

# **The Role of Information Literacy Skills in Environmental Scanning as a Strategic Information System ----- A Study of SMEs in Singapore**

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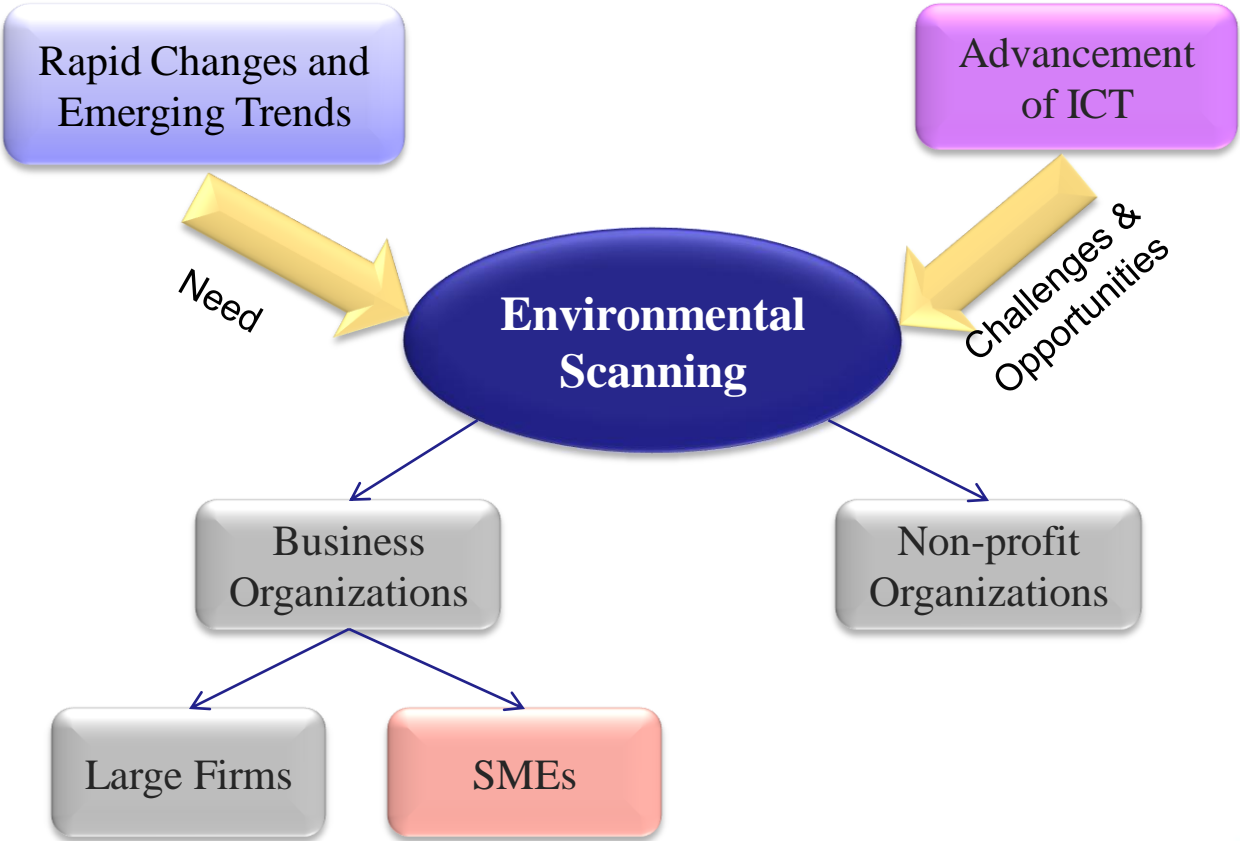
# Outline

- Introduction
- Literature Review
- Problem Statement, Research Questions and Objectives
- Proposed Research Models
- Proposed Research Methodology
- Significance of the Research
- Conclusion

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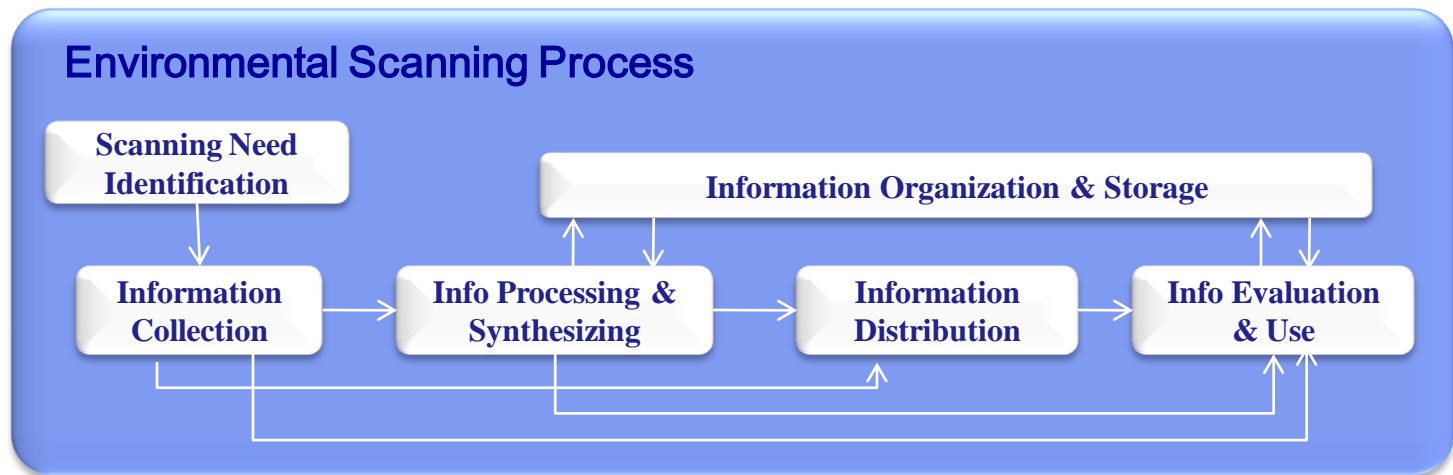
- Introduction
  - ✓ Background Information
  - ✓ Definition of Key Terms
  - ✓ Scope of the Research
- Literature Review
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# Background Information



# What is Environmental Scanning?

A strategic information system adopted by organizations to deal with external environmental information, the products of which would assist decision-makers for tactical and strategic decision making (Aguilar, 1967; Choo, 1993).



## Information Literacy Skills

The abilities of individuals in defining, locating, selecting, organizing, presenting, and evaluating information (Goad, 2002; Todd, Lamb, & McNicholas, 1992), which are the key competencies required to conduct different ES activities.

## Information System

- An organized procedure for collecting, processing, storing, and retrieving information to satisfy a variety of needs, as stated in Harrod's Librarians' glossary (1995).
- It could be either paper-based or computer-based.

# Scope of the Research ----- Singapore SMEs

- ES is a concept originally raised for large business corporations.
- SMEs are more sensitive towards environmental uncertainties.
- SMEs form a significant chunk of the local economy.

# Singapore SMEs

- For Singapore, SMEs are generally defined as
  - ✓ having at least 30% local equity,
  - ✓ fixed productive assets (defined as net book value of factory building, machinery and equipment) not exceeding \$15 million, and
  - ✓ employment size not exceeding 200 workers for non-manufacturing companies (SME Portal Singapore, 2009).
- Of the about 160,000 enterprises in 2007, **99%** were SMEs. These SMEs employed nearly **6 out of every 10 workers** and generated almost **half** of total enterprises' value-added (DOS Singapore, 2007).



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- Introduction
- Literature Review
  - ✓ Information Literacy in the Workplace
  - ✓ Environmental Scanning as a Strategic Information System
  - ✓ Information Literacy and Environmental Scanning
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# Information Literacy in the Workplace

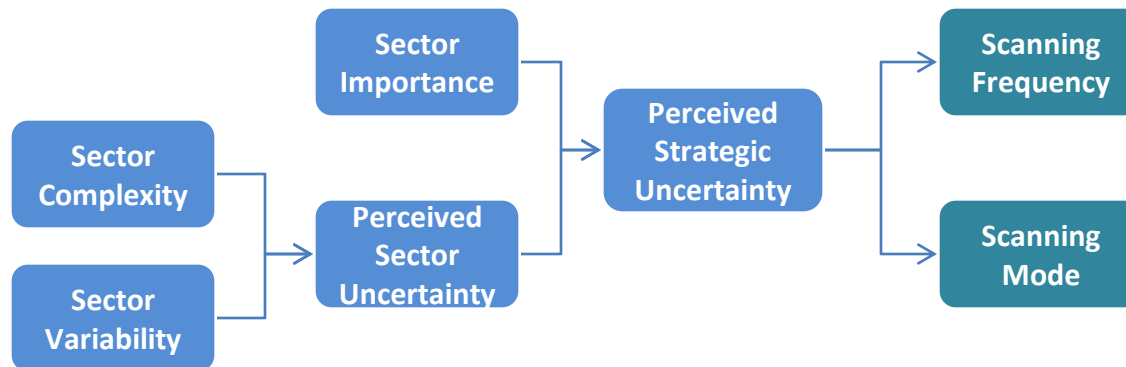
- The importance of IL skills for business organizations is highlighted in the literature (Drucker,1992; Mutch, 1997; Karim and Hussein, 2008).
- Employees in the workplace found to be lack of IL skills (Bruce, 1999; O'Sullivan, 2002; Cheuk, 2002).
- Few IL studies have integrated IL skills with a specific business management activity, and even fewer of them have tried to evaluate the impact of IL on real business applications.

# Environmental Scanning as a Strategic Information System

## ➤ Strategic Information System

Systems designed to acquire, process, store, organize, disseminate information regarding external opportunities and threats, and make such information available for strategic use (Feather & Sturges, 2003).

## ➤ Environmental Scanning for Coping with Uncertainty (Daft et al, 1988)



# Measurement of Perceived Strategic Uncertainty and Environmental Scanning

	Measurement			
<b>PSU</b>	$PI \times (C+R)$ (Auster & Choo, 1993; Daft <i>et al.</i> , 1988; Ebrahimi, 2000; Stewart, May, & Kalia, 2008)	<b>AVAIL &amp; PREDICT</b> (Boynton, Gales and Blackburn, 1993)	$EU \times I$ (Elenkov, 1997b)	Rate by levels (Olsen <i>et al.</i> , 1994; Hough & White, 2004)
<b>ES</b>	Frequency of scanning & Degree of interest (Hambrick, 1982; Boyd & Fulk, 1996; Strandholm & Kumar, 2003; McGee & Sawyerr, 2003)	Use of info sources (Brush, 1992; Daft <i>et al.</i> , 1988; May <i>et al.</i> , 2000; Stewart <i>et al.</i> , 2008)	Scope of scanning (Beal, 2000; Strandholm & Kumar, 2003)	Type and role of scanning unit (Olsen <i>et al.</i> , 1994)

# Information Literacy Skills at each Step of Environmental Scanning

- **Identification of Organization's Scanning Needs**
  - Identify their own information need clearly;
  - Possessing essential communication skills to express their needs;
  - Capable in information processing and synthesizing, and conclude the organization's scanning need.
- **Information Acquisition**
  - Select the most appropriate sources (quality & cost);
  - Formulate a suitable search strategy.
- **Information Organization and Storage**
  - Ensure the effectiveness and efficiency of the system (creation of taxonomies, resource description and comprehensiveness)

# Information Literacy Skills at each Step of Environmental Scanning

- **Information Processing and Synthesizing**
  - Information Processing Skills (Filtering, Synthesizing...)
  - Familiar with Analytical Tools and Techniques
  
- **Information Distribution**
  - Right information to the right person at the right time in a right format
  
- **Information Evaluation and Use**
  - Evaluate the quality of information (Sufficient, Adequate, Timely...)
  - Process and Synthesize based on real-time situation

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# Problem Statement

- In prior literature, besides information acquisition, insufficient attention has been paid to the other steps of ES.
- IL skills and organization's information system, as enablers to conduct effective ES activities, have not been highlighted in previous studies.

It is, therefore, desirable to study environmental scanning as a systematic process with the role of information literacy skills and information technology applications investigated.



# Research Questions

- **RQ1:** With different degree of perceived strategic uncertainty, what are the current practices and impact of the whole value-chain of environmental scanning process of SMEs in Singapore?
- **RQ2:** What is the role, contribution, and to what extent have information literacy skills and information technology applications being effectively embraced in environmental scanning process as a strategic information system?

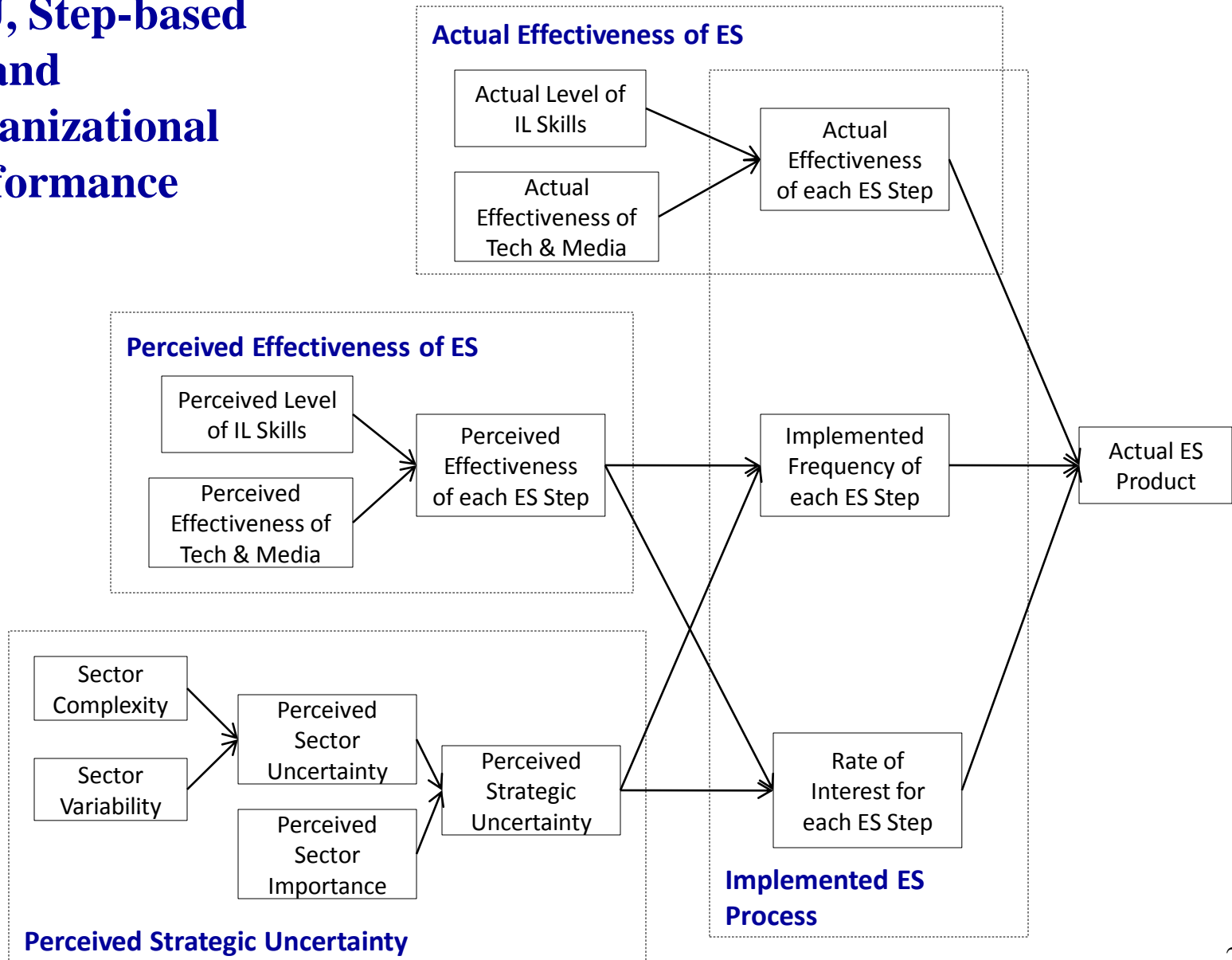
# Research Objectives

- **RO1:** To find out the relationships among perceived strategic uncertainty and environmental scanning process ;
- **RO2:** To discover how the use of information literacy skills and information technology applications can enhance the effectiveness of environmental scanning;
- **RO3:** To propose and verify a framework showing the relationships among perceived strategic uncertainty, environmental scanning process and organizational performance with the role of information literacy skills and information technologies and applications investigated.

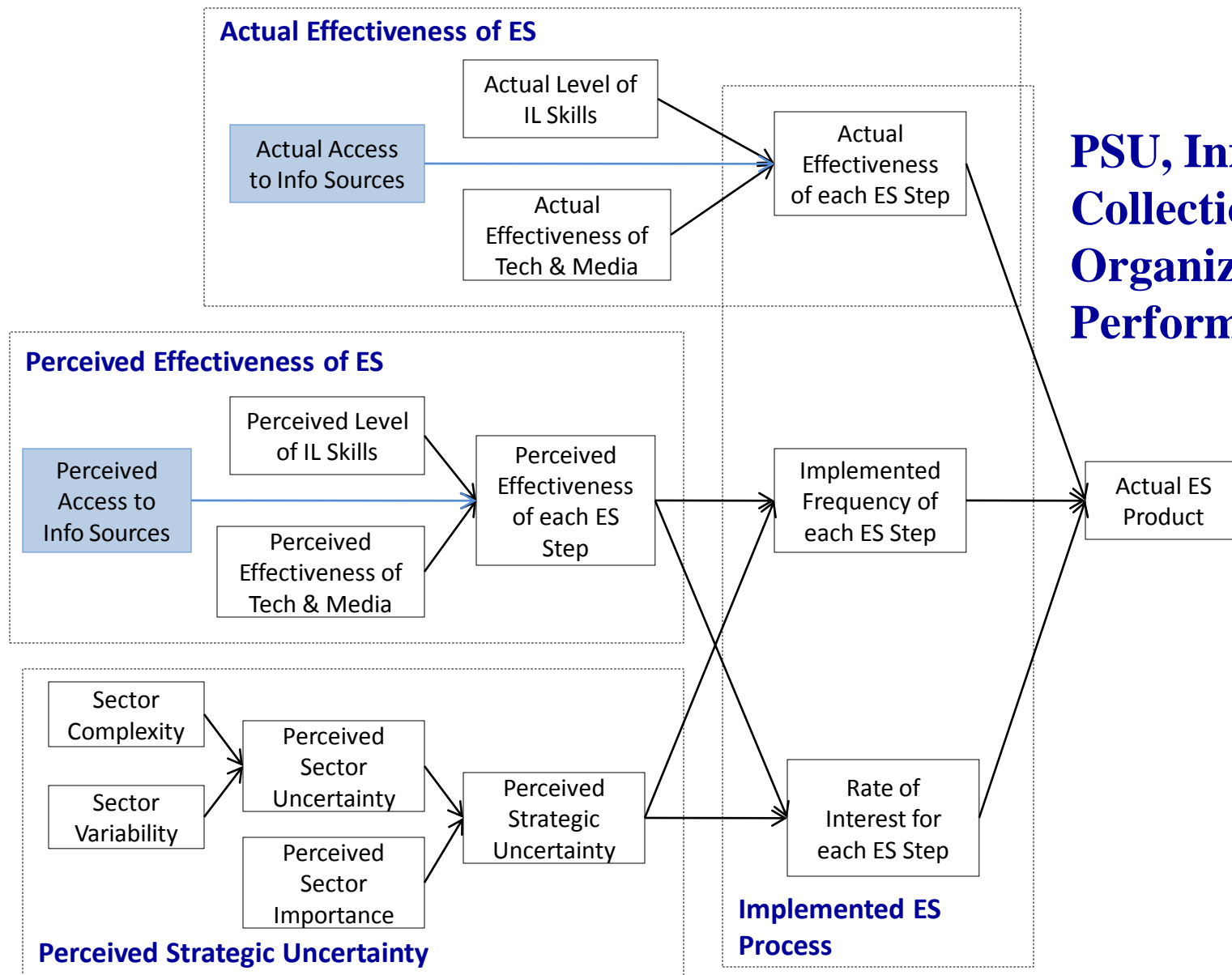
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# PSU, Step-based ES and Organizational Performance



# PSU, Info Collection and Organizational Performance



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- **Proposed Research Methodology**
  - ✓ Proposed Research Methods
  - ✓ Proposed Sample Selection and Characteristics
  - ✓ Proposed Survey Instrument and Interview Method
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# Proposed Research Methods

- Quantitative Method through **Questionnaire Survey/Test**
  - ✓ Collect data to obtain a broad picture of how Singapore SMEs scan their environment;
  - ✓ Enable respondents to report their perceptions while remaining anonymous and honest on the feedback;
  - ✓ Statistically investigate the relationships proposed .
  
- Qualitative Method through **Face-to-Face Interview**
  - ✓ Gather more profound data with staff engaged in ES activities with different functional roles from various hierarchical levels;
  - ✓ Explore more about the ES activities conducted by the same company under different time period through recall of various strategic situations;
  - ✓ Investigate the indirect contribution of ES to organisational performance.

# Proposed Sample Selection and Characteristics

- Only 2 Industries are proposed to be included
  - ✓ Travel agent companies
  - ✓ Food manufactures
  
- Survey: “Criterion Sampling” of Singapore SMEs
  - ✓ Company manpower: 50 to 200 employees.
  - ✓ Concentrating on a **single business domain** without operating across different industries.
  
- Interview
  - ✓ CEOs and staff engaged in ES of 2 leading companies from each of the 2 industries



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# Significance of the Research

- From a **Theoretical** Perspective
  - ✓ This research aims to address the knowledge gaps and build up a new model of ES as a **systematic process** with consideration of the effect of **IL skills** and **information technology applications**.
- From a **Practical** Perspective
  - ✓ Provide insights into the current situations of SMEs in Singapore regarding their use of IL skills and information technology for ES;
  - ✓ Reveal their ES mechanisms, detect the problems they may encountered, and generate implications on how to improve the current situation.
- From a **Methodological** Perspective
  - ✓ Explore the feasibility of adopting both quantitative and qualitative methods to generate a quality set of findings and to cross validate them.

# Conclusion

- The common limitations of prior studies have been addressed in the proposed model through the equal attention paid to each ES step and the newly added variables.
- The proposed research design expects to enrich this set of information by obtaining inputs across the hierarchy of the organization, thereby providing a richer and more accurate picture of ES by the various stakeholders involved in this process.

