DEVELOPMENT OF PACKAGING TOOLS FOR ONLINE BUSINESS ENTREPRENEURS

Sirion Son-ong[*], Ananya Banyongpisut[**] Kulnipa Poobt[***]

[,**,***]Lecturer, College of Logistics and Supply Chain, Suan Sunandha Rajabhat University,thailand*
E-Mail: [*]sirion.so@ssru.ac.th, [**]Ananya.ba@ssru.ac.th, [***]kulnipa.po@ssru.ac.th

ABSTRACT

This study has the objectives to develop packaging tools for online business operators. and to evaluate the efficiency of packaging tools. The main information providers include online business entrepreneurs, industrial engineering experts and ergonomics experts. Using a structured interview method. The nature of the questions is open-ended and can be summarized as various steps related to packaging. The results of the study revealed that the problem encountered in the packing process is that the packers have a virtuous posture that goes against nature and is against ergonomic working principles. resulting in pain. Packaging tools for online business owners save time. Previously, packers sat on the floor to pack packages. The average time for packing 30 boxes takes 32.03 minutes from the original time of 51.99 minutes. Labor costs are reduced to 60 baht per day from the normal 180 baht per day and reliability. The use of packaging tools has an accuracy of 97.00% in attaching information to the front of the consumer package.

Keywords: Packaging Tools, Online Business,

INTRODUCTION

Electronic Commerce (Electronic Commerce: E-Commerce) is a technology developed to help increase perfection in the process of buying and selling goods and services for consumers from the trend of internet technology that plays a role in people's daily lives. Make organizations realize the importance and the benefits that will be received and used as a channel to expand the business even further, including an increase in the number of electronic commerce entrepreneurs, along with consumers having the habit of accessing the internet all the time through various electronic devices (Anchalee Hiranpat,2016) Causing consumers to change purchasing sources from outside the home to purchasing inside the home, the B2C E-Commerce market value in 2022-2023 will grow at a slower pace. After accelerating at a double-digit rate during

COVID-19, in 2023 it is expected that the market may expand approximately 4-6%, or equivalent to a market value of approximately 606,000 - 618,000 million baht (Kasikorn Research Center, 2022)

Currently, online business operators are packing products for export in an ergonomically incorrect way, which involves sitting the package on the floor for a long time. There are noble postures that go against nature, such as twisting, bending the wrist, bending the arm, bending the elbow, holding, especially bowing the head, bowing the back, twisting the body and reaching for the hand. This causes the muscles in the back, coccyx, hips, and legs to tense, including the joints and tendons, resulting in illness and fatigue (Nipaporn Khamlama, 2020).

Based on the problems mentioned above, we developed packaging tools for online business entrepreneurs. Provides accurate packaging and affixing of consumer or customer

address information. and also reduces costs Reduce labor costs The tools are faster for packaging.

OBJECTIVE

1.1 To develop packaging tools for online business operators
1.2 To evaluate the efficiency of packaging tools for online business operators

SCOPE OF RESEARCH

1.1 Content scope

In the research study on Development of Packaging Tools for Online Business Entrepreneurs The researcher has conducted qualitative research. By visiting the area and interviewing to ask for information directly from online business operators and studying the content of information from various documents. Theses and research books related to ergonomics principles

1.2 Scope of key informants

- 30 online business entrepreneurs
- 3 industrial engineering experts
- 3 ergonomics experts

RELATED CONCEPTS AND THEORIES

1. Packaging theory

1.1 Packaging

Packaging is a matter of science and art that is used to package products using modern technology which causes damage to the environment and packaging must protect the product in good condition from the point of production until it reaches the customer. without causing damage However, that packaging There must be a cost of production that is not too high.

1.2 Research related to packaging

Kanchanaporn Niljinda, Nantakarn Kerdmalai, Metawee Yimin and Niramon Nueangsittha (2019) studied the development of packaging for indigo cloth products that are unique to Ban Na Kham, Amphoe Phanna Nikhom. Sakon Nakhon Province To develop packaging for the indigo-dyed cotton weaving group that is unique to Ban Na Kham. From brainstorming relevant ideas to develop a prototype. and select 4 acceptable prototypes, emphasizing the elements of the packaging in terms of letters Text, use of colors, graphic illustrations, patterns, shapes, convenient to use, durable, beautiful, protects the product, meets the needs of consumers and is unique to Ban Na Kham. Observation process and the reflection stage of taking the prototype packaging for market testing at Pha Kram Road, Mueang District, Sakon Nakhon Province, to find one suitable prototype.

2.Theories related to ergonomic principles

2.1 Principles of ergonomics

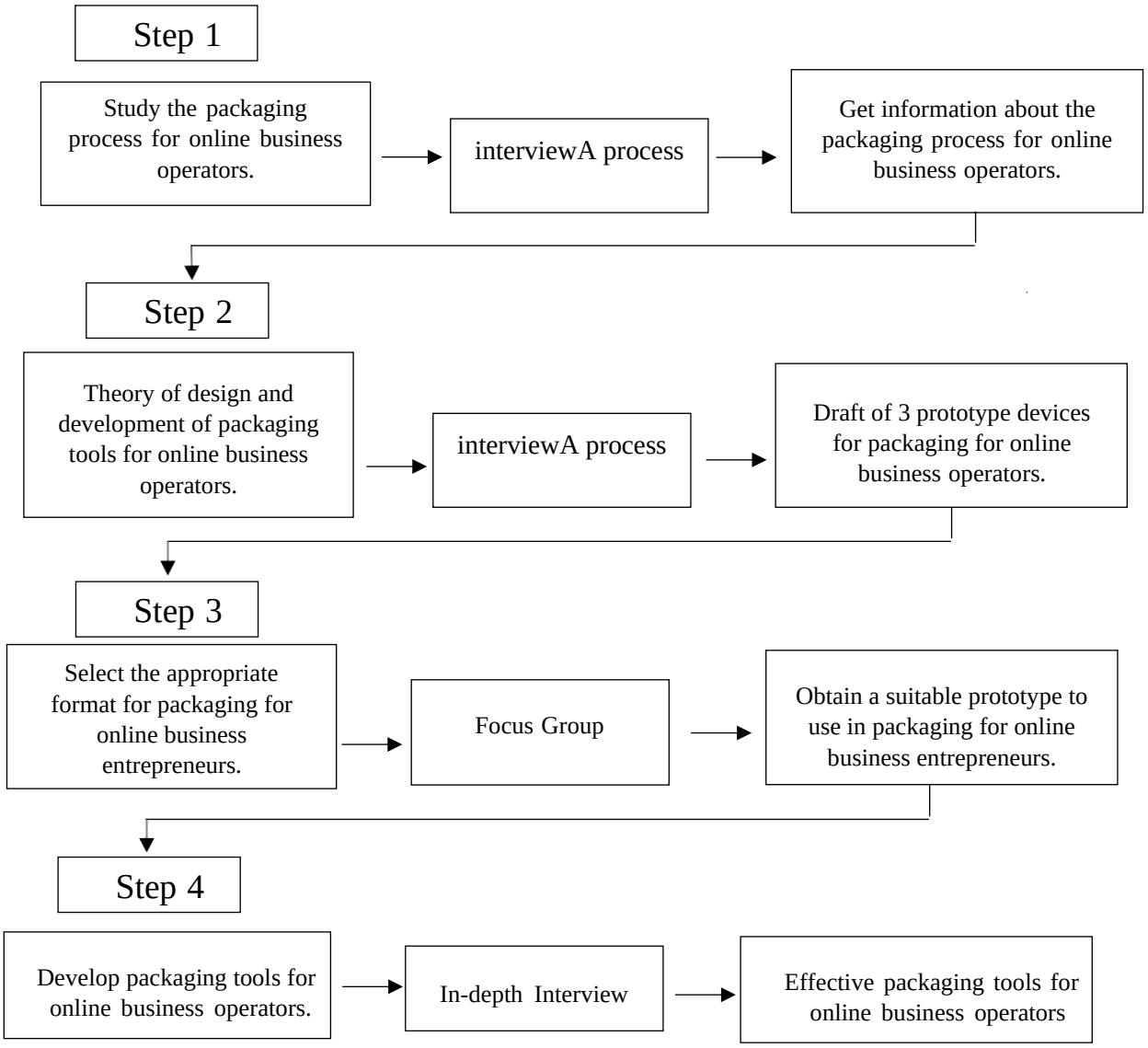
Organizing work to suit people by seeing the importance of working people and trying to design and create tools and equipment to organize work appropriately in accordance with the abilities and competencies of each person, which in developed countries is considered interdisciplinary, which is leading Using many academic fields to benefit the study of ergonomics, including knowledge from physiology and anatomy, gives an understanding of the structure, proportions, and functions of various organs of the body, and when psychology is studied together, it makes more sense. Know about the functioning of the nervous system

and brain, learn about human behavior, knowledge from engineering subjects makes you understand the limitations and various techniques in working with production and technology. and knowledge and understanding of occupational health subjects It provides the ability to evaluate working conditions that are hazardous to humans. Ergonomists coordinate adjustments and applications. By connecting knowledge in biological sciences with industrial technology. To assess the conditions of working people and their impact on people, as well as suggest ways to solve problems.

2.2 Research related to ergonomics principles

Nakorn Duangkaew, Natthaphong Chuntu and Phongsakorn Surin (2016) studied the design and construction of ergonomic chairs for lecture classrooms, indicating that the elements of teaching using the lecture chair method are considered to be important elements in When studying, applying the principles of ergonomics to help in arranging the environment is something that should be given great importance because The learning environment has a direct impact on the learning efficiency of students, whether it is the size of the width and height of the tables and chairs

METHODOLOGY



RESULTS

This research designed a packaging tool for online business entrepreneurs. In packing, once the packing is done on the table Then slide the package along the ramp into the box for disinfection.

1. Results of the development of packaging tools

Figure 1 Packaging tools

2. Results in increasing efficiency in time, cost and reliability in packaging.

2.1 Time optimization results

When packing tools were added to help with packing from the original, results found that the time of packing could actually be reduced.

Table 1 Table comparing the time of packing between the use of packing staff sitting on the floor and
using tools for packing

Packaging by sitting on the floor			**Packaging using tools**		
Round no. 1	30 box	53 Minute	**Round no. 1**	30 box	33.09 Minute
Round no. 2	30 box	53.02 Minute	**Round no. 2**	30 box	32.02 Minute
Round no. 3	30 box	54.94 Minute	**Round no. 3**	30 box	31 Minute
Average	51.99 Minute		**Average**	32.03inute	

2.2 Cost optimization results

Measuring cost efficiency in packaging tool development The researcher conducted an experiment and found that using packaging tools to help with packaging reduces labor costs.

Table 2: Comparative table of costs and working hours

	Number of employees	**working hours per person**	**Wage per day**
Before there were tools	3 Person	3 Hour	540 Baht
The latter has tools	1 Person	1 Hour	60 Baht

2.3 Reliability enhancement results

Evaluation of reliability performance found that Using the tool to package 100 boxes, it was 97% accurate in attaching the original information to the front of the package to consumers or customers. In packing 100 boxes, it is 60.00% to attach information on the front of the envelope.

Performance measurement where

$$Efficency = \frac{97}{100} \times 100$$

Where Output is the actual output, Input is the raw material.

SUMMARY AND DISCUSSION OF RESEARCH FINDINGS

After all, there are packaging tools for online business operators. This allows the post-packaging process to actually reduce the time required for traditional packaging that involves sitting and packaging on the floor. It also saves on labor costs. From packing 120 boxes per day, it was found that the difference after having tools to help can save up to 120 baht on labor costs per day and reliability. This packaging tool for online business operators is 97.00% accurate in correctly attaching customer address information.

This is consistent with the research of Nakorn Duangkaew, Natthaphong Chuntu and Phongsakorn Surin (2016) who studied the design and construction of ergonomic chairs for lecture classrooms. The objective was to design and build an ergonomic chair for lecture classrooms that was ergonomically suitable and had a safe posture. After improving the chair, it appeared that students felt less discomfort in their bodies.

SUGGESTIONS FOR NEXT RESEARCH

1. Developing packaging tools requires experts and advice on tools to develop them for maximum efficiency.
2. Further research into the development of more reliable packaging tools may require more accurate ergonomics.
3. For those who are interested in studying packaging tools for various types. I would like to study and develop the form of the tool. It is stronger but due to the limited time of the research team. Therefore, this format was created.

REFERENCE

Anchalee Hiranpat. (2016). Dye product transportation management process of ABC Company Limited: A case study of transportation procedures. Logistics and Supply Chain College Journal, 2(2), 87-99.

Atthaphon Kaewnuan, Banphot Lohapoontrakul, Klangduean Pochana. (2017). Prevalence of musculoskeletal and skeletal system disorders related to work in various occupations. Burapha University Public Health Journal, Year 12, No. 2, 59.

Kasikorn Research Center. (2022). E-Commerce continues to grow albeit at a slower pace. Accessible from: https://www.kasikornresearch.com/TH/analysis/k-social-media/Pages/B2C-FB-02-12-2022.aspx.

Kanchanaporn Niljinda, Nantakarn Kerdmalai, Methawee Yimin and Niramon Nueangsittha (2019).Developed packaging for indigo cloth products that are unique to Ban Na Kham. Phanna Nikhom District Sakon Nakhon Province. Sakon Nakhon : Sakon Nakhon Rajabhat University.

Kitti Intharanont. (2005). Ergonomics. Bangkok: Chulalongkorn University Press.

Nakorn Duangkaew, Natthaphong Chuntu and Phongsakorn Surin. (2016). Design and construction of ergonomic chairs for Lecture classroom. Kasem Bundit Engineering Journal, Year 6, Issue 2, 72.

Naris Charoenphon. (1999). Ergonomics. Ergonomics teaching materials. Faculty of Engineering Thammasat University.

Nipaporn Khamlama. (2020). Designing work stations according to ergonomic principles to reduce the risk of work injuries. Occupational health and safety courses Faculty of Science Ubon Ratchathani University.

Pornnipa Boriboonsuksri, Nat Chankrob. Designing study desks according to ergonomic principles. To reduce muscle fatigue. In the industrial engineering network academic conference. 17-19 October 2012. at Cha-am, Phetchaburi Province. Pages 515-520.