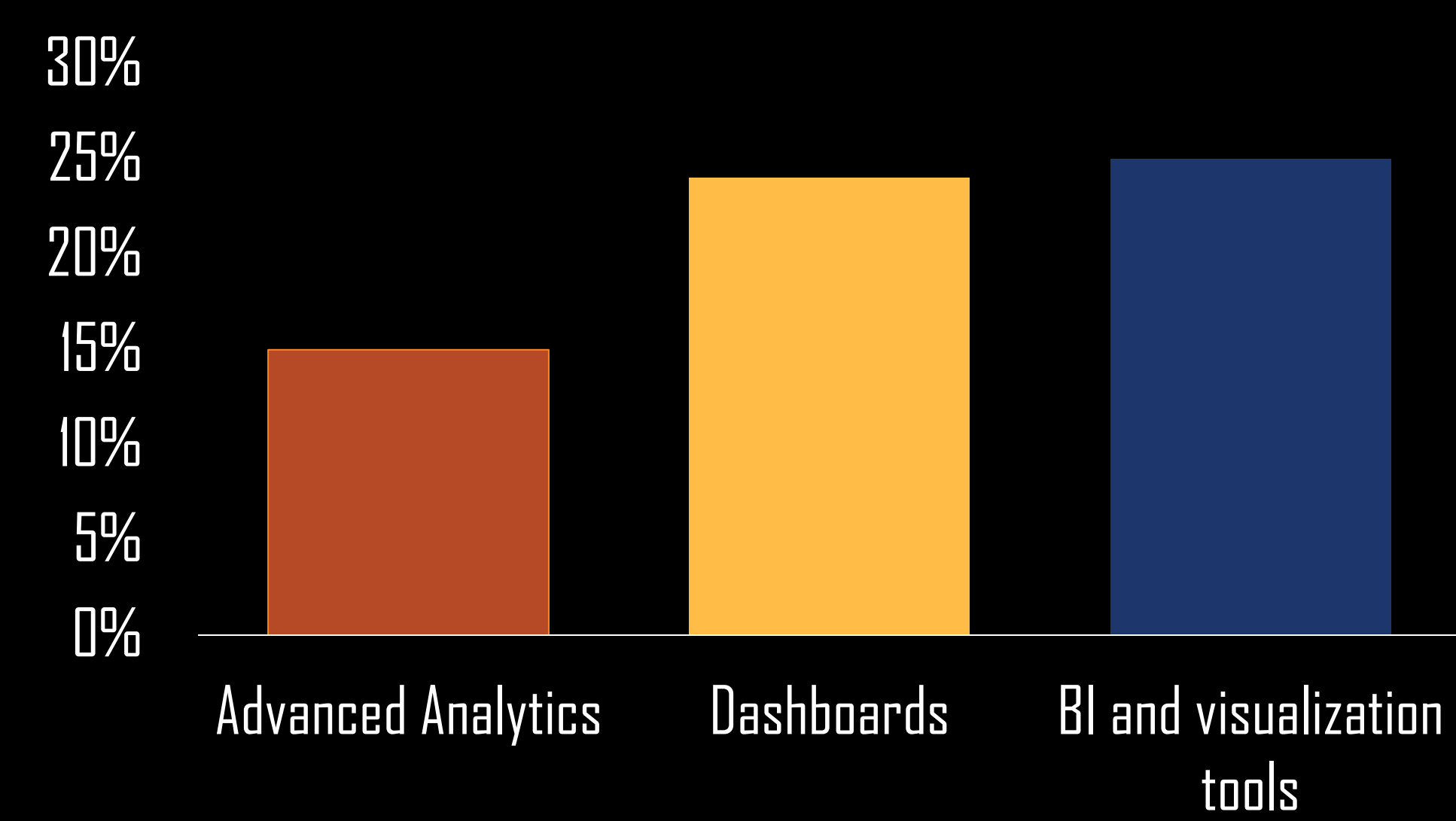
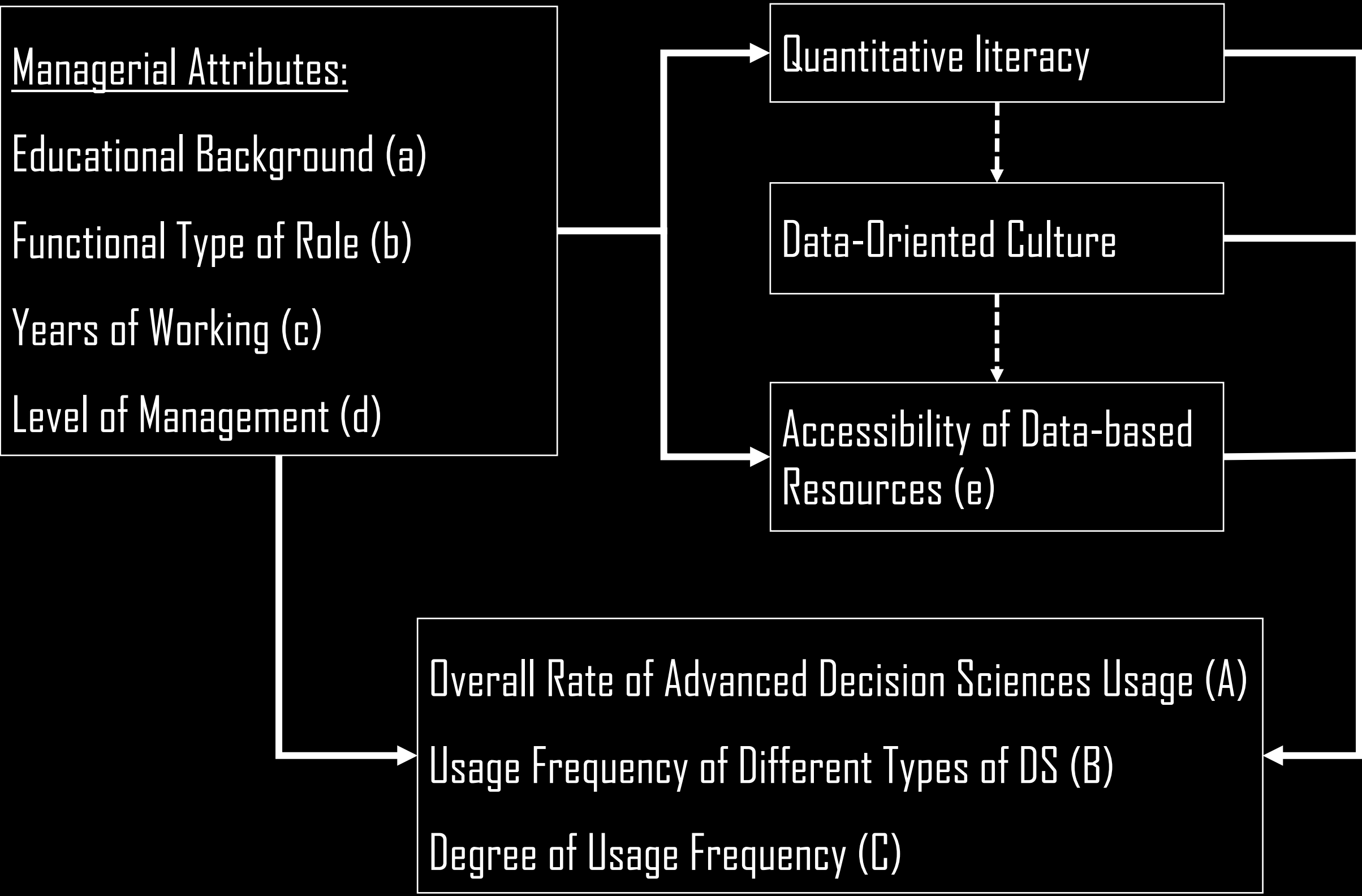


Introduction & Background

Recent years have seen significant growth in in big data and data-based analytical tools. However, despite the rapid development of decision science (DS) methodologies and the increased accessibility of analytical tools, there is still a low percentage of managers using data and analytical methods to make decisions. Most managers still apply traditional summarization tools that primarily describe past data or make decisions on the basis of prior experience and knowledge when making business decisions. The current research aims to indicate the significant factors that would influence the use frequency and type of decision science methodologies applied in daily decision-making processes.



Framework

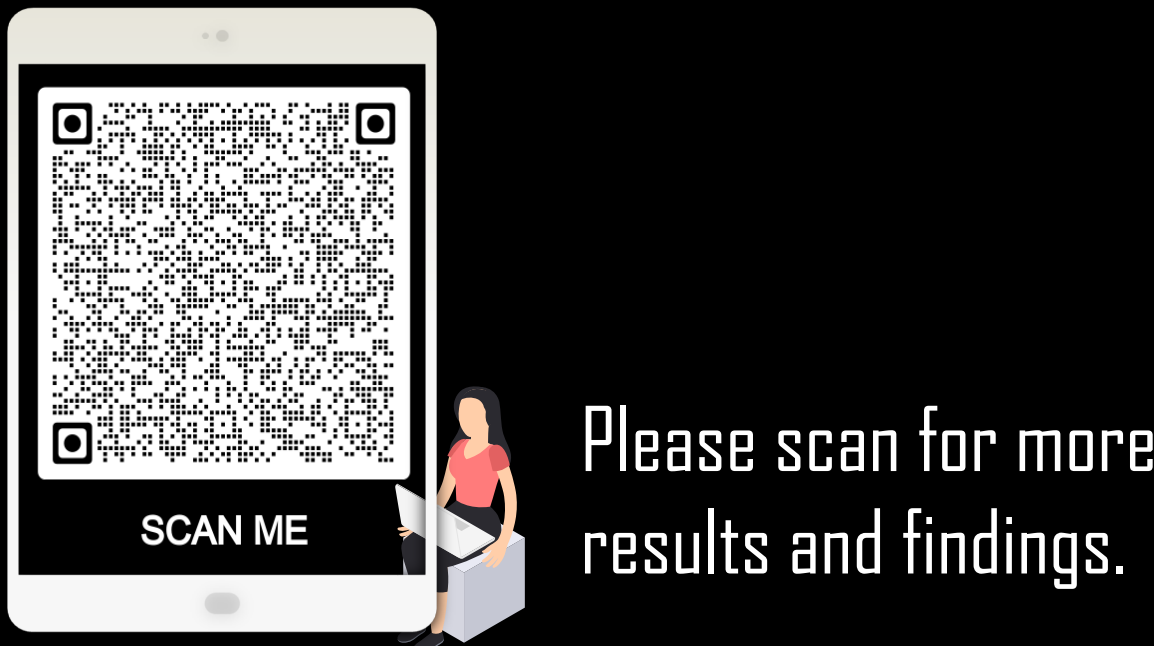


Methods

- A survey instrument was developed to collect information on managers’ individual traits and organizational factors.
- A quantitative literacy (QL) assessment was designed with the intent to evaluate a manager’s ability to solve business problems with quantitative information and data using analytical methods.
- A pilot study was conducted to validate the research survey tool.
- 71 full-time employed managers were recruited in the pilot study.
- 326 full-time employed managers were recruited in the main study.
- The survey was administered and distributed through Amazon Mechanical Turk (Mturk).
- The results of the pilot study cannot support the internal consistency and inter-rater agreement among the QL assessment items. Therefore, questions of the QL assessment tool are being revised and improved for future research.

Key Findings:

- Even with the advancements in machine learning and advanced decision science methodologies, basic, spreadsheet-based descriptive analytical methods were used by 92.3% of the managers.
- Factors driving the use of advanced analytical tools include:
 - ✓ **Type of undergraduate degree** – managers with STEM degrees are more likely to use advanced DS tools than those with non-STEM degrees.
 - ✓ **Functional positions**– managers working in technology and equipment-related positions are more likely to use advanced DS tools than managers working in people focused, product and process focused, financial focused, or market focused positions.
 - ✓ **Type of organization** – managers from privately held organizations used more advanced DS tools than managers from government, non-profit, or publicly held companies.
 - ✓ **Perceived accessibility to tools** is a key factor in whether or not managers choose to use decision science methods for day-to-day decision making.



Please scan for more results and findings.

Factors Influencing the Utilization of Decision Science Methodologies for Business Decision-making

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Results

