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Challenges of Planning for Facilities for People with Disabilities in Public Buildings

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The latest research conducted by WHO and ILO found that access facilities in developing countries can only be reached by 20-30 percent people with disabilities. Globally, the number of people with disabilities reaches 650 million people. The contribution of planners and construction service providers in efforts to facilitate access for people with disabilities to public services is still limited, because builders still consider the provision of facilities to be a burden. In addition, builders still have limited information and understanding in building facilities for people with disabilities. Hence, many public buildings do not cater to the needs of groups of people with disabilities. It is essential to understand challenges faced in planning facilities for people with disabilities, to be able to provide information to construction parties regarding planning stages and conceptual formulations in developing facility for disabled people. This study aims to determine the considerations and constraints encountered during the planning and implementation stages of the facilities for people with disabilities. The method used was descriptive qualitative method to obtain conceptual model regarding considerations and recommendations for planning the facilities for people with disabilities. The results of this research are to find out considerations and constraints during the implementation and the stages in planning for disabled facilities.

Keywords: Planning, Constraints, Disabled Persons, Public Buildings.

A. Introduction

Ministry of Public Works has issued regulation no 30/PRT/M/2006 regarding Technical Guideline for Facilities and Accesibility in Building and Environmental Built. Raharjo in Utami (2018) revealed that efforts to protect people's rights with disabilities had been stated through laws and other regulations. However, until now, they still do not receive proper education and health services. Sudirman, expert staff of the Minister for Socio-Culture and Community Role conveyed, "Planning and development strategies, especially in urban areas which is possible for all, in particular for people with disabilities, need special attention and efforts to increase the competitiveness of the city". (Antares, 2019)

The importance of facilities availability for people with disabilities will increase the services value for the community in public buildings. The problem is that planners and construction service providers have not

optimally paid attention to it. Then, to realize the guarantee of the disabled's rights in obtaining equality in development progress, it is necessary to create inclusive development. The purpose of the research was to understand the challenges of planning facilities for people with disabilities in public buildings and formulate themes related to the stages in its planning.

The method used was descriptive qualitative, by seeking information by interviewing the persons who play a role in the building construction field. This research is expected to be useful for construction services and planning consultants by providing input regarding the challenges found in the planning facilities for people with disabilities.

Previous research related to this writing topic was conducted by Dewang & Leonardo (2010), by assessing and analyzing elements of facilities and accessibility in Taman Senopati Menteng. Their research found several problems that

caused implementation of accessibility for people with disabilities to be ineffective. Furthermore, research conducted by Pasar Aceh Irfan et al., (2017) examined that 50% and 65% of respondents answered that the building's condition was unsafe and uncomfortable for the elderly and people with disabilities. Related to this result, the key informant (building manager) confirmed that before the construction implementation, the related parties had discussed with persons with disabilities. However, the contractor was changed during construction, so the plan was changed.

Based on previous studies, no research explicitly explains the challenges of the planning process for the availability of facilities for the disabled in public buildings.

B. Literature Review

Mujimin (2007) states that disabled is a term translated from disability, which means people with different abilities. The difference between the meaning of disabled and disability is that disability describes a person inability to carry out an activity. However, the term disable describes someone who can do it differently. According to Law No. 8 of 2016 article 1, disable persons or persons with disabilities are any person who experiences physical, intellectual, mental and/or sensory limitations for a long time. When interacting with the environment, they will experience obstacles and difficulties to participate fully and effectively with other citizens based on equal rights. Types of Persons with disabilities according to Law No.8 of 2016 include:

1. Persons with physical disabilities;
2. People with intellectual disabilities;
3. People with mental disabilities; and/or
4. People with sensory disabilities.

Pynkyawati et al., (2012) stated that persons with disabilities need to meet their

daily needs and need to get special treatment in the community, both in the building and around the building, not to experience difficulties and can interact with wider communities. The Ministry of Public Works has issued Law No. 28, 2002 concerning Buildings and Ministerial Regulation Number 30/PRT/M/2006 concerning Technical Guidelines for Facilities and Accessibility in Buildings and the Environment with the consideration that persons with disabilities have the right to use public facilities and carry out activities outside the house. Also, they have the same rights to meet their daily needs from public service facilities with adequate and appropriate access.

Following are elements of supporting facilities for disabilities persons in buildings and its surrounding as well as technical requirements according to the Minister of Public Works Regulation number 30 / PRT / M / 2006:

Table 2.1 Facilities for disabilities persons

Building	Building Footprint
Basic Room Size	Parking Area
Door	Ramp
Ramp	Signs and Markers
Stairs	
Lift	
Stair Lift	
Toilet	
Sink	
Telephone	
Furniture	
Equipment and Control Equipment	
Signs and Markers	

(Source: Sary & Kamil, 2018)

The building construction process consists of the following stages (Dipohusodo in Puteri (2019: 11-13))

1. Concept Development
2. Planning
3. Tender
4. Construction Execution
5. Operation

In general, the problems faced during the implementation of building project construction include the mismatch between the organization and the applied management system with the technical challenges faced (Dipohusodo, 1996: 213). Implementing practical building construction, including planning for disabled facilities, requires a coordinative organization to control its management functions.

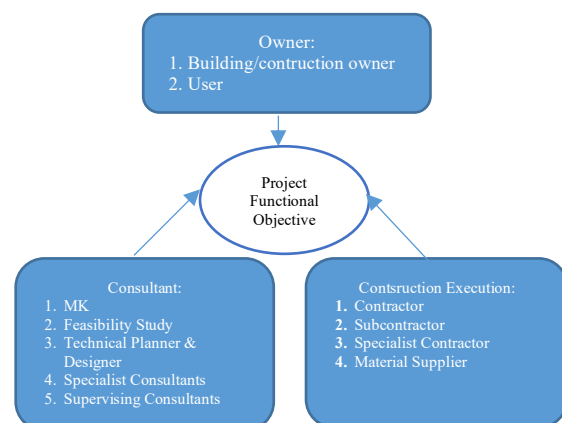


Illustration 2.1. The Parties Involved in Construction
(Source: Iwan Lie, 2018:2).

C. Method

This study used a post-positivism paradigm and a qualitative descriptive method. The first step was a literature study on theories related to facilities planning for disabilities people, followed by interviews of experts. It was believed that by using the post-positivism paradigm in the verification process, various methods could be utilized more flexibly (Pinggi, 2013). The second stage, the results of literature studies and interviews, are described in reports on precedent studies and interview reports. The researcher made specific coding on each sentence in the essay. In this case, each sentence was a unit of information. Units of information that have the same or similar meaning were then classified inductively into themes. In this article, the themes are described in the research findings sub-chapter, all of which are related to the

results of interviews regarding considerations and obstacles faced in planning facilities for them.

D. Research Findings

Interviews conducted with several architects, planners, contractors, and owners to construct public buildings shows a common opinion and experience of the parties involved in constructing several functions of public buildings. The similarity of opinion is summarized into a conceptual model in constructing disabilities facilities in public buildings.

Five essential considerations need to be considered in planning facilities for disabilities persons in public buildings, namely principles and regulation, space, the leading facilities for them, cost, and awareness. The following is explanation of each of these considerations.

1. Principles and Regulation

Before designing facilities for disabilities people, planners need to consider the principles and regulations that the government has issued. The provisions regarding technical guidelines are contained in the Minister of Public Works Regulation number 30 / PRT / M / 2006. The planner need to pay attention to the following:

- Safety, every public building must pay attention to the safety of all people, including persons with disabilities.
- Convenience, every development plan must pay attention to ease of access to all facilities outside the building and in buildings that are public in an environment.
- Usefulness, everyone including persons with disabilities, can use all places and facilities familiar in an environment.
- Independence, everyone, including persons with disabilities, must reach, enter and use all places and facilities

in public buildings without the need for help from others.

2. Space

The provision of space in facilities for people with disabilities is included in planners' and builders' considerations and constraints. Usually, the owner prioritizes room functions that produce high productivity or for ordinary people. According to the standard, facilities for people with disabilities have specific rooms with different sizes and dimensions of space.

3. The Main Facilities for Disabilities

Expert sources stated that some facilities for persons with disabilities should be accessible together as shared spaces just like for ordinary people. The addition of specification for disabled persons should not be a burden to owners or builders. The facilities are:

- Ramp, which needs to be located at each entrance to the lobby or vehicle drop-off area,
- Toilet for the disabilities,
- Lift that can be accessed together, with a size adapted to wheelchair users,
- Particular parking lot for the disabilities.

In addition to the above provisions, planners need to pay attention to aesthetics inside and outside the building.

4. Cost

Considerations and constraints often experienced not only in planning facilities for disabilities people, but also in every construction, cost consideration is always important. In every public development, there are management parties with individual interests. There is a ratio of the circulation area and sales

area, where the owner will prioritize space that generates profits or takes sides with business interests. However, according to the planning architect, the cost of providing disabilities facilities actually is not very significant in the development budget.

5. Awareness

The parties involved in the development, including the government, need to know the importance of providing facilities for persons with disabilities. The government needs to increase attention to providing facilities for people with disabilities (SMERU, 2019).

One of the expert architects stated that the weakness in implementing facilities for disabilities people was caused by the absence of the obligation to fulfill these requirements in the construction permit. Therefore, what needs to be done is to increase policy oversight through a particular institution whose function is to oversee the consistency of the implementation of disabled facilities in public buildings. The government needs to focus more on providing equality in public services for all. The contractor's source stated that architect is responsible for reminding and providing knowledge or insight to the owner's design for all people's requirements. The fact shows that the lack of architects' attention to the importance of providing facilities for disabilities people in the design of public buildings is related to a shift in disability-friendly design thinking with trendy designs in the last five years, such as green concepts, minimalist designs, energy-saving, and others. Planning architects need to familiarize themselves with disability-friendly designs by targeting people with disabilities as building users.

Based on the research finding, here are the resume of provisions for each public building in various functions, both commercial buildings such as hotels, malls, offices, apartments and in the form of houses of worship, government services:

1. Facilities for disabilities people that must be available in public buildings are: 1) Ramp, at each lobby entrance or vehicle drop off area. It is the primary support for access to the building for wheelchair users; 2) Toilet for the disabilities, with a size that fits wheelchair users. The minimum area of toilet space with a width of 160 cm and length of 240 cm; 3) Shared lift, sized to suit the wheelchair users, to support vertical accessibility in buildings, and 4) special parking for the disabilities.
2. There are five stages of essential activity in planning process from the very beginning of designing to development.

First stage: Concept Development

At this stage the planning and owner consultants need to do the following:

- a. Survey and field investigation
- b. Understand the principles and rules,
- c. List the prices of materials and wages for work in the local area,
- d. Formulate construction strategies

Second stage: Preparation of design planning

The parties of planning consultants and the government in development licensing must do the following:

- a. Prepare pre-design,
- b. Determine disabled facilities types,
- c. Calculate the rooms area that sufficient for disabilities people,
- d. Develop final planning and design,
- e. Process development permits

Third stage: Preparation of cost budget

The consultants and owners have to estimate initial budget for construction and calculating:

- a. Cost for all facilities included facilities for disabilities people,
- b. Reasonable fixed costs for construction.

Fourth stage: Construction execution

At this stage, contractor, planning architect, and construction management monitor whether the implementation match or not with architectural drawings. In addition, they do the following:

- a. Adjust existing progress to the goal of final product,
- b. Control project construction.

Fifth stage: Operation (maintenance period)

At the maintenance period, the contractor still plays a role in implementing the installation trial and facility functions. The steps taken are testing the functions related to security, usability, independence, and convenience for people with disabilities of the facilities provided.

E. Conclusion and Recommendation

The considerations and constraints faced by the construction party in planning public facilities for disabilities people are related to: 1) lack of owner's awareness and understanding on the design for all people; 2) owner's attention is more focused on business needs with the relatively insignificant percentage of people with special needs; 3) procurement requirements facilities for people with special needs are relatively neglected; 4) procurement of space prioritizes the needs of ordinary people, assuming that greater profits result from visits of ordinary people; 5) Costs are allocated more to business interests.

Based on the research findings, the researchers recommend that: 1) the government establish a particular building licensing agency, whose task is to

supervise the implementation of the provision of facilities for people with disabilities in public buildings, 2) government provides periodic sanctions or warnings to building owners/managers who ignore the provision of disabled facilities in public buildings. 3) architect helps the owner/public to realize the need to provide facilities for disabilities people in public buildings.

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Challenges of Planning Diffable Facilities in Public Buildings

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²Challenges of Planning for Facilities for People with Disabilities in Public Buildings

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¹The latest research conducted by WHO and ILO found that access facilities in developing countries can only be reached by 20-30 percent people with disabilities. Globally, the number of people with disabilities reaches 650 million people. The contribution of planners and construction service providers in efforts to facilitate access for people with disabilities to public services is still limited, because builders still consider the provision of facilities to be a burden. In addition, builders still have limited information and understanding in building facilities for people with disabilities. Hence, many public buildings do not cater to the needs of groups of people with disabilities. It is essential to understand challenges faced in planning facilities for people with disabilities, to be able to provide information to construction parties regarding planning stages and conceptual formulations in developing facility for disabled people. This study aims to determine the considerations and constraints encountered during the planning and implementation stages of the facilities for people with disabilities. The method used was descriptive qualitative method to obtain conceptual model regarding considerations and recommendations for planning the facilities for people with disabilities. The results of this research are to find out considerations and constraints during the implementation and the stages in planning for disabled facilities.

Keywords: Planning, Constraints, Disabled Persons, Public Buildings.

A. Introduction

Ministry of Public Works has issued regulation no 30/PRT/M/2006 regarding Technical Guideline for Facilities and Accesibility in Building and Environmental Built. Raharjo in Utami (2018) revealed that efforts to protect people's rights with disabilities had been stated through laws and other regulations. However, until now, they still do not receive proper education and health services. Sudirman, expert staff of the Minister for Socio-Culture and Community Role conveyed, "Planning and development strategies, especially in urban areas which is possible for all, in particular for people with disabilities, need special attention and efforts to increase the competitiveness of the city". (Antares, 2019)

The importance of facilities availability for people with disabilities will increase the services value for the community in public buildings. The problem is that planners and construction service providers have not

optimally paid attention to it. Then, to realize the guarantee of the disabled's rights in obtaining equality in development progress, it is necessary to create inclusive development. The purpose of the research was to understand the challenges of planning facilities for people with disabilities in public buildings and formulate themes related to the stages in its planning.

The method used was descriptive qualitative, by seeking information by interviewing the persons who play a role in the building construction field. This research is expected to be useful for construction services and planning consultants by providing input regarding the challenges found in the planning facilities for people with disabilities.

Previous research related to this writing topic was conducted by Dewang & Leonardo (2010), by assessing and analyzing elements of facilities and accessibility in Taman Senopati Menteng. Their research found several problems that

caused implementation of accessibility for people with disabilities to be ineffective. Furthermore, research conducted by Pasar Aceh Irfan et al., (2017) examined that 50% and 65% of respondents answered that the building's condition was unsafe and uncomfortable for the elderly and people with disabilities. Related to this result, the key informant (building manager) confirmed that before the construction implementation, the related parties had discussed with persons with disabilities. However, the contractor was changed during construction, so the plan was changed.

Based on previous studies, no research explicitly explains the challenges of the planning process for the availability of facilities for the disabled in public buildings.

B. Literature Riview

Mujimin (2007) states that disabled is a term translated from disability, which means people with different abilities. The difference between the meaning of disabled and disability is that disability describes a person inability to carry out an activity. However, the term disable describes someone who can do it differently. According to Law No. 8 of 2016 article 1, disable persons or persons with disabilities are any person who experiences physical, intellectual, mental and/or sensory limitations for a long time. When interacting with the environment, they will experience obstacles and difficulties to participate fully and effectively with other citizens based on equal rights. Types of Persons with disabilities according to Law No.8 of 2016 include:

1. Persons with physical disabilities;
2. People with intellectual disabilities;
3. People with mental disabilities; and/or
4. People with sensory disabilities.

Pynkyawati et al., (2012) stated that persons with disabilities need to meet their

daily needs and need to get special treatment in the community, both in the building and around the building, not to experience difficulties and can interact with wider communities. The Ministry of Public Works has issued Law No. 28, 2002 concerning Buildings and Ministerial Regulation Number 30/PRT/M/2006 concerning Technical Guidelines for Facilities and Accessibility in Buildings and the Environment with the consideration that persons with disabilities have the right to use public facilities and carry out activities outside the house. Also, they have the same rights to meet their daily needs from public service facilities with adequate and appropriate access.

Following are elements of supporting facilities for disabilities persons in buildings and its surrounding as well as technical requirements according to the Minister of Public Works Regulation number 30 / PRT / M / 2006:

Table 2.1 Facilities for disabilities persons

Building	Building Footprint
Basic Room Size	Parking Area
Door	Ramp
Ramp	Signs and Markers
Stairs	
Lift	
Stair Lift	
Toilet	
Sink	
Telephone	
Furniture	
Equipment and Control Equipment	
Signs and Markers	

(Source: Sary & Kamil, 2018)

The building construction process consists of the following stages (Dipohusodo in Puteri (2019: 11-13))

1. Concept Development
2. Planning
3. Tender
4. Construction Execution
5. Operation

In general, the problems faced during the implementation of building project construction include the mismatch between the organization and the applied management system with the technical challenges faced (Dipohusodo, 1996: 213). Implementing practical building construction, including planning for disabled facilities, requires a coordinative organization to control its management functions.

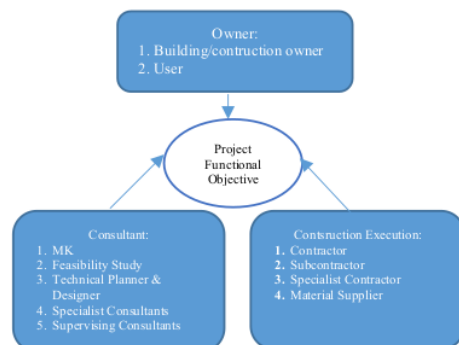


Illustration 2.1. The Parties Involved in Construction
(Source: Iwan Lie, 2018:2).

C. Method

This study used a post-positivism paradigm and a qualitative descriptive method. The first step was a literature study on theories related to facilities planning for disabilities people, followed by interviews of experts. It was believed that by using the post-positivism paradigm in the verification process, various methods could be utilized more flexibly (Pinggi, 2013). The second stage, the results of literature studies and interviews, are described in reports on precedent studies and interview reports. The researcher made specific coding on each sentence in the essay. In this case, each sentence was a unit of information. Units of information that have the same or similar meaning were then classified inductively into themes. In this article, the themes are described in the research findings sub-chapter, all of which are related to the

results of interviews regarding considerations and obstacles faced in planning facilities for them.

D. Research Findings

Interviews conducted with several architects, planners, contractors, and owners to construct public buildings shows a common opinion and experience of the parties involved in constructing several functions of public buildings. The similarity of opinion is summarized into a conceptual model in constructing disabilities facilities in public buildings.

Five essential considerations need to be considered in planning facilities for disabilities persons in public buildings, namely principles and regulation, space, the leading facilities for them, cost, and awareness. The following is explanation of each of these considerations.

1. Principles and Regulation

Before designing facilities for disabilities people, planners need to consider the principles and regulations that the government has issued. The provisions regarding technical guidelines are contained in the Minister of Public Works Regulation number 30 / PRT / M / 2006. The planner need to pay attention to the following:

4.
 - Safety, every public building must pay attention to the safety of all people, including persons with disabilities.
 - Convenience, every development plan must pay attention to ease of access to all facilities outside the building and in buildings that are public in an environment.
 - Usefulness, everyone including persons with disabilities, can use all places and facilities familiar in an environment.
 - Independence, everyone, including persons with disabilities, must reach, enter and use all places and facilities

in public buildings without the need for help from others.

2. Space

The provision of space in facilities for people with disabilities is included in planners' and builders' considerations and constraints. Usually, the owner prioritizes room functions that produce high productivity or for ordinary people. According to the standard, facilities for people with disabilities have specific rooms with different sizes and dimensions of space.

3. The Main Facilities for Disabilities

Expert sources stated that some facilities for persons with disabilities should be accessible together as shared spaces just like for ordinary people. The addition of specification for disabled persons should not be a burden to owners or builders. The facilities are:

- Ramp, which needs to be located at each entrance to the lobby or vehicle drop-off area,
- Toilet for the disabilities,
- Lift that can be accessed together, with a size adapted to wheelchair users,
- Particular parking lot for the disabilities.

In addition to the above provisions, planners need to pay attention to aesthetics inside and outside the building.

4. Cost

Considerations and constraints often experienced not only in planning facilities for disabilities people, but also in every construction, cost consideration is always important. In every public development, there are management parties with individual interests. There is a ratio of the circulation area and sales

area, where the owner will prioritize space that generates profits or takes sides with business interests. However, according to the planning architect, the cost of providing disabilities facilities actually is not very significant in the development budget.

5. Awareness

The parties involved in the development, including the government, need to know the importance of providing facilities for persons with disabilities. The government needs to increase attention to providing facilities for people with disabilities (SMERU, 2019).

One of the expert architects stated that the weakness in implementing facilities for disabilities people was caused by the absence of the obligation to fulfill these requirements in the construction permit. Therefore, what needs to be done is to increase policy oversight through a particular institution whose function is to oversee the consistency of the implementation of disabled facilities in public buildings. The government needs to focus more on providing equality in public services for all. The contractor's source stated that architect is responsible for reminding and providing knowledge or insight to the owner's design for all people's requirements. The fact shows that the lack of architects' attention to the importance of providing facilities for disabilities people in the design of public buildings is related to a shift in disability-friendly design thinking with trendy designs in the last five years, such as green concepts, minimalist designs, energy-saving, and others. Planning architects need to familiarize themselves with disability-friendly designs by targeting people with disabilities as building users.

Based on the research finding, here are the resume of provisions for each public building in various functions, both commercial buildings such as hotels, malls, offices, apartments and in the form of houses of worship, government services:

1. Facilities for disabilities people that must be available in public buildings are: 1) Ramp, at each lobby entrance or vehicle drop off area. It is the primary support for access to the building for wheelchair users; 2) Toilet for the disabilities, with a size that fits wheelchair users. The minimum area of toilet space with a width of 160 cm and length of 240 cm; 3) Shared lift, sized to suit the wheelchair users, to support vertical accessibility in buildings, and 4) special parking for the disabilities.
2. There are five stages of essential activity in planning process from the very beginning of designing to development.

First stage: Concept Development

At this stage the planning and owner consultants need to do the following:

- a. Survey and field investigation
- b. Understand the principles and rules,
- c. List the prices of materials and wages for work in the local area,
- d. Formulate construction strategies

Second stage: Preparation of design planning

The parties of planning consultants and the government in development licensing must do the following:

- a. Prepare pre-design,
- b. Determine disabled facilities types,
- c. Calculate the rooms area that sufficient for disabilities people,
- d. Develop final planning and design,
- e. Process development permits

Third stage: Preparation of cost budget

The consultants and owners have to estimate initial budget for construction and calculating:

- a. Cost for all facilities included facilities for disabilities people,
- b. Reasonable fixed costs for construction.

Fourth stage: Construction execution

At this stage, contractor, planning architect, and construction management monitor whether the implementation match or not with architectural drawings. In addition, they do the following:

- a. Adjust existing progress to the goal of final product,
- b. Control project construction.

Fifth stage: Operation (maintenance period)

At the maintenance period, the contractor still plays a role in implementing the installation trial and facility functions. The steps taken are testing the functions related to security, usability, independence, and convenience for people with disabilities of the facilities provided.

E. Conclusion and Recommendation

The considerations and constraints faced by the construction party in planning public facilities for disabilities people are related to: 1) lack of owner's awareness and understanding on the design for all people; 2) owner's attention is more focused on business needs with the relatively insignificant percentage of people with special needs; 3) procurement requirements facilities for people with special needs are relatively neglected; 4) procurement of space prioritizes the needs of ordinary people, assuming that greater profits result from visits of ordinary people; 5) Costs are allocated more to business interests.

Based on the research findings, the researchers recommend that: 1) the government establish a particular building licensing agency, whose task is to

supervise the implementation of the provision of facilities for people with disabilities in public buildings, 2) government provides periodic sanctions or warnings to building owners/managers who ignore the provision of disabled facilities in public buildings. 3) architect helps the owner/public to realize the need to provide facilities for disabilities people in public buildings.

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