FARMERS’ COMPREHENSION OF USAGE INSTRUCTIONS ON PESTICIDE PACKAGING

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THEORETICAL FRAMEWORK

This study was based on the dual coding theory of Allan Paivio (1991). According to Paivio (1986), the human mind operates with two distinct classes of mental representation (or “codes”), verbal representations and mental images, and that human memory thus comprises two functionally independent (although interacting) systems or stores, verbal memory and image memory.

Gredler (2001) also added that dual coding theory has its essential characteristic that information may be stored in long-term memory in nonverbal as well as verbal form. Even if these systems have different functions, these allow dual coding of information because of interconnections of the systems.

Each system has different functions, storage-processing characteristics and memory units. The verbal system specializes in processing and storing linguistic and information (words, sentences, etc.). In contrast, the visual system specializes in processing and storing image or ‘picture-like’ representations (Paivio, 1991).

The systems are assumed to be composed of internal representational units, called logogens and imagens, that are activated when one recognizes, manipulates, or just thinks about words or things (Paivio, 2006).

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Fig. 1 Theory on Dual Coding by Allan Paivio
CONCEPTUAL FRAMEWORK

This study examined farmers’ comprehension of usage instructions which served as the dependent variable and farmers’ sources of pest management information, perceived credibility of source and frequency of exposure as independent variable. It is also conceptualized that the socio-demographic characteristics such as educational attainment, farming experience, and age will influence farmers’ comprehension of usage instructions and respondents’ literacy.

INDEPENDENT VARIABLE                          DEPENDENT VARIABLE

Farmers’ sources of pest management information
  ❖ Perceived credibility
  ❖ Frequency of exposure

Farmers’ Literacy

Socio-demographic characteristics
  ❖ Educational Attainment
  ❖ Farming Experience
  ❖ Age
  ❖ Sex

Farmers’ Comprehension

Fig. 2. Conceptualized relationship between independent and dependent variables

OPERATIONAL DEFINITION OF TERMS
The study was guided by the following definition of terms in the course of its implementation.

1. **Farmers' comprehension** – refers to rice farmers’ understanding of pesticide use instructions which was measured using a knowledge test based on the content of the usage instructions on pesticide packaging.

2. **Usage instructions** – refer to both verbal and visual labels and instructions found on the packaging of pesticides. This includes the following:

   - **Hazards** – refer to risks statements that include the physical, chemical and environmental hazard as well as human and domestic animal hazards.
   - **First aid** – refers to the statement of practical treatment.
   - **Directions for use** – refer to the statements that convey the proper usage of the product. This includes the following:
     - **Target pests** – refer to what pests the product can be applied.
     - **Application** – refers to how the product can be used.
     - **Timing** – refers to the right period or time when the product should be applied.
     - **Amount/Dosage** – refers how much product to use or its recommended rate.
     - **Frequency** – refers to how often the product can be applied.
     - **Precaution** – refers to possible hazard statements that the pesticide may carry.
     - **Storage and disposal** – refers to the statements that explains where and how to properly keep and throw the pesticide after use.
     - **Symbol** – refers to the skull and crossbones symbol found on the pesticide label.
     - **Pictograms** – refer to the graphical instructions seen on the pesticide label.

3. **Pesticide Packaging** – the written and printed material that is attached to the container or wrapper of the pesticide product. It is also known as pesticide label.
4. **Socio-demographics** – refers to the respondents’ characteristics such as age, educational attainment and farming experience.

**Age** – refers respondents’ age at the time of the study. Age will be categorized based on the National Economic Development Authority’s (NEDA) classification. 21 years old and below was categorized as young, 22 to 45 as middle age, 46 to 60 as old, 61 years and above as senior citizens.

**Sex** – refers to whether the respondent is male or female.

**Educational Attainment** – refers to the respondents’ actual number of years of schooling. This was classified as:

- No Schooling – 0 years
- Elementary – 1 to 6 years
- High School – 7 to 10 years
- College – 11 to 15 years

**Farming Experience** – refer to respondents’ number of years in farming.

5. **Literacy** – refer to the respondents’ ability to read the following passage:

“Atong palambuon ang atong katilingban aron kita mabulahan.”

(Let us nurture our society so that we can flourish).

6. **Information sources** – refers to the media available to the farmers such as radio, television, printed materials. This also includes interpersonal sources such as extension workers/technicians.