WHAT MISSION STATEMENTS REVEAL IN PUBLIC SECTOR: THE CASE OF SLOVENIAN HOSPITALS AND HEALTH CENTRES

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Abstract:
Content of mission statements were already analysed in the past but most frequently with methods of qualitative analysis. In the paper, mission statements of Slovenian hospitals were analysed with methods of content analysis but mostly using methods of quantitative analysis. Firstly, from the webpages, mission statements of 66 out of 83 hospitals and health centres were available and collected. Analysis was performed with two different techniques: factor analysis and network analytic methods. The first technique revealed 5 factors also called content dimensions of mission statements in Slovenian public health sector. In addition, keywords of mission statements in this sector in Slovenia were recognized and with relation of co-occurrence further analysed via network analytic procedures.

Keywords: public sector, mission statements, hospitals, health centres, Slovenia

1. INTRODUCTION

Mission statements of any institution can be understand as the institution's mirror. In this context it's not surprising that already many researches which analysed the content of mission statements has been performed (Analoui and Karami, 2002; Bart and Baetz, 1998; Bartkus et al., 2006; Rarick and Vitton, 1995). Although in some cases above, also the performance of organisation was pursued. Moreover, the organisational mission statement is a popular and ubiquitous management tool and there is no difference for profit and non-profit organisations (Patel et al., 2015).

Mission statements are usually documents written for institution stakeholders to communicate its identity, overarching purpose, business domain and competencies (Sidhu, 2003). Some of them are also from the health sector (Futrell and Clemons, 2017; Grbic et al., 2013). However, most of the researches so far were using qualitative methods. In this paper, quantitative methods such as text analysis, factor analysis and network analysis will be applied. We believe that those methods can be understood as a complement to qualitative techniques and they can contribute to the overall picture of mission statements' context in any research area.

2. RESEARCH METHODOLOGY

To gain insight into mission statements of public institutions in Slovenian health sector, we investigated publically available webpages of these institutions.

The list of all institutions can be found on webpage of Ministry of Health of Republic of Slovenia (http://www.mz.gov.si/si/pogoste_vsebine_za_javnost/strokovne_institucije_in_publikacije/).

We identified 83 public institutions, 26 public hospitals and 57 public health centres.

The data were first analysed using some well-known text analytical procedures. In the second stage methods of social network analysis were also applied. As a definition of a social network, we relied on classical statement from Wasserman and Faust, (Wasserman and Faust, 1994): social network consists of a set of actors and a relation or relations between them. In our research, the actors are determined by the most important words in mission statements of public health institutions (hospitals or health centres). Relations are defined as co-occurrence s these important words in the same mission statement. As a consequence, obtained network can be classified as undirected (if first word occurred in the same mission statement as the second word, the vice-versa is obvious). Furthermore, our network can be classified as weighted. Weight of undirected link (an edge) between two words is determined by the number of co-occurrences in the same mission statements.

For the analysis of networks two statistical packages were used, both freely available. The first part of the analysis was carried out with the program R (R core team, 2013). Algorithms in R were used for data cleansing and text mining (Feiner and Hornik, 2018) and for constructing a network. Also the factor analysis was applied with the program R. In the second stage Pajek program (Pajek, 2019) was used for network analysis. Pajek is one of the most frequently used software programs for analysis of networks (de Nooy et al., 2012).

3. RESULTS

After initial screening of the webpages of public health institutions in Slovenia we discovered that 66 institutions (79.52%) have had available and published mission statement. In quantitative terms, the range of missions statements is between 4 and 228 words.

In the first step of the analysis, data cleansing was applied via tm package in statistical programme R. Numbers and punctuations were removed, 351 'stopwords', i.e. meaningless for our analysis, were identified and removed as well. After taking account of synonyms (we found 835 synonyms), we were left by 758 words called also keywords. The frequencies of keywords are presented in Table 1.

Table 1: The most frequent words – keywords – in mission statements of Slovenian institutions of public health

keyword	frequency-diff instit	frequency-together
quality	39	54
service	38	56
provide	34	49
implementation	32	45

patient	32	43
professionalism	26	43
employees	24	31
health	24	30
care	24	28
municipality	22	32
development	20	29
concern	19	23
user	17	21
work	16	18
improvement	15	21
satisfaction	15	19
help	15	18
spread	15	16
environment	14	21
population	14	21
disease	14	18
offer	14	14
essential	14	14
…	…	…

From Table 1 we can conclude that the most frequent word in mission statements of Slovenian public institutions is word 'quality'. We can find this word 54 times and in 39 (out of 66) mission statements.
In the next step of the analysis, our aim was to find groups of keywords that are closely related, i.e. that they occur in similar set(s) of mission statements. For this purpose, we used the method of factor analysis (Bartholomew et al., 2008; Warne and Larsen, 2014; Ledesma and Valero-Mora, 2007). It has provided five factors that are provided in Table 2. We named them: sustainability and quality, employees oriented factor, concern for society, concern for local implementation and factor that care for satisfy patients' needs.

Table 2: Five factors or dimensions of keywords in Slovenian institutions of public health obtained by factor analysis

	PA1	PA2	PA3	PA4	PA5
quality	**0.595**	-0.143	0.154	-0.199	0.259
service	**0.613**	0.207	-0.092	0.041	0.154
provide	**0.544**	0.368	0.272	0.145	-0.105
user	**0.504**	0.050	-0.208	-0.035	-0.280
improvement	**0.443**	-0.058	0.119	0.067	0.096
professionalism	-0.097	**0.619**	0.135	0.111	0.347
development	0.264	**0.601**	-0.010	-0.112	-0.036
care	-0.046	**0.622**	-0.155	-0.020	-0.098
employees	0.033	**0.365**	-0.293	0.091	0.335
concern	-0.023	0.002	**0.646**	0.019	0.073
help	0.092	-0.195	**0.564**	0.106	0.023
spread	-0.016	-0.046	**0.441**	0.430	0.028
work	-0.106	0.040	**0.331**	-0.111	0.220
health	0.188	-0.145	0.076	**0.617**	-0.163
municipality	-0.019	-0.132	-0.062	**0.511**	-0.461
implementation	-0.153	0.172	0.193	**0.494**	0.146
patient	0.125	0.023	0.056	-0.071	**0.728**

satisfaction	0.263	-0.207	-0.242	0.090	**0.408**

PA1 (α=0.69) – sustainability and quality
PA2 (α=0.66) – employees oriented
PA3 (α=0.55) – concern for society
PA4 (α=0.54) – concern for local implementation
PA5 (α=0.45) – satisfying patients' needs

Social network analysis offers rather different approach to a research. Compared to traditional statistical methods, its focus is strictly to relations among units (called actors). In our problem, keywords represent actors and co-occurrence in same mission statements represent relation. Some initial information of the network of 18 keywords that were recognised by factor analysis is displayed in Table 3. Obtained network is very dense (99% of all possible links) with high average degree. Highest weight on links indicate that two keywords occur together in 29 common mission statements.

Table 3: Some initial information about the keywords network

Property	Value
Number of vertices	18
Number of links	152
Density	0.9937
Average Degree	16.89
Lowest Degree	16
Highest Degree	17
Lowest weight on links	1
Highest weight on links	29

We further analysed values on links. The highest values are presented in Table 4. In Table 4 keywords with higher frequency (refer to Table 1) is always displayed as word 1 and keyword with lower frequency as word 2.

Table 4: The highest values on links with adjacent keywords

Strongest links		
word 1	word 2	value/weight on the link
quality	service	29
service	provide	27
quality	provide	25
quality	patient	22
service	patient	22
service	implementation	19
service	professionalism	19
provide	implementation	19
quality	implementation	18
quality	care	18
provide	patient	18

In the theory of network analysis, dense networks can be displayed with various methods. One of the most common option is to apply PathFinder algorithm (Schvaneveldt, 1990; Schvaneveldt et al., 1989) which remove least important links from the network. Remaining network preserve connectivity but only skeleton of the network is retained.

Network of keywords in Slovenian institutions of public health after PathFinder algorithm was applied is presented in Figure 1. Size of each vertex is proportional with the frequency of keyword. Similarly, colours of links are on the greyscale. Darker the colour of the link, stronger the link, i.e. weight on the link is higher than weights on the links that are brighter coloured. In addition, vertices are coloured by the colour that represent dimension to which keyword belongs (Table 2).
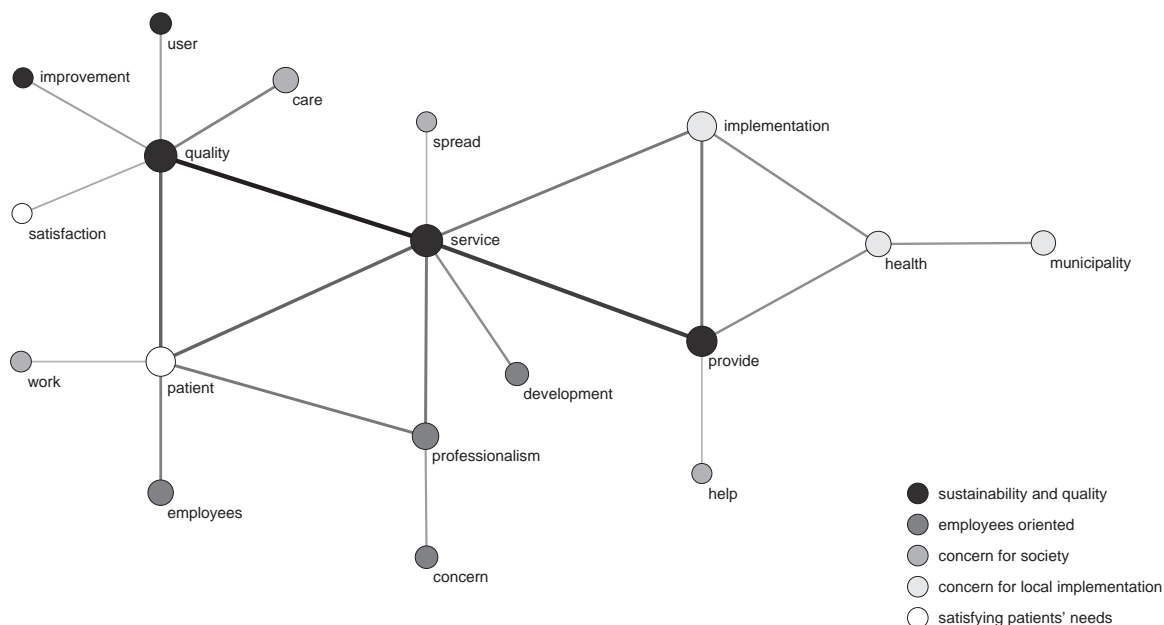
Figure 1: Network of keywords in Slovenian institutions of public health after PathFinder algorithm was applied

Figure 1 revealed that dimension affiliation reflects very well also in the network structure. Namely, in most clusters (or dimensions) keywords from the same cluster are closely together. There is exception with small and underrepresented cluster/dimensions as satisfy patients' needs.

4. DISCUSSION AND CONCLUSIONS

After collecting mission statements from the webpages of institutions of Slovenian health care, we identified five the most significant groups of keywords, i.e. dimensions. First dimension includes keywords with the highest frequency, 'quality', 'service', 'provide', 'user' and 'improvement'. We named this dimension as sustainability and quality. Second dimension is employees oriented, including keywords 'professionalism', 'development', 'care' and 'employees'. Concern for society is the third dimension with keywords 'concern', 'help, 'spread' and 'work'. Final two dimensions are 'concern for local implementation' (with keywords: 'health', 'municipality' and 'implementation') and 'satisfying patients' needs' (with keywords: 'patient' and 'satisfaction').

According to previous studies, we lack the presence of some important keywords, such as: 'discover', 'innovation', 'excellence' and 'region'. In general, we believe that in Slovenian health care system, the concern for current situation prevails over investment in the future in terms of research and innovation. Regarding to methodological issues and future work, we would like to stress few ideas. Firstly, current version of the paper is dealing with terms of one-word length. It would be interesting to include two-, three-words terms. Secondly, similarly to network of keywords also the network of institutions can be obtained and analysed. Next, comparison between hospitals and other health provides would be interesting.

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