

Dynamics of the Public Satisfaction with Situation Management During COVID-19 Pandemic: Developments from March 2020 to January 2022

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Abstract— This paper focuses on the relationship between public satisfaction with COVID-19 pandemic situation management and the pandemic development based on the Estonian case. The focus is on whether public satisfaction is related to situation awareness within pandemic situations. For analysis, data were collected from open sources, namely, we analyzed data from 37 COVID-19 survey reports that were carried out at the request of the Estonian State Office (*Riigikantselei*). For time-series analysis, we collected data on weekly rates of new COVID-19 cases in Estonia from the World Health Organization (WHO COVID-19) homepage. The results of the analysis indicate that public satisfaction with situation management (SM) correlates strongly and negatively with infection rates, i.e., lower public satisfaction with higher COVID-19 infection rates, and *vice versa*.

Keywords — public satisfaction with situation management, COVID-19 pandemic

I. INTRODUCTION

“Satisfaction” can be defined as gratification, pleasure, or fulfillment of desire and a feeling that comes from the fulfillment of one’s needs and wants [1]. It is important to point out that subjective assessments, such as satisfaction with public services, do not necessarily reflect the performance of that service [2], and other factors influence satisfaction in addition to service quality [3]. Satisfaction surveys are not absolute and only describe part of the picture, therefore the survey context should always be considered [4]. However, subjective assessments could prove useful in providing policymakers and managers information on their overall performance, identifying failures to deliver the kind of service people expect, or indicating that the focus is on service quality aspects that users do not find very important [5].

“Group satisfaction” is quite a well-accepted notion in sociology and psychology, however, unfortunately practically unknown in situation management. It is associated with intelligent collective behavior and is based on such qualities as collaboration and mutual trust among the agents [6]. The group satisfaction represents group-level counterpart to individual satisfaction.

The more generalized “public satisfaction” forms as general knowledge about the behavior of a population of agents. It could also be defined as citizens’ perception of the quality of

the goods and services that are provided by the government. Public satisfaction measurement is a way to evaluate the implementation effects of government process reengineering. Public satisfaction can be an important outcome of overall government performance.

The COVID-19 pandemic has made it necessary for the governments to act on a national level and enforce health-related regulations. It is not only encouraged but unavoidable for every citizen to initiate behavioral changes and respect future constraints. It is, therefore, very important to understand people’s perceptions and reactions to the effects of containment policies, to be better informed when designing further policies and contingency measures [7]. People’s satisfaction with the situation management is crucial to achieving the successful implementation of future measures while low satisfaction may hinder the fight against the pandemic [8].

The current and prospective government policies are created by policymakers who often have incomplete or no information at all [9]. All over the world, governments have been experimenting with public policies and often disproportionately so [10]. In efforts to improve the quality of public services, governments are proactively seeking feedback from citizens [11]. Satisfaction surveys are one of the ways to evaluate government performance and satisfaction with situation management.

The first infection case of the COVID-19 pandemic in Estonia was confirmed on February 25, 2020 [12]. A state of emergency was declared by the Estonian government on the 12th of March 2020 to put in place containment measures to control the spread of infection [13].

II. STUDY MEASURES

A. COVID-19 Survey Reports and Time-series analysis for COVID-19 cases

On one hand, we analyzed data from COVID-19 survey reports that were carried out at the request of the Estonian State Office (*Riigikantselei*). 37 open access Estonian State Office’s COVID-19 survey reports were analyzed. Surveys were performed between March 2020 and January 2022 [14]. The general aim of the surveys by the Estonian State Office was to

map the population's sense of risk regarding the coronavirus and attitudes towards the recommendations and restrictions given to prevent the spread of coronavirus. The survey's target group was Estonian residents aged 15 years and older. A total of about 1,256 people responded to each survey. Average data from 15 to 27 Estonian State Office surveys were used. Different regions of Estonia, settlement types, respondents' genders, age groups, and nationalities were represented. The survey was conducted as a combination of web and telephone surveys. The classical Likert 5-point scale was used to measure agreement or disagreement with various statements.

In total, the average data of $N = 26,250$ respondents were analyzed i.e., the number of surveys used was 21.

For time-series analysis data on weekly rates of new COVID-19 cases in Estonia was collected from the World Health Organization's (WHO COVID-19) homepage [15].

B. Statistics

Several statistical methods were used to analyze the collected data. Pearson correlation analysis was used for calculating correlations between the determinants of trust and satisfaction of pandemic situation management; to evaluate the statistical significance of the correlations Student t-test was used, and to compare the average of two groups (Estonians vs. Non-Estonians) two-sample t-test was applied. In addition, common measures of statistics, for example, average, sum, standard deviation, variance, range, etc. were also considered.

III. PUBLIC SATISFACTION WITH SITUATION MANAGEMENT DURING COVID-19 PANDEMIC

In this study, public satisfaction with SM during the COVID-19 pandemic was statistically significantly and negatively correlated with COVID-19 infection rates ($r = -0.63$; $p < 0.05$) i.e., higher public satisfaction with SM was associated with lower COVID-19 infection rates, and *vice versa* (Fig. 1).

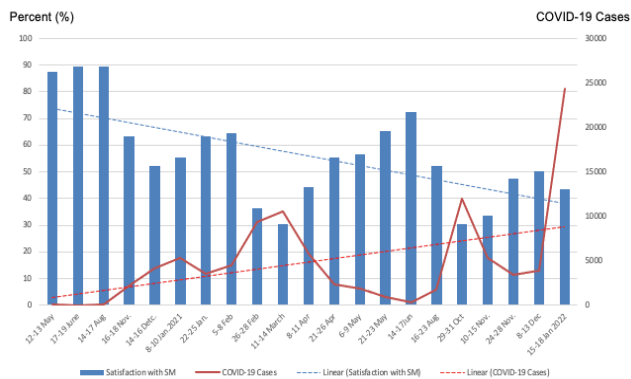


Figure 1. Public Satisfaction with Situation Management During COVID-19 Pandemic

There were no significant differences in satisfaction with SM between Estonians vs. non-Estonians.

Public satisfaction with situation management during the COVID-19 pandemic ranged from 89 percent in June 2020 to 30 percent in October 2021.

The correlation between public satisfaction with situation management during the COVID-19 pandemic and the positive evaluation of the Estonian Government as a key role in the response to COVID-19 was statistically significant ($r = 0.67$; $p < 0.05$) i.e., higher public satisfaction with SM associated with a higher positive evaluation of Estonian Government, and *vice versa* – lower public satisfaction with SM associated with a lower positive evaluation of Estonian Government.

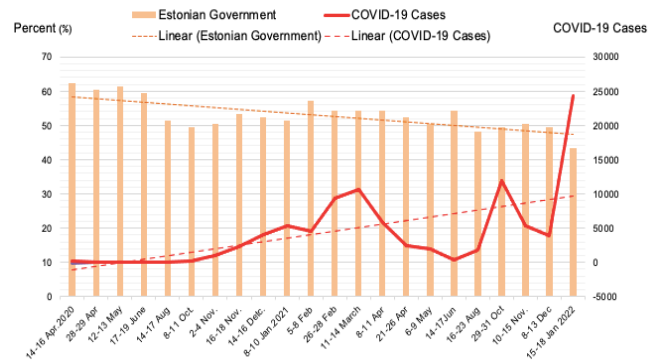


Figure 2. The Positive Evaluation of Estonian Government During COVID-19 Pandemic

The positive evaluation of the Estonian Government ranged from 62 percent at the beginning of the COVID-19 pandemic (April 2020) to 43 percent in January 2022.

There was a statistically significant ($p < 0.01$) difference in the positive evaluation of the Estonian Government between Estonians vs. non-Estonians i.e., non-Estonians were more critical of the government than Estonians.

Another important statistical relationship was found between public satisfaction with COVID-19 pandemic situation management and a decrease in income due to the pandemic ($r = 0.58$; $p < 0.05$) i.e., lower public satisfaction with SM is associated with a higher decrease in income due to pandemic, and *vice versa*.

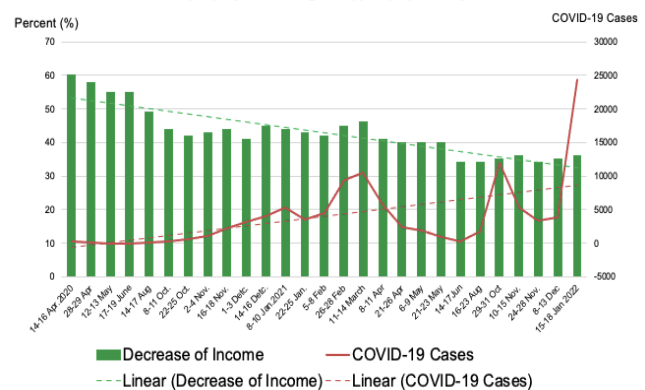


Figure 3. Decrease of Income due to COVID-19 Pandemic

The decrease in income due to the pandemic was found to be significantly different between Estonians and non-Estonians

($p < 0.05$) i.e., a decline in income due to the COVID-19 pandemic was more rapid for non-Estonians.

There were no statistically significant correlations between public satisfaction with situation management during the COVID-19 pandemic and citizen's psychological strain nor citizen's perception of each person's role to follow the recommendations and rules set by the Estonian Government to better deal with the pandemic.

IV. CONCLUSIONS

Public satisfaction with the COVID-19 pandemic situation management was negatively correlated to the pandemic infection rates i.e., lower satisfaction was associated with higher COVID-19 infection rates and *vice versa*. Higher infection rates imply to the public that the government's policies are not having a sufficient effect, therefore resulting in lower satisfaction in the situation management. A comparison of the satisfaction with situation management between Estonians vs. non-Estonians showed no significant difference.

It was also found that public satisfaction with situation management was significantly correlated with the positive evaluation of the Estonian Government i.e., higher public satisfaction with SM was associated with a higher positive evaluation of the Estonian Government and *vice versa*. This could indicate that higher satisfaction with situation management also increases trust in the government. Differences appeared between Estonians and non-Estonians, where non-Estonians tended to evaluate the government less positively.

Lastly, public satisfaction with situation management was correlated with a decrease in income due to the pandemic. Lower public satisfaction with situation management was found to be associated with a higher decrease in income due to the pandemic, and *vice versa*. A decrease in many individuals' incomes causes general dissatisfaction and therefore the situation management satisfaction also decreases. There was a significant difference between Estonians and non-Estonians, with the decline in income due to the pandemic being higher for non-Estonians.

No statistically significant correlations were found between public satisfaction with situation management and citizens' psychological strain or situation management and citizens' perception of each person's role to follow the government's containment policies.

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