

Authenticity, accuracy and reliability of archaeological records in a Geographical Information System (GIS)

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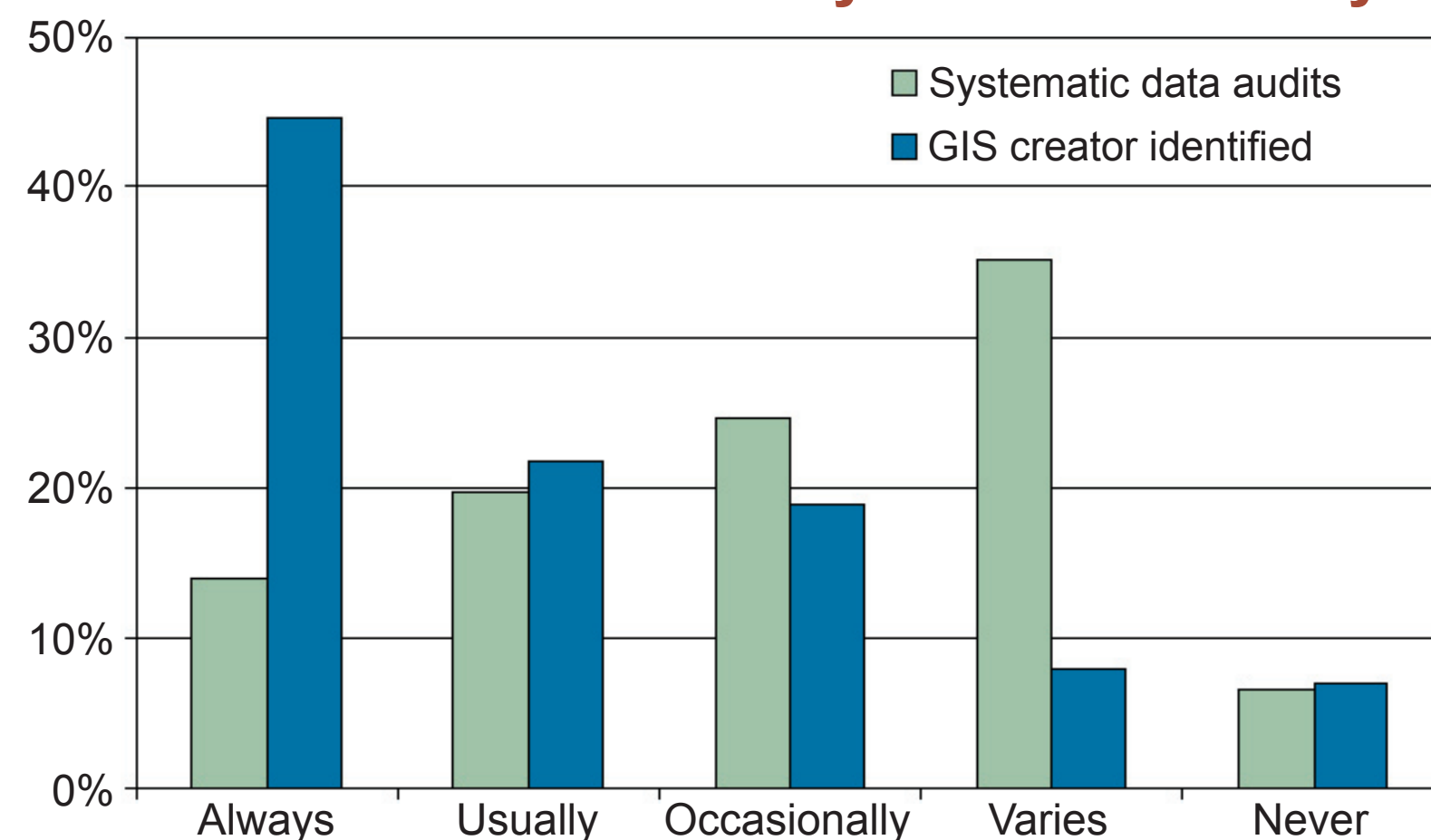
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Authenticity

The trustworthiness of a record as a record. It is established by assessing the identity and the integrity of the record. It must be possible to ascertain at all times what a record is, when it was created, by whom, what action or matter it participated in, and what its juridical/administrative, cultural, and documentary contexts were. It must also be possible to ascertain the wholeness and soundness of the record: whether it is intact or, if not, what is missing.

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Measures of Accuracy and Authenticity



Graph shows responses of survey participants to two questions:

- How often they systematically audit their GIS data files for accuracy
- How often measures are taken to ensure that the creator of a GIS project explicitly is identified

Accuracy

The degree to which data, information, documents or records are precise, correct, truthful, free of error or distortion, or pertinent to the matter.

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Introduction

This InterPARES 2 Project case study examined the electronic record-keeping activities of archaeologists involved in GIS projects. The objective of this research was to collect information about how these record-keeping activities affect the authenticity, accuracy and reliability of the electronic records GIS archaeologists create.

Methodology

Research data were collected from three primary sources:

Intensive, semi-structured interviews with archaeologists involved in the planning, creation and maintenance of GIS projects, as well as other specialists involved in Southwestern archaeology and information management of archaeological data sets.

An online survey questionnaire of record-keeping habits of archaeologists involved in GIS research. The goal of the survey, which drew responses from 157 archaeologists in 30 countries worldwide, was to help assess the representativeness of the interview data with respect to the broader archaeological GIS community.

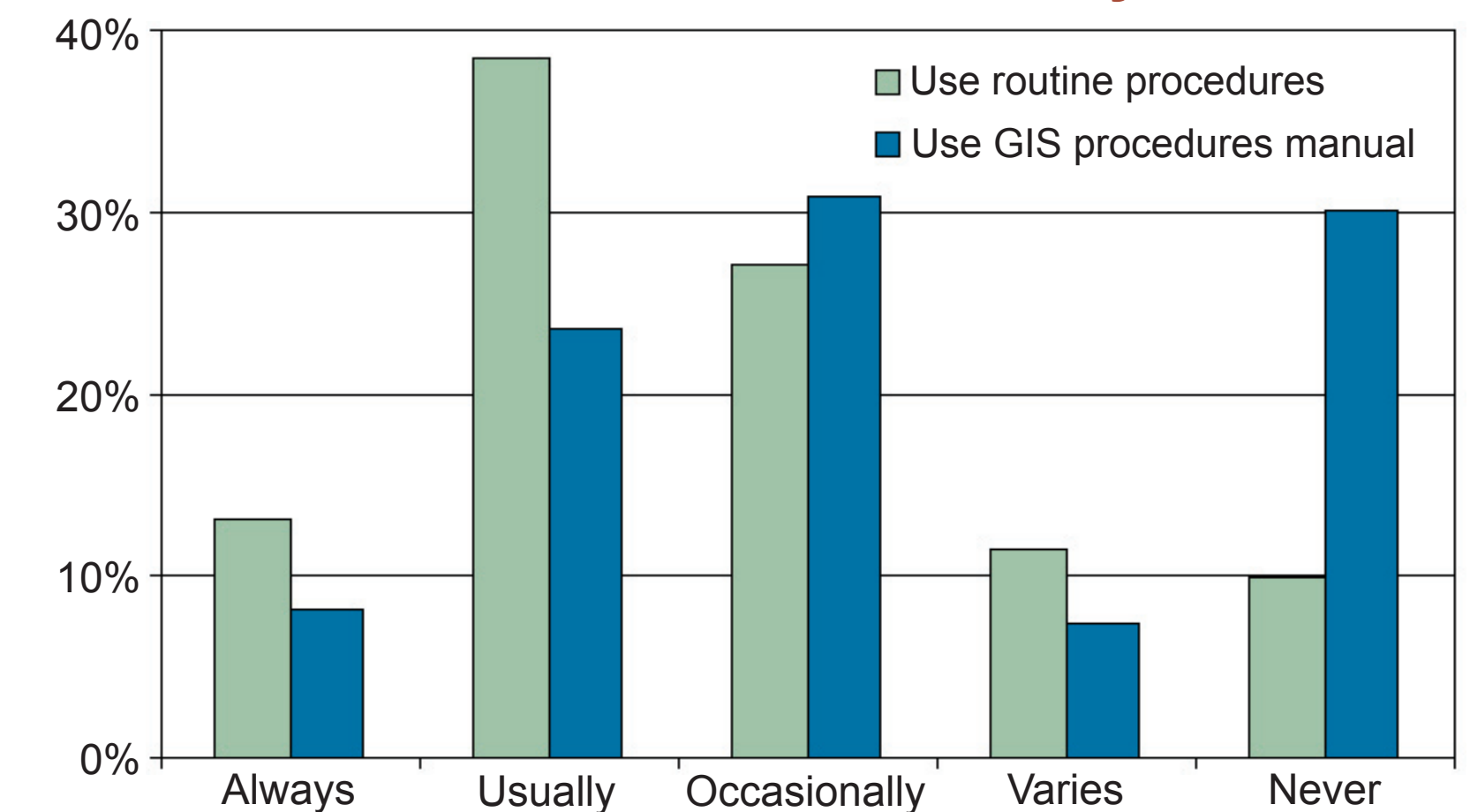
An annotated bibliography of research literature relating to: (a) the history and development of archaeological theory and methods; (b) information management in archaeology; (c) GIS research; and (d) case study methodology.

Discussion

A GIS involves a complex combination of hardware, software, data, procedures and human operators. The successful integration of these elements requires a high level of overall computer expertise in addition to experience with proprietary GIS software and a solid understanding of the underlying geographic concepts.

Given their inherently spatial nature, archaeological data are ideally suited to analysis in a GIS. Consequently, archaeologists have been eager to incorporate GIS analyses into their research. Nevertheless, the literature review indicated that a majority of GIS archaeologists have little or no formal GIS training. As was revealed in both the interview and survey data, this largely self-taught approach to GIS often results in idiosyncratic and ad hoc record-keeping procedures which directly affect the authenticity, accuracy and reliability of the resulting records.

Measures of Reliability



Graph shows responses of survey participants to two questions:

- How often they follow a routine set of procedures when creating their various GIS components and outputs
- How often the procedures they follow are guided by a GIS procedures manual

Reliability

The trustworthiness of a record as a statement of fact. It exists when a record can stand for the fact it is about, and is established by examining the completeness of the record's form and the amount of control exercised on the process of its creation.

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