

# Ensuring the Accessibility of Hospitality Services and Public Catering For Persons with Disabilities of Health



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**Abstract:** The article examines the current condition, problems, and prospects of the development of hospitality and catering sphere for people with disabilities. The subject of the article in modern conditions is relevant and important in the development of promising areas of modernization of hospitality and catering enterprises that take into account the requirements for an accessible environment for people with disabilities. The authors see the purpose of the study in developing a method for analyzing the effective use of equipment at hospitality and catering enterprises for people with disabilities. The authors consider theoretical aspects of development and implementation of analysis methods. The article proposes a comprehensive solution to eliminate violations in the organization of a barrier-free environment for people with disabilities. Suggested the necessary list of business processes to monitor the effectiveness and quality of care for people with disabilities. This confirms the practical significance of the study. The authors propose a method for analyzing the coefficient of effective use of equipment and define an area of application of this method. The proposed methodology will allow a comparative analysis between hospitality and catering enterprises to identify best practices for working with people with disabilities. Businesses which are using the proposed technique will have a competitive advantage to attract a larger percentage of consumers and increase the economic efficiency.

**Keywords :** persons with disabilities, accessibility, services, analysis, method, efficiency, equipment.

## I. INTRODUCTION

The relevance of the research is aimed at increasing efficiency and optimizing the service processes of hospitality and catering enterprises based on the analysis of the effective use of affordable environment equipment for people with limited health disability.

In preparation for the World Cup in Russia, the hospitality and catering enterprises have been developed and modernized, taking into account the requirements for an accessible environment for people with disabilities, the number of which, despite the downward trend in the number of disabled people, remains quite high (see Table 1). In the regulations and standards on the classification of hospitality and catering enterprises, the requirements for rooms, service areas for visitors to public catering establishments, which are reflected in the quality of service of people with disabilities, are not adequately presented.

**Table 1.**  
**Total number of disabled people by disability groups in the Russian Federation**

Categories of disabled people	2012	2013	2014	2015	2016	2017	2018	2018 by 2012, in %
Total disabled persons, thousand people	13209	13189	13082	12946	12924	12751	12259	92.8
including: Group I	1540	1515	1496	1451	1355	1283	1309	85.0
Group II	7306	7076	6833	6595	6472	6250	5920	81.0
Group III	3822	4038	4185	4320	4492	4601	4394	114.96
disabled children	541	560	568	580	605	617	636	117.56
The total number of people with disabilities per 1,000 people	92.5	92.2	91.3	90.1	88.4	87.0	83.5	90.3

Revised Manuscript Received on October 30, 2019.

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The purpose of the study is to develop a method for analyzing the effective use of equipment and organization of a barrier-free environment at hospitality and catering enterprises for persons with disabilities.

We list only some requirements for the organization of services and accommodation of people with disabilities in the hotel or restaurant:

- The equipment of the territory. The width of the path along which disabled wheelchair users are traveling should be 1.5 m or more (to ensure the passage of strollers). High slopes should be avoided - the maximum slope should be taken at 4-6% (4-6 cm per 1 meter);
- Equipment of the entrance zone in the field of hospitality and catering. The entrance area of the hotel or restaurant should be equipped with a ramp (width 1-1,1 m, angle of inclination not more than 30-35 degrees). It is extremely important to provide the possibility of lifting on the elevator, but it is still necessary to place rooms for the disabled on the lowest floor, because in the event of a power outage or breakdown of the elevator, personal will have to transfer the guest on his hands. At the door of the room, there must be a free entrance (no obstacles on the way, and extended doorways). Over the entire area of the passage, should be installed special handrails;
- The room equipment. In the room designed for guests with disabilities, it is necessary to provide for the complete absence of doorsteps. All doorways should be at least 0.9 m wide. The doors are provided with a magnetic stop, which allows them to be fixed in the open state;
- Equipment for the hotel and restaurant areas. Accessibility of transport - a dedicated parking for disabled guests should be near each hotel. Availability of information. Any information, signs of accessibility, warning signs must be repeatedly represented in various ways - visual and sound, tactile, written in Braille's relief-dotted font and located so that people in the wheelchair can get access to it. The format of the inscriptions on the stands, the size, and style of the fonts should be such that even the smallest of them can be read without tension from a sitting position and from a distance of 2-2.5 m.

It is not always the position taken by the government, carried out at the enterprises of the hospitality and catering in the regions. An example is the Nizhny Novgorod region, an analysis of the territories of some enterprises in the hospitality and catering sector of the region showed inconsistency with the government standards. Therefore, it is necessary to develop a comprehensive solution to eliminate such violations in the hospitality and catering enterprises of the region.

## II. LITERATURE REVIEW

A method for the analysis of the coefficient of effective use of equipment for persons with disabilities, which falls under the definition of "bottleneck", which increases the intensity of the use of equipment, and optimizes the indicators of the time of operation of equipment by persons with disabilities.

Method for analyzing the coefficient of efficient use of equipment:

-Discloses and analyzes the indicator of the capacity of hospitality and public catering enterprises for a certain time;

Ensures transparency of the results, allows you to constantly monitor improvements and deficiencies in the process of serving people with disabilities, and after visiting a hotel or restaurant;

- Allows monitoring the efficiency and effectiveness of the maintenance of equipment for people with disability;
- Provides transparency of theoretical and actual performance for each production (restaurant) and territorial (hotel) facility;
- Allows to clearly plan actions to improve the efficiency and quality of care for people with disability;
- Allows to do a comparative analysis between hospitality and catering enterprises to identify best practices for working with people with disability.

The coefficient of useful use of equipment is formed from the following indicators:

- Total available time - the time during which the equipment can be used to serve persons with disability. The available time is calculated as the difference between the calendar time and the planned downtime: preventive maintenance, major repairs, downtime on orders (forced downtime caused by external circumstances).
- Working hours - the time during which the equipment is used to serve persons with disability. The working time is calculated as the difference between the total available time and the downtime caused by equipment breakdowns and the need for adjustment.
- Consumed time - the time of customer service, equal in fact to the number of customers - persons with disability, provided that the equipment operates with 100% efficiency - without interruptions and without reducing the intensity. The consumed time is calculated as the ratio of the actually served persons with the disability to the peak hour (the time of the largest influx of customers into a restaurant or hotel).
- Useful time - the time of customer service equal to the actual number of people with a disability served on the first call, with condition that equipment operates with 100% efficiency. The useful time is calculated as the ratio of the actually served persons with disability, to the number of placed consumers (persons with disability) from the first attempt to the peak hour (the time of the largest influx of customers into a restaurant or hotel).

## III. METHODOLOGY OF THE RESEARCH

Using these indicators, you can calculate the coefficients that characterize the operation of the equipment:

- Availability factor;
- Availability readiness;
- Coefficient of productivity;
- Quality factor.

Availability ratio of equipment hospitality and catering enterprises - characterizes the time during which the equipment was available, properly used and serviced by persons with disability.

The main types of losses affecting the availability of equipment are:

- External outages;
- Planned outages.

These downtimes do not depend on the condition of the equipment or people directly servicing this equipment.

External outages - stopping and unavailability of equipment for hard-to-forecast reasons do not depend on the equipment and personnel serving this equipment.

The reasons for external downtime may be: seasonal factors of clients' absence, accidents in the adjacent areas or lack of energy.

Planned downtime - are planned for a long period of time, schedules of planned outages are drawn up and their established norms.

To the planned downtime, it is advisable to classify two groups of downtime:

- Scheduled stop of equipment:

Usually involves stopping the equipment for pre-known reasons, at a predetermined time and period. The reasons for the planned shutdown of the equipment are external and usually do not depend on the condition of the equipment and are not affected by personnel directly working on this equipment or servicing it.

Typical examples of such stops are: absence of orders; inventory; experiments; equipment stops caused by labor legislation; stopping the equipment on the order of the head of the enterprise; modernization; other stops by order.

- Scheduled maintenance of equipment.

Planned shutdown of equipment for maintaining performance and productivity at the required level. Conducting routine maintenance of equipment is necessary to prevent extraordinary situations. All stops for repair maintenance of equipment are normalized in duration, they have a pre-compiled and approved schedule, a list of necessary works.

Examples of planned maintenance of equipment are: major repairs and preventive maintenance.

The main indicator characterizing the availability factor is the available time.

The time available is the difference between the calendar time and the time of planned and external outages.

Equipment availability ratio - characterizes the time during which the equipment was ready for use by persons with disability to meet their needs or service.

There are two types of losses that affect the availability of equipment:

- Equipment breakdowns - to a category of downtime caused by equipment shutdown due to abnormal situations, failure, inability to perform the process without additional time for troubleshooting (replacement or repair).

Breakdowns are usually divided according to the equipment that caused the stop.

The amount of downtime caused by equipment breakdown is normalized.

- Revamping - stopping the equipment due the need to change the settings of the equipment, as well as to replace the coating or material in accordance with applicable rates of consumption.

Adjustments include: adjustment and replacement of operated equipment. The main indicator that characterizes the availability of equipment is working time.

The equipment performance ratio is the comparison of the actual volume of the serviced persons with the disability with the volume that should have been produced in the same period of time, provided that the performance standards are met.

The equipment performance factor is affected by two types of losses:

- Breaks in work - loss of speed of placement or customer service, due to the need for additional adjustment during the operation of the equipment, measurement of process parameters, as well as unavailability of personnel to perform the operation. The process of receiving guests, does not lead to the breakdown of equipment.

It is advisable to distinguish the following types of interruptions in work: Parameter measurements, additional adjustment of equipment during operation and downtime for staff;

Usually, interruptions in work take a small amount of time, but with a systematic occurrence can lead to significant loss of productivity.

- Loss of speed - the equipment operates at a speed lower than the contractual operating speed.

There are several reasons for reducing the speed of the equipment: unsatisfactory quality of service at a higher speed and the staff does not know that you can service faster.

The main indicator characterizing the equipment performance coefficient is the consumed time.

The quality factor is a comparison of the time spent on servicing a guest taken at the first attempt. Service that meets the requirements of the original order.

The quality factor indicates the losses caused by the insufficient quality of the service provided to persons with disability.

Losses associated with inappropriate equipment for servicing persons with disability, failure to comply with government standards for servicing persons with disability.

Losses in the case of repeated maintenance increase in proportion to the number of times the consumer passes equipment for persons with disability. One return for the consumer is double losses (penalties), two returns are triple, etc.

The main parameter that characterizes the quality factor is the useful time.

Factor of effective use of equipment (EUE).

For example, the coefficient of effective use of equipment for persons with disability № 1:

$$EUE_1 = \frac{PV}{CFT} = K_\delta \cdot K_\epsilon \cdot K_n \cdot K \quad (1)$$

where, PV is a useful time;

CFT - A calendar fund of time;

$K_\delta$  - Coefficient of availability of equipment;

$K_\epsilon$  - Equipment readiness ratio;

$K_n$  - Coefficient of equipment performance;

$K$  - Quality factor.

This coefficient analyzes the efficiency of work taking into account the influence of planned and external downtime.

Scope of EUE № 1: for making managerial decisions by the average and senior management of a hotel or restaurant.

Typical reporting period - a week or longer

Factor of effective use of equipment No. 2:

$$EUE_2 = \frac{PV}{RF} = K_\delta \cdot K_n \cdot K_\kappa \quad (2)$$

where, RF is the available time.

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This coefficient analyzes the efficiency of work without considering the influence of planned and external downtime.

Application area of EUE № 2: to make managerial decisions at the shift level and up to middle-level management.

A typical period under consideration is a shift/day.

## IV. ANALYSIS RESULT

The method of analyzing the efficiency of the use of equipment for people with disability allows to provide better conditions from the guest services and catering for various groups of disabilities and, most importantly, to persons first recognized as disabled in the Nizhny Novgorod region, whose adaptation in society is of key importance.

Practical use of the proposed developments for the analysis of the effective of the use of equipment for persons with disability is examined in the example of the Nizhny Novgorod Sheraton service company.

The coefficients of effective use of equipment for persons with disability № 1 and № 2 were calculated (see table

**Table 2.**  
**Indicators of effective use of equipment for persons with disability**

Indicators	as of January 1, 2019	as of February 1, 2019	as of March 1, 2019	as of April 1, 2019	as of May 1, 2019
EUE №1	0,78	0,81	0,8	0,82	0,82
EUE №2	0,83	0,85	0,85	0,87	0,86

The analysis of the coefficients showed that the equipment for people with disability is not used in full, due to equipment downtime and long setup times. It was also revealed the need to purchase additional equipment for persons with disability in the hotel rooms.

Many enterprises of hospitality and catering in the Nizhny Novgorod region, using the method of analyzing the efficiency of using equipment for people with disability, will have competitive advantages and opportunities to analyze the availability of equipment, equipment malfunctions, the intensity of use, and compliance with government standards, thereby attracting a larger percentage of consumers.

## V. CONCLUSION

Based on the analysis, incompetent employees of the hospitality and catering enterprises are identified who might receive and work with disabled persons. An analysis of some enterprises in the hospitality and catering sector has shown the need to specifically train staff to work with disabled people and the equipment necessary to service them. In the job descriptions of the staff at different levels it is worth including a clause on assistance to people with disabilities and motivation based on their effective service.

According to statistics, 70% of special needs do not manifest themselves in any way, so it is important to develop instructions for the staff of hospitality and catering enterprises to interact with guests with a disability with special needs and equipment. And also instructions for the guest and the visitor on interaction with the personnel of the hospitality and catering enterprises, as many of them do not even know what help they can get and how to inform the personnel of the enterprise about it.

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