

The Influence of Information Technologies on Public Communication Within Sports Organizations

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Abstract

Information, communication, and digital technologies such as the Internet, social media channels, mobile communication devices, big data, and artificial intelligence technologies generate new challenges for public communication within organizations that have the public as users of services. Private organizations in Romania have already implemented information, communication, and digital technologies. Moreover, in the sector of public organizations in sports (municipal and county sports clubs), significant steps are being taken towards modernizing public communication based on information, communication, and digital technologies. The paper proposes an empirical study on the employees of municipal and county sports clubs concerning the impact of information, communication, and digital technologies on the public communication of these clubs. The collected data is processed using artificial neural network analysis. Following the interpretation of the data, we show that social media represent the most critical technologies that influence the public communication of municipal and county sports clubs.

Key words: public communication, mobile communication, social media, Big Data, artificial intelligence, sports organizations

J.E.L. classification: M31, O15

1. Introduction

The new technological revolutions have shifted the focus from the human resources involved in communication (Bocean, C.G., 2007a; Bocean, C.G., 2007a; Bocean, 2015; Sitnikov and Bocean, 2010; Sitnikov and Bocean, 2012; Bocean and Sitnikov, 2015) to informational, communication, and digital technologies such as the Internet, social channels media, mobile communication devices, big data technologies and artificial intelligence (Sitnikov and Bocean, 2015; Balaban et al., 2016; Kannan and Li, 2017; Figueiredo et al. 2021).

In the context of the new tools and ways of communication generated by the implementation of information, communication, and digital technologies, public organizations, which are often seen as rigid and conservative in approach, must align with technological trends and respond to the needs of the public they address (Kannan and Li, 2017). Therefore, the paper aims to analyze and identify the new information, communication, and digital technologies that public organizations use and their effects on public communication efficiency as perceived by the municipal and county sports club employees who were the empirical study's object.

The work is structured in five sections. First, after introducing the research object, we presented the theoretical background. Then, the third section presents the research methodology, the fourth section presents the findings, and the fifth section concludes.

2. Theoretical background

Implementing Internet technology in the daily life of individuals and all organizational activities has changed the paradigms of the development of production processes in organizations, making organizations' communication more efficient (Balaban et al., 2016). Communication is carried out instantly in any corner of the world, the borders in time and space being torn down. The emergence of social media applications has raised the Internet to the rank of an essential tool of public communication of public organizations. If, in the past public communication was done through traditional mass media and aimed at a target group, nowadays, communication is globalized and aims to attract as many users of public services as possible (Zerfafi, 2007, p. 31).

The emergence and spread of mobile communication devices have generated an essential change in public communication. These devices have brought the communication flow within reach of all individuals at any time and anywhere. Also, users leave the role of passive receivers and get involved in generating online content without requiring a technical or financial effort from the public organization and without communication specialists. The most outstanding social media achievement supported by mobile communication is overcoming the linearity of communication boundaries and revolutionizing the roles of sending and receiving messages in public communication.

Big data and artificial intelligence technologies also significantly collect data about public service users, improve communication and interpret this data, and determine complex and asymmetric public communication models (Parot et al., 2019). The increased volume of data obtained through the digitization of accounting and managerial information systems allows clients to build flexible marketing strategies, and artificial intelligence solutions facilitate a better prediction of the response to the organization's promotion and communication policies (Ducange et al., 2018; Paschen et al., 2020).

Public marketing uses information technologies such as Big Data (BD) and artificial intelligence (AI) to collect and process data about public services and their users, and communication technologies such as mobile communications (MC) and social media (SM) to communicate with users to satisfy their needs (Langan et al., 2019; Gao and Zhang, 2020; Figueiredo et al. 2021)

Consequently, starting from the theoretical considerations, we built the following hypotheses of the research:

H1. The effects of information, communication, and digital technologies on municipal and county sports clubs' public communication are significant.

H2. Among the information, communication, and digital technologies, social media has the greatest impact on the public communication of municipal and county sports clubs.

3. Research methodology

The evaluation of the effects of the new information, communication, and digital technologies that public organizations use on public communication efficiency was conducted through an empirical study based on a questionnaire. The questionnaire structure is illustrated in table no. 1.

Table no. 1. Questionnaire structure

Variable	Scales
Sex	Male, Female
Age	18–30 years, 31–45 years, 46–65 years
Social media (SM)	1 to 5 (1—non-important, 5—most important)
Mobile communication (MC)	1 to 5 (1—non-important, 5—most important)
Big data (BD)	1 to 5 (1—non-important, 5—most important)
Artificial intelligence (AI)	1 to 5 (1—non-important, 5—most important)
Public communication efficiency (PCE)	On a scale of 1 to 5 (1—very small, 5—very high)

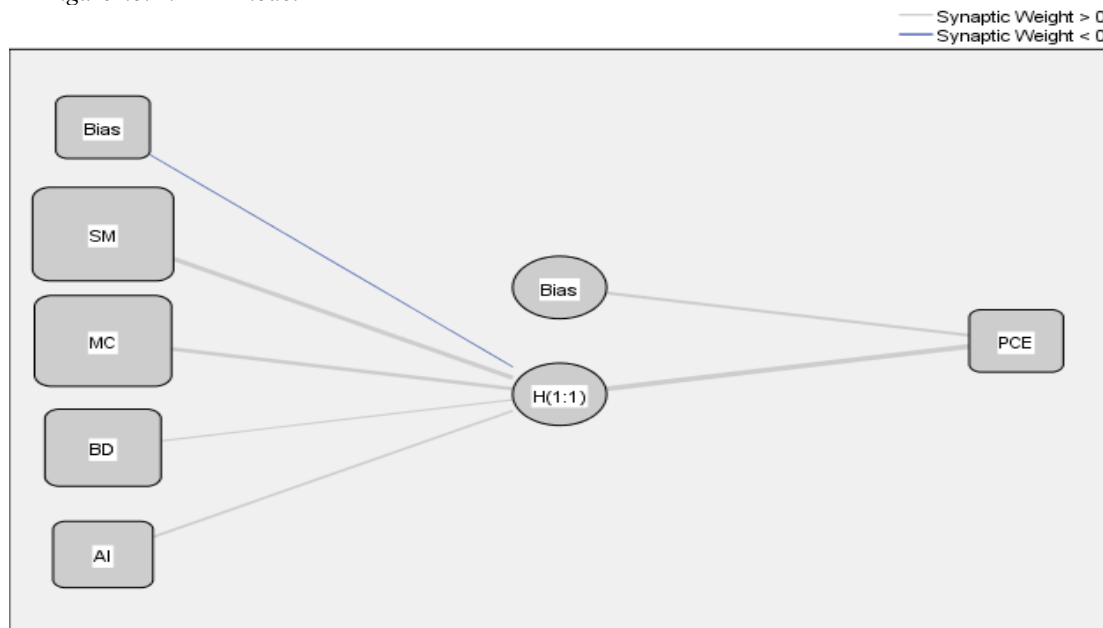
Source: Authors' own contribution

The survey was conducted between July and September 2022 among 239 municipal and county sports club employees. For data processing, we used the analysis of artificial neural networks similar to other researchers (Nicolescu and Vărzaru, 2021).

4. Findings

We used a multilayer perceptron model to analyze artificial neural networks. The model has two layers (one input and one output), with an interposed hidden layer. The input layer includes independent variables, and the output layer the independent ones. The model allows for identifying the influences of information, communication, and digital technologies that public organizations use on public communication efficiency. Figure no. 1 shows the model.

Figure no. 1. MLP model



Hidden layer activation function: Hyperbolic tangent

Output layer activation function: Hyperbolic tangent

Source: Authors’ own contribution using SPSS v.20

Table no.2 includes the predictors of the multilayer perceptron model.

Table no. 2 MLP model predictors

Predictor		Predicted values		Importance	Normalized importance
		Hidden Layer 1	Output Layer		
		H(1:1)	PCE		
Input Layer	(Bias)	-0.053			
	SM	0.285		0.307	100.0%
	MC	0.259		0.294	95.7%
	BD	0.200		0.226	73.5%
	AI	0.214		0.173	56.4%
Hidden Layer 1	(Bias)		0.254		
	H(1:1)		0.974		

Source: Authors’ own contribution using SPSS v.20

The research hypotheses are valid, analyzing table no. 2 and figure no. 1. The effects of information, communication, and digital technologies on the public communication of municipal and county sports clubs are significant. Among the information, communication, and digital technologies, social media has the most significant impact on the public communication of municipal and county sports clubs, followed by mobile technologies, big data, and artificial intelligence.

5. Conclusion

Social networks generate new challenges and opportunities for the public communication of municipal and county sports clubs that were the object of the empirical study. Social media is an essential communication tool that significantly affects the organization's public communication efficiency. Also, mobile communication has enabled supporters to get closer to municipal and county sports clubs through interactive, non-linear communication. This circular communication ensures better feedback, offering the possibility of modern public communication. Digital technologies such as big data and artificial intelligence have an essential role in identifying the profile of users of public services and the organization's optimal communication models with them.

6. References

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