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Behavioural Aspects of Multiple Criteria Group Decision Making in the Process of Creating a Cultural Tourism Product Regarding Prehistory

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Presentation agenda

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- Purpose of the presentation
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- Prehistoric cultural heritage of the Będzin County
- Behavioural aspects of decision-making
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Premises for taking up the problem

- The **process of creating** local or regional **cultural tourism products** (CTPs) has a **multifarious nature**:
 - **various means** and **resources** involved,
 - **multi-level character** of the **owners** of these resources,
 - **various stakeholders**,
 - the **specificity of CTPs** -> **properly selected stakeholders** of the **Group Decision Making** (GDM),
 - different **objectives**, evaluation **criteria** and **preferences**.

Purpose of the presentation

- The **objectives** are:
 - selected **aspects** of the **behavioural approach** to decision-making including **GDM**,
 - **concept** of a **behavioural approach** to **GDM** by many stakeholders in the process of creating a **CTP** — the **idea** of an **innovative solution** is a case study of a **planned product concerning the prehistory** of the Będzin County.

Definitions

- To make better understanding of the presented area it is important to define some phrases:
 - **tourism product** means: *a combination of **tangible** and **intangible elements**, such as natural, cultural and **man-made resources**, **attractions**, **facilities**, **services** and **activities** around a specific center of interest which represents the core of the **destination marketing mix** and creates an overall **visitor experience** including **emotional aspects** for the potential customers [www 1].*

Definitions

- **Man Made Tourism Products:** created by man for **experiencing culture, cultivating tradition, pleasure, leisure** or **business**.
- In particular, they are **products** connected with **culture**:
 - Sites and areas of archaeological interest
 - Historical buildings and monuments
 - Places of historical significance
 - Museums and art galleries
 - Religious institutions
 - etc. [www 2]

Prehistoric cultural heritage of the Będzin County

- **Prehistoric cultural heritage** in the present Będzin County:
 - Many **places, points, traces, remains, archaeological works and sites.**
 - **40,000-14,000 B.C.** (Old Stone Age) -> **early civilisation beginnings.**
 - **over 90 sites related to the prehistoric heritage** from the **Stone Age** through the **Iron Age** to the **ancient heritage** up to around **the 5th century A.D.**

Prehistoric cultural heritage of the Będzin County

- The **potential**:
 - prehistoric **cemeteries**,
 - defensive **settlements**,
 - traces, points of **residential settlements**,
 - solitary archaeological **findings**,
 - **unknown type** of archaeological site.
- The **specificity** of **prehistoric heritage** + **specific features** of **CTP** -> **multi-faceted view: research methodology** + **multiple criteria decision support**.

Behavioural aspects of decision-making

- The **starting point** -> **make the concept** of behavioural economics **clear and explicit**.
- There are many explanations what are behavioural aspects of decision-making.
- Lin [2012] says that: ***Behavioral economics** studies the **effects** of **psychological, cognitive, emotional, cultural** and **social factors** on the **economic decisions** of **individuals** and **institutions** and how those decisions vary from those implied by classical theory.*

Behavioural aspects of decision-making

- Shefrin [2002] points to **3 main areas** (topics) of interest in this economy:
 - **Heuristics:** 95% of decisions — use of mental shortcuts or rules of thumb.
 - **Framing** use of stereotypes and generalisations -> reaction to events and understanding phenomena using some kind of „filter“
 - **Market inefficiencies.** mis-pricing and non-rational decision-making.mm
- Point of view of author's modeling -> the **first** and the **second** will be the subject of interest

Herbert Simon's concept of behavioural decision-making

- **Breaking the arguments** of the "**homo oeconomicus**" concept and claiming:
 - **decision-makers** may have **partial knowledge** of **alternative options** and the **consequences** of their choice,
 - the means and objectives to be achieved are characterised by the so-called **imperfect diversification, incomplete connection** and **poor detailing**.
- **Foundations** for the **theory of bounded rationality**. Revising the model of the "economic man" characterised by:

Herbert Simon's concept of behavioural decision-making

- the **ability** to automatically **update ideas** about **probability** with the **inflow** of **new information** (Bayes' theorem),
- behaviour consistent with the assumptions of the **normative theory** of **expected utility** (the von Neumann-Morgenstern utility theorem).
- Simon's **concept of bounded rationality** questions the **principle of utility maximisation** -> **various internal** and **external limitations** of the **decision-maker**.

Herbert Simon's concept of behavioural decision-making

- Defining the **concept** of **bounded rationality** (procedural/contextual) -> taking into account:
 - the **availability of information**,
 - **cognitive limitations** of the **decision maker**.

Other concepts of behavioural decision-making

- **Simon's research work and concepts in behaviourism -> inspiration** for (among others) **Daniel Kahneman** and **Amos Tversky**.
- The Kahneman's and Tversky's **prospect theory -> direct reference** to **Simon's concept**:
 - **people show aversion to losses -> people do not like losses more than equivalent profits,**
 - people prefer to **take risks to avoid losses.**

Other concepts of behavioural decision-making

- **Applications** of the **prospect theory** -> **various conditions** and economic **situations**, such as **choices in consumption**, labor supply and insurance [Barberis 2013].
- It is opportunity to **make an analogy to consumption in cultural tourism**, and thus to the **choice of a specific CTP**.
- Tversky's and Kahneman's [2000] **effect of framing** -> **compatible** with **Simon's concept of bounded rationality**.

Other concepts of behavioural decision making

- **Different perception** of a behavioural decision-making -> **theory of intertemporal choice: making decisions and having the effects in another time.**
- The **behaviour** of the **human individual** is **inconsistent**. George Ainslie [1991] provides **hyperbolic discounting** as an **example** of such behaviour.
- **Hyperbolic discounting: tendency of choosing a smaller, earlier prize** in exchange for a **larger subsequent reward.**

The model of the behavioural approach to GDM in the process of creating a CTP concerning the prehistory of Będzin County

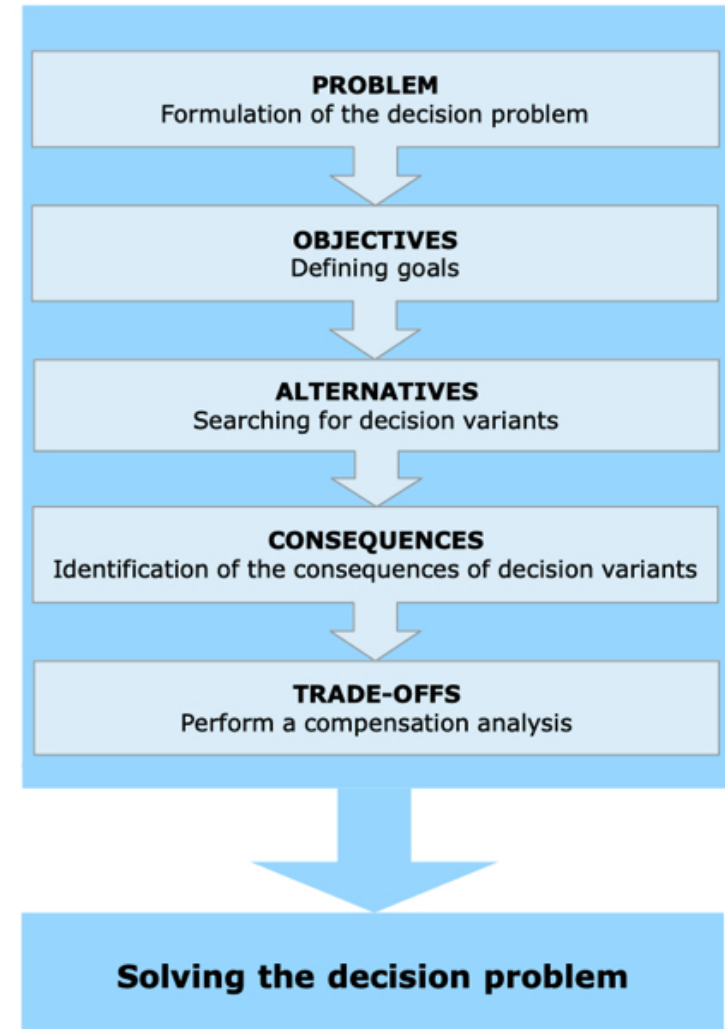
- **Selected behavioural approaches** are the **basis** for building a **hybrid model** of GDM.
- Multiple Criteria Group Decision Making (**MCGDM**) in the **process of creating a CTP**, enriched with the **behavioural aspects**, determines the opportunity:
 - **to implement Simon's approach,**
 - to add other concepts:
 - **Kahneman's and Tversky's prospect theory,**
 - **theory of intertemporal choice.**

The model of the behavioural approach to GDM in the process of creating a CTP concerning the prehistory of Będzin County

- The **methodological apparatus** will have to take into account the following **methods**:
 - **Soft OR -> decision problems structuring**
 - **Multiple Criteria Decision Analysis -> analysis of preferences**
 - **GDM -> aggregation of preferences**
 - **Behavioural OR:**
 - > identify **information processing styles,**
 - > **stakeholder cognitive limitations,**
 - > adapt **formal support methods.**

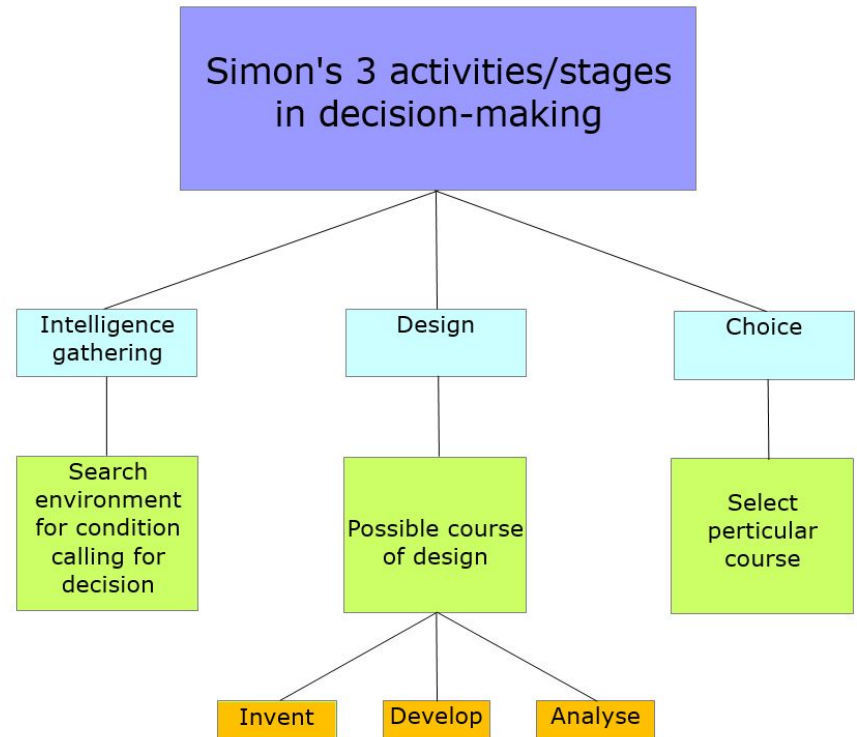
The model of the behavioural approach to GDM in the process of creating a CTP concerning the prehistory of Będzin County

- Analogies between **Simon's view of the decision-making process** and the **methods of structuring problems**.
- **PrOACT** algorithm (**P**roblem, **O**bjectives, **A**lternatives, **C**onsequences, **T**rade-offs) ends in solving the decision problem.



The model of the behavioural approach to GDM in the process of creating a CTP concerning the prehistory of Będzin County

- Some kind of similarity of **PrOACT** approach to **Simon's concept**:
 - **Obtaining** (acquiring) information
 - **Designing** (planning)
 - **Making a choice**



The model of the behavioural approach to GDM in the process of creating a CTP concerning the prehistory of Będzin County

- The **MCGDM** regarding **various decision constraints**:
 - **Cognitive limitations.**
 - Various **purposes**, evaluation **criteria** and stakeholders **preferences**.
 - Use of **heuristics**.
 - **Knowledge limitations** of all **alternative variants** of CTP.
 - **Solving complex system problems.**
 - Breaking **stereotypes, behaviours, thinking styles** etc.

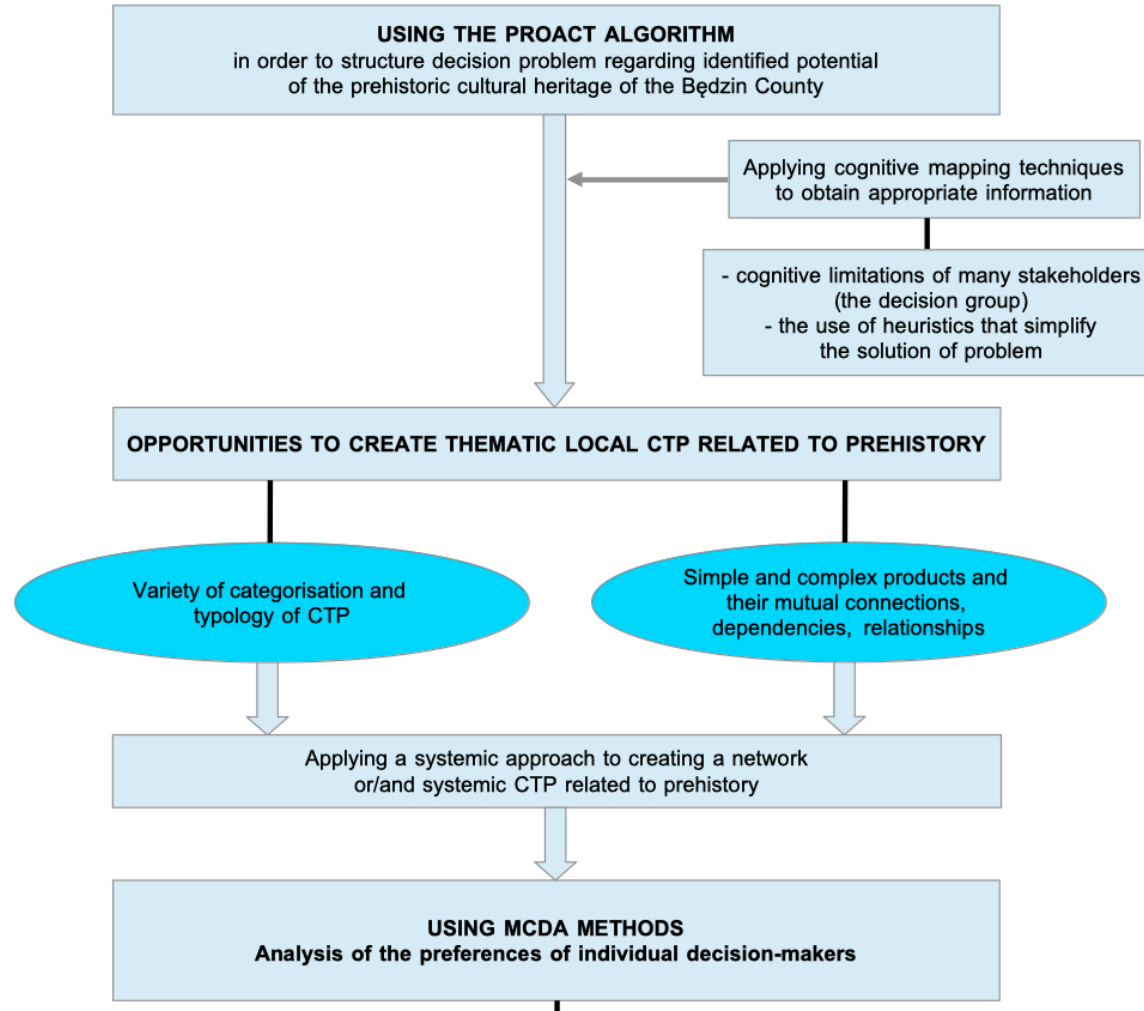
The model of the behavioural approach to GDM in the process of creating a CTP concerning the prehistory of Będzin County

- The researcher's **proposal**:
 - Designing an **integrated, hybrid behavioural approach to decision-making** -> idea of new **MCBGDM**),
 - Creating the **model** (including alternatively):
 - Herbert Simon's **concept of bounded rationality**,
 - **concept of intertemporal choice**,
 - **Kahneman's and Tversky's prospect theory**.

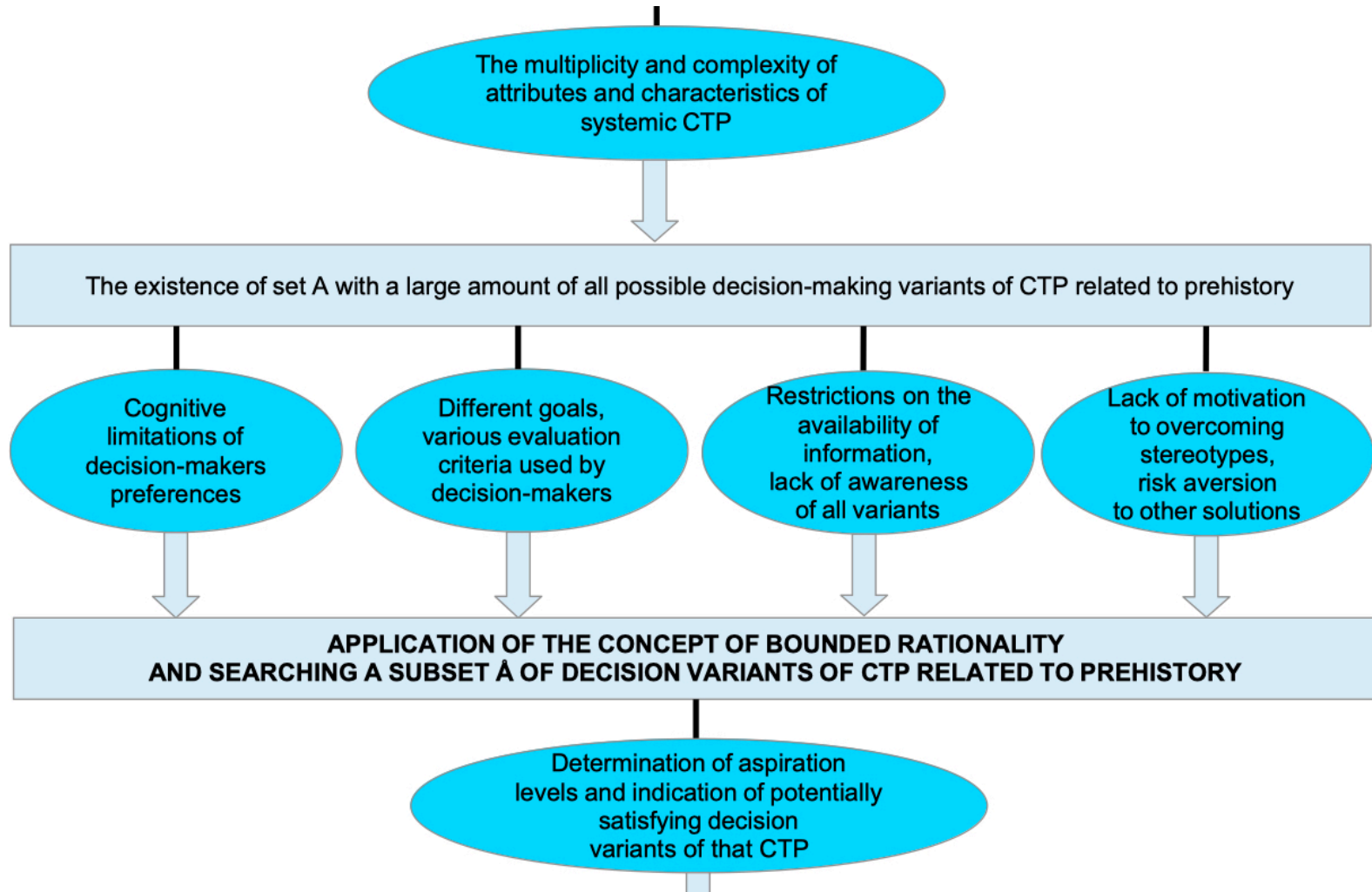
The model of the behavioural approach to GDM in the process of creating a CTP concerning the prehistory of Będzin County

- The researcher's contribution is:
 - **Developing a behavioural approach model** regarding **situational context, preference structures, perception** of the **decision problem** etc.
 - **Application** of a **model approach** in **cultural tourism** with its highly **specific products**.
 - **Planned use** of an **interactive decision experiment**:
 - to obtain information on ways (intuitive and supported by GDM) to **create CTP**,
 - **choose the best** or **sufficiently satisfactory variant** of such a product.

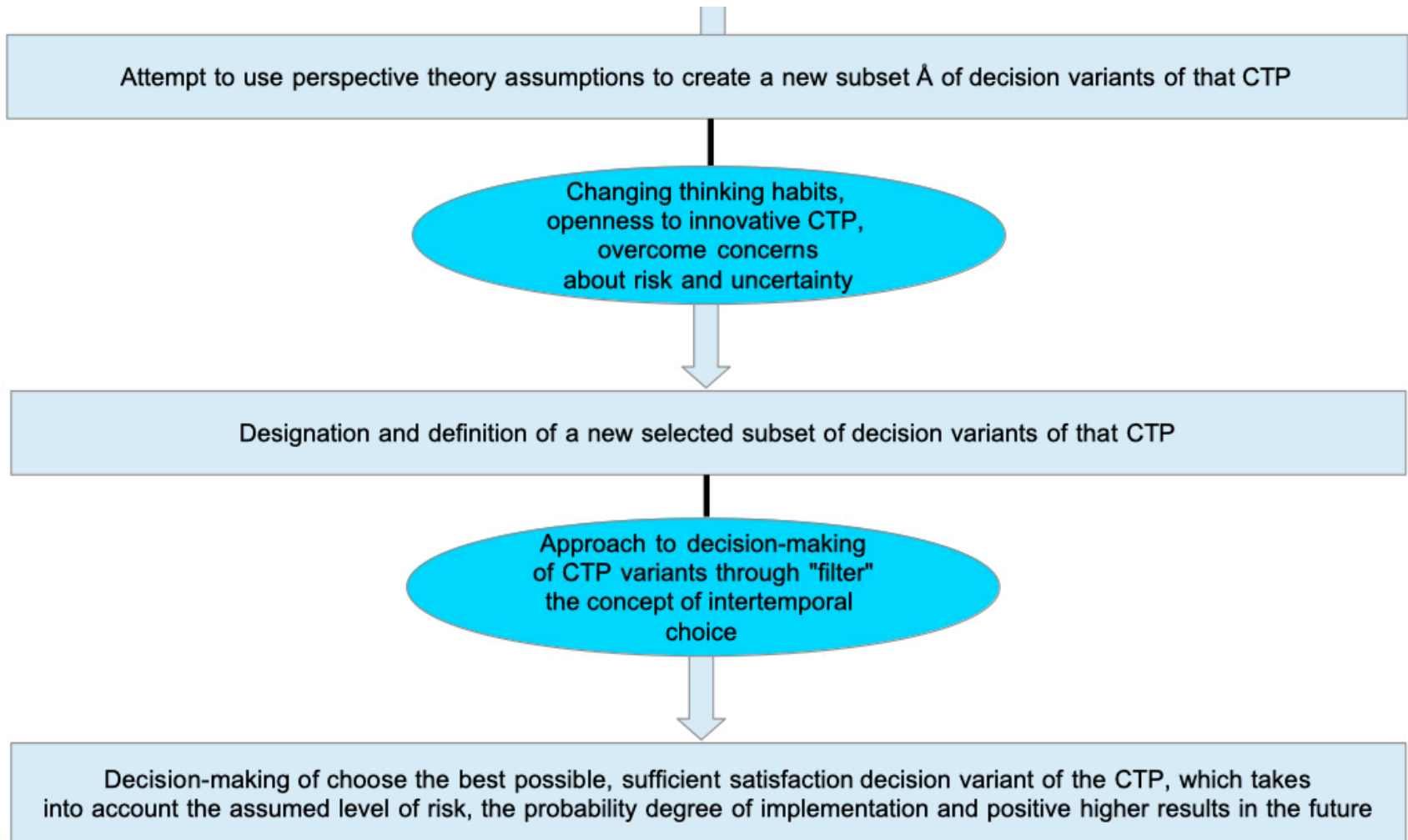
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The model of the behavioural approach to GDM in the process of creating a CTP concerning the prehistory of Będzin County



The model of the behavioural approach to GDM in the process of creating a CTP concerning the prehistory of Będzin County



Conclusions

- Proposed **perspective on the decision-making process** has **several advantages**, in particular:
 - **Multithreading** and **multifaceted nature** of the process takes into account the **diversity** of **determinants** of the **decision-making process**.
 - **Hybrid approach** adapts to the **dynamically** changing **decision problem**.
 - **Multi-cognitive model** should not discriminate against any decision situations.
 - The researcher's intention is to **implement** this **model** in **real situations** related to decision-making in the field of **local cultural tourism** at the level of **local government unit**.

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Thank you for attention

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