprises, 80% of the studied entities have already implemented the CRM system. These results are comparable to those found in SMEs in Slovakia, where 75.5% of SMEs create customer databases and only 40.7% of them use them for the purpose of CRM. In 2012, Urdzikova et al. [113] presented the results of the use of CRM by manufacturing companies in Slovakia. At that time, 0.1% of micro, 40% of small and 40% of medium manufacturing enterprises (in total 262 manufacturing enterprises were analysed) used CRM. Therefore, the further research problem about the use of CRMs and the creation of databases in terms of individual segments arises.

4. Conclusions

Entrepreneurial activities are affected by many external factors. Under the pressure of a global competitive environment, businesses have to create sophisticated business strategies. The effect of the upcoming Industry 4.0 is similar. An active use of advanced information technology in the business environment is at the centre of attention. Sustainability is an important part of strategic business management. It can be achieved through effective marketing communications taking into account current trends. The sustainability in marketing communications employed within SMEs depends largely on the level of innovation reflected in the use of modern electronic tools. On the other hand, there is a range of limitations in marketing communication activities of SMEs resulting from restricted finances as well as from the fact that owners and employees of SMEs tend to be generalists rather than specialists, so their marketing expertise is often limited. This brings us to the conclusion that in order to succeed in both domestic and international markets, innovations must be not only at the manufacturing or service level but also in adopting creative and innovative marketing communication activities and in selecting appropriate and adequate marketing communication tools. The aim of the paper was to present the clusters created by the use of marketing communication tools in SMEs. Following the use of a K-means cluster analysis, three clusters significantly different in terms of the majority of owners of an enterprise, the territorial scope of marketing activities, the use of the agency in implementing marketing programs, customer database creation and the use of the CRM system were determined. In terms of enterprise size, these clusters are comparable. The attitude to the previously established and used communication programs applied in the group with the largest foreign ownership was the main difference in the use of marketing tools. Compared to other clusters, TV and radio media were used more frequently. Similarly, the group of enterprises in Cluster 4, the "Minimalists" over-represented within SMEs (formed by 58.18% of SMEs whereof 88.1% are small enterprises), is comparably traditional. Minimalistic marketing communication activities in terms of

marketing tools are preferred by these enterprises. Following the research results, they are not planning to change significantly this trend in the future. Their attention is focused on using the websites, Facebook profiles, leaflets, general advertising, organizing events and presentations or participating in exhibitions and fairs. This group consists mostly of small businesses with close relationship with customers. Their customer database is the largest one (up to 84.5, by 13 % more than in the case of the Traditionalists (Cluster 1) and by 28.2% more than the Progressives (Cluster 2). Moreover, a majority of them use the databases for marketing communications. The progressive members of Cluster 2—the “Progressives”—are the most different group of enterprises. They are active in the use of communication tools and prefer forms that are more progressive. Their vision of incorporating forms of communication tools in the future is highly ambitious. This is a group with higher domestic representation, whose marketing activities are rather national or even international. Their visions and real use of marketing communication tools are in contrast with the number of customer databases created. Only 55.2% of enterprises in this group create databases at the same time. However, these enterprises use the CRM system most (up to 40.6%).

The results of this empirical study conducted in SMEs in Slovakia enhance knowledge about the use of marketing communication tools in firms. It provides a valuable view into the presence and implementation of marketing activities as well as the choice of media in promotional campaigns. Most of the budget allocated for marketing communications is spent especially on traditional media such as broadcast (TV and radio) and print media. However, in Slovakia, a tendency to invest in marketing communication activities in new media (the Internet and mobile) has been steadily increasing since the beginning of the 21st century. The Internet and the widespread use of social media have become effective and profitable tools of promoting company products and services. In the case of SMEs, they take advantage of social media because of cost effectiveness, time saving and engagement with customers.

Sustainable development at the SME level is essential and inevitable. The 4.0 Industry Revolution is accompanied by the expectations and demands of customers in the intelligent use of information technology in marketing communications as well as its connection with integrated marketing communications. From this point of view, Cluster 2 (the “Progressives”) enterprises are the most responsive to this transition. Nowadays, they are no longer satisfied with websites (86.5%) and social networks (83.9%), but they focus also on viral marketing (69.3%), contextual advertising and, to a lesser extent, on the use of SEO, vlogs and blogs, buzz marketing, and e-WOM, etc. Cluster 1 (Traditionalists) has no problem with the more common forms of e-marketing communication tools (websites, social networks, native internet advertising, banner ads, direct-mails), however, buzz marketing and e-WOM are almost unused by them.

The transition to Industry 4.0 will be the biggest challenge facing the largest cluster, Cluster 4 (the “Minimalists”). These small enterprises are primarily focused on personal approach to customers. However, the benefits of information technology are not excluded. Without taking advantage of the benefits provided by information technology in marketing, there is a risk that customers will begin to favour competition. Using CRM and e-WOM offers a great advantage to these businesses in order to improve their personal approach and strong customer relationships. SMEs should realize the importance of WOM and e-WOM marketing. Customers’ comments as well as experience shared in social networks can strengthen or, on the other hand, destroy the reputation of an enterprise. The more consumers chat and write online about the company, its products and services in a positive way, the better promotion of the enterprise and its performance.

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