
TABLE OF CONTENTS

DOES ESCAPING POVERTY INCREASE HOUSEHOLD DIETARY DIVERSITY AND FOOD SECURITY? EVIDENCE FROM RURAL VIETNAM

Cao Minh Tuan, Thach Keo Sa Rate, Vo Thi Anh Nguyet **Error! Bookmark not defined.**

THE IMPACTS OF IMPLEMENTING THE NEW GENERATION FREE TRADE AGREEMENTS ON THE ECONOMY OF VIETNAM

Ha Thi Hang **Error! Bookmark not defined.**

PARTICIPATION AND INCOME OF POOR AND ETHNIC MINORITY HOUSEHOLDS IN THE VALUE CHAIN OF WOOD PRODUCTS FROM PLANTATION FOREST IN DAK LAK PROVINCE

Pham Van Truong, Nguyen Thanh Truc, Tran Trung Dung, Nguyen Thanh Phuong, Vu Trinh Vuong **Error! Bookmark not defined.**

IMPACT OF ELECTRONIC CUSTOMER KNOWLEDGE MANAGEMENT ON PURCHASE INTENTION IN THE FASHION INDUSTRY

Nguyen Thi Phuong Dung, Nguyen Minh Canh Luong Ngoc Duy **Error! Bookmark not defined.**

INFLUENCE OF AWARENESS ON GREEN TOURISM BEHAVIOR OF PEOPLE IN CAN THO CITY: THE MEDIATING ROLE OF ATTITUDE, PERSONAL STANDARDS AND GREEN TOURISM INTENTION

Ngo My Tran, Tran Quynh Nhu, Nguyen Pham Thanh Nam **Error! Bookmark not defined.**

HOW PRICE FAIRNESS AND PRODUCT FAIRNESS INFLUENCE ONLINE REPURCHASE INTENTION: AN EMPIRICAL STUDY IN VIETNAM

Ngo Thi Hoa and Nguyen Dinh Yen Oanh **Error! Bookmark not defined.**

DOES CLIMATE CHANGE AFFECT RICE YIELD? EVIDENCE FROM THE MEKONG RIVER DELTA IN VIETNAM

Vo Thi Anh Nguyet, Cao Minh Tuan and Ha Thi Linh **Error! Bookmark not defined.**

THE IMPACT OF THE CRISIS ON R&D SPENDING: THE ROLE OF LEVERAGE AND ORGANIZATIONAL FORMS

Nguyen Thi Bao Chau **Error! Bookmark not defined.**

THE INFLUENCE OF THE PROVINCIAL COMPETITIVE INDEX ON THE FOREIGN DIRECT INVESTMENT INFLOW TO THE PROVINCES IN THE MEKONG DELTA

Truong Luu Diem Quynh, Do Tran Ngoc Chuyen Son Manh Khang Nguyen Trung Kien Nguyen Anh Thy **Error! Bookmark not defined.**

CURRENT STATUS OF INVESTMENT IN MACHINERY AND EQUIPMENT AND POSITIONING OF TECHNOLOGY LEVEL OF ENTERPRISES IN THE MEKONG DELTA REGION

Quan Minh Nhut **Error! Bookmark not defined.**

FACTORS AFFECTING THE ABILITY TO ACCESS LOANS AND THE AMOUNT OF LOANS: THE CASE OF ORANGE FARMERS IN VINH LONG PROVINCE

Luu Thanh Duc Hai, Truong Thi Xuan Mai **Error! Bookmark not defined.**

FACTORS AFFECTING E-SAVING ADOPTION VIA "LUCKY MONEY" FUNCTIONS OF MOMO E-WALLET AMONG PEOPLE LIVING IN MUNICIPALITIES OF VIETNAM

Le Tran Thien Y, Mac Ngoc Gia Han, Nguyen Hoang Minh Chau**Error! Bookmark not defined.**

DETERMINANTS AFFECTING MOMO E-WALLET'S CUSTOMER SATISFACTION AMONG CAN THO UNIVERSITY STUDENTS

Luu Tien Thuan, Nguyen Duy Khang, Nguyen Thu Nha Trang**Error! Bookmark not defined.**

EFFECTS OF BANK CREDIT ON ECONOMIC GROWTH IN VIETNAM

Nguyen Phuoc Tai, Truong Dong Loc **Error! Bookmark not defined.**

ATTITUDES TOWARD RISK AND OPTIMAL USE OF INPUTS IN MAIZE PRODUCTION IN THE MEKONG DELTA

Le Van De and Pham Le Thong **Error! Bookmark not defined.**

THE EFFECT OF DEBT MATURITY STRUCTURE ON EARNINGS MANAGEMENT: EVIDENCE FROM VIETNAMESE LISTED COMPANY

Nguyen Tuyet Trinh and Hoang Long **Error! Bookmark not defined.**

PERCEPTION ANALYSIS OF OF LIVELIHOODS TOWARDS THE IMPACT OF RURAL TRAVELLING TO LIVELIHOOD SUSTAINABLE DEVELOPMENT OF RESIDENTS IN MY PHUOC ISLET – SOC TRANG PROVINCE

Nguyen Thi Kim Ha, Tran Thi Kim Dung, Phan Chi Nguyen**Error! Bookmark not defined.**

THE FACTORS INFLUENCING THE INTENTION TO USE MOBILE-MONEY SERVICES OF RESIDENTS IN CAN THO CITY

Nguyen Tran Phuc Thinh, Truong Hoang Van Anh, Nguyen Vo Gia Huan, Lam Thi My Tien, Nguyen Hoang Truc Vy, Le Tran Thiên Y **Error! Bookmark not defined.**

EVALUATING THE EMPLOYEE TRAINING AT THE VIETNAM PUBLIC JOINT STOCK COMMERCIAL BANK IN HANOI

Phan Thi Minh Ly **Error! Bookmark not defined.**

ANALYSIS OF TECHNICAL EFFECTIVENESS OF MUNG BEAN PRODUCTION IN THE RICE - MUNG BEAN INTERCROPPING MODEL IN TRI TON DISTRICT, AN GIANG **Error! Bookmark not defined.**

Nguyen Huu Dang, Mai Van Ut and Ngo Anh Tuan **Error! Bookmark not defined.**

EXTERNAL COMMITMENT VALUES IN CORPORATE CULTURE: FPT CORPORATION ON THE VIETNAM STOCK MARKET

Chau Thi Le Duyen, Nguyen Pham Tuyet Anh, Le Trung Ngoc Phat, Duong Thi Be Thuong. **Error! Bookmark not defined.**

FIRM CHARACTERISTICS AFFECT THE ADOPTION OF INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRSS): THE CASE OF COMPANIES IN THE CENTRAL AND CENTRAL HIGHLANDS REGION OF VIETNAM

Nguyen Hoang, Do Song Huong, Nguyen Dinh Chien, Pham Thi Hong Quyen, Hoang Thi Thuy Dung..... **Error! Bookmark not defined.**

THE OPERATIONAL EFFICIENCY OF VIETNAMESE BANKS UNDER THE PANDEMIC COVID-19:AN APPLICATION USING A SEMI-PARAMETRIC APPROACH

Nguyen Thi Khanh Trang, Le Viet Giap..... **Error! Bookmark not defined.**

ASSESSMENT OF LIVELIHOOD'S VULNERABILITY TO CLIMATE CHANGE OF LOCAL COMMUNITIES AT COASTAL AREA IN THUA THIEN HUE

Tran Cong Dung, Truong Tan Quan, Dao Duy Minh **Error! Bookmark not defined.**

CURRENT STATUS OF LAND USE RIGHTS AUCTIONS IN PHONG DIEN DISTRICT, THUA THIEN HUE PROVINCE

Pham Thi Thuong, Mai Thanh Van, Nguyen Anh Khue .. **Error! Bookmark not defined.**

FACTORS AFFECT THE QUALITY OF UNION CADRES IN QUANG TRI TOWN, QUANG TRI PROVINCE

Dao Thi Cam Nhung, Phan Nguyen Khanh Long..... **Error! Bookmark not defined.**

THE IMPACT OF FREE TRADE AGREEMENTS ON EXPORTS: THE CASE OF VIETNAM

Duong Thi Dieu My, Phan Thanh Hoan and Pham Xuan Hung**Error! Bookmark not defined.**

VALUE CHAIN APPROACH AND ANALYSIS

Nguyen Quoc Hung , Tran Thi Lan **Error! Bookmark not defined.**

REDUCING PLASTIC WASTE TOWARDS SUSTAINABLE DEVELOPMENT GOALS IN THAILAND

Sopin Jirakiattikul, Kuaanan Techato..... **Error! Bookmark not defined.**

PROMOTING VIETNAM'S ECONOMIC DEVELOPMENT IN THE CONTEXT OF DEEP INTERNATIONAL INTEGRATION AND DIGITAL TRANSFORMATION

Do Thi Thuy Phuong **Error! Bookmark not defined.**

BANK EFFICIENCY, MARKET DISCIPLINE, AND REGULATIONS IN EMERGING ECONOMIES

Anh Le Ngoc Quynh **Error! Bookmark not defined.**

HUMAN RESOURCE DEVELOPMENT IN PRIVATE ENTERPRISES IN HUE CITY, THUA THIEN HUE PROVINCE **Error! Bookmark not defined.**

Nguyen Ho Minh Trang,..... **Error! Bookmark not defined.**

ANALYSIS OF NON-CASH PAYMENT ADOPTION BY ENTERPRISES USING THE TECHNOLOGY - ORGANIZATION - ENVIRONMENT (TOE): A CASE STUDY IN THUA THIEN HUE PROVINCE, VIETNAM

Tram Tran Thi Khanh, Anh Le Ngoc Quynh..... **Error! Bookmark not defined.**

ENTREPRENEURSHIP EDUCATION AND ENTREPRENEURIAL INTENTIONS OF STUDENTS IN THE UNIVERSITY OF ECONOMICS, HUE UNIVERSITY

Le Quang Truc, Hoang Trong Hung, Tran Duc Tri, Nguyen Hoang Ngoc Linh.....**Error! Bookmark not defined.**

IDENTIFYING DETERMINANTS AFFECTING INDIVIDUAL REAL ESTATE INVESTMENT DECISION IN EMERGING URBAN LAND MARKET, CENTRAL REGION, VIETNAM

Bui Duc Tinh **Error! Bookmark not defined.**

THE DEVELOPMENT POLICIES OF SMART UNIVERSITIES IN VIETNAM

Nguyen Thanh Tuan, Nguyen Dinh Hoa Cuong **Error! Bookmark not defined.**

DEVELOPMENT OF TRADITIONAL HANDICRAFT PRODUCTS IN QUANG TRI PROVINCE IN THE CONTEXT OF DIGITAL TRANSFORMATION

Phan Van Hoa, Le Ngoc Quynh Anh, Bui Dung The, Hoang Trong Hung, Nguyen Thanh Tuan, Tran Cong Dung, Tran Huynh Quang Minh, Nguyen Thi Minh Phuong, Nguyen Cong Dinh, Nhieuh Khanh Phuoc Hai 6

EFFECTS OF PSYCHOLOGICAL COMPETENCIES ON EMPLOYEES' WORK RESULTS: A CASE STUDY OF MOBIFONE IN DAK LAK PROVINCE

Ha Thi Kim Duyen, Le Viet Anh, Le Thanh Ha, Duong Thi Thi **Error! Bookmark not defined.**

IN DAK NONG PROVINCE BY ANALYZING THE SHORTFALL OF BASIC SOCIAL SERVICES FOR POOR HOUSEHOLDS.....

Ao Xuan Hoa, Vu Trinh Vuong, Le The Phiet, Truong Van Thao, Dang Thi Thu Van **Error! Bookmark not defined.**

THE ECONOMIC EFFICIENCY OF THE AUTOMATIC IRRIGATION TECHNIQUE APPLIED IN COFFEE PRODUCTION IN M'DRAK DISTRICT, DAK LAK PROVINCE

Do Thi Nga, Nguyen Mai Thao Nguyen **Error! Bookmark not defined.**

COFFEE PRODUCTION EFFICIENCY OF FARMER HOUSEHOLDS IN CU M'GAR DISTRICT, DAK LAK PROVINCE

Nguyen Thanh Phuong, Nguyen Thi Hai Yen, Pham Van Truong, Nguyen Thi Minh Phuong **Error! Bookmark not defined.**

FACTORS AFFECTING ORGANIZATIONAL COMMITMENT AMONG BANK OFFICERS IN DAK LAK PROVINCE

Le Viet Anh **Error! Bookmark not defined.**

BARRIERS TO DIGITAL TRANSFORMATION OF SMALL AND MEDIUM ENTERPRISES IN THE CENTRAL HIGHLANDS REGION

Le The Phiet, Vo Xuan Hoi, Ao Xuan Hoa **Error! Bookmark not defined.**

FACTORS AFFECTING SATISFACTION ON PERSONAL LENDING SERVICES – CASE STUDY AT AGRIBANK DAK LAK

Nguyen Thi Hai Yen, Tran Thi Ngoc Hanh, Tran Trung Minh **Error! Bookmark not defined.**

BUILDING A MODEL FOR STUDYING FACTORS AFFECTING THE APPLICATION OF INTERNATIONAL FINANCIAL REPORTING STANDARDS BY ENTERPRISES IN VIETNAM

Nguyen Thi Thanh Ty, Do Thi Thanh Xuan, Huynh Thi My Duyen **Error! Bookmark not defined.**

VERIFICATION OF CONDITIONS FOR EXECUTE OF BAILERS' JUDGMENTS DURING THE INTEGRATION PROCESS - CURRENT SITUATION AND SOLUTIONS

Nguyen Thi Tuyen, Tran Quoc Yen..... **Error! Bookmark not defined.**

THE FUTURE OF COFFEE FARMING IN DAK LAK PROVINCE, VIETNAM: MONOCULTURE OR CROP DIVERSIFICATION

Phan Thi Thuy, Le Duc Niem **Error! Bookmark not defined.**

THE IMPACT OF ARTIFICIAL INTELLIGENCE ON CUSTOMER EXPERIENCE IN HOSPITALITY INDUSTRY

Duy Manh Doan, Thao Vy Pham, Nghiem Hong Ngoc Bich Pham, Trung Thanh Doan **Error! Bookmark not defined.**

AGRICULTURAL EXPORTS OF DAK LAK PROVINCE IN THE CONTEXT OF INTEGRATION

Bui Ngoc Tan, Nguyen Trinh Thanh Nguyen, Nguyen Thi Mai Trinh..... **Error! Bookmark not defined.**

ATTRACTING FOREIGN INVESTMENT IN DEVELOPING ECONOMIC IN DAK LAK PROVINCE

Duong Thi Ai Nhi, Nguyen Thi Minh Phuong **Error! Bookmark not defined.**

CARBON MARKET REGULATIONS OF VARIOUS COUNTRIES WORLDWIDE AND LESSONS LEARNED FOR VIETNAM

Trinh Thi Thuy. **Error! Bookmark not defined.**

MARKETING POLICIES FOR INDIVIDUAL CUSTOMER LOAN SERVICES - RESEARCH AT VIETNAM BANK FOR AGRICULTURE AND RURAL DEVELOPMENT - DAK LAK PROVINCE BRANCH

Tran Thi Ngoc Hanh, Nguyen Thi Hai Yen **Error! Bookmark not defined.**

STUDENTS' DECISIONS TO STUDY ACCOUNTING AT TAY NGUYEN UNIVERSITY: SITUATIONS AND RECOMMENDATIONS

Nguyen Ha Hong Anh, Do Xuan Viet..... **Error! Bookmark not defined.**

PROPOSALS TO IMPROVE VIETNAMESE BANKRUPTCY LAWS IN CURRENT CONDITIONS

Nguyen Thi Thanh Ngoc; Do Thi Bong; Nguyen Truong Tam..... **Error! Bookmark not defined.**

THEORETICAL BASIS OF RESEARCH ON ECONOMICAL EFFICIENCY IN INTER-CULTIVATION OF FARMING HOUSEHOLDS

Tran Manh Hung **Error! Bookmark not defined.**

TRANSITION FROM ISQC TO ISQM: IMPLICATIONS FOR THE PROFESSIONAL JUDGEMENT IN AUDITING

Tran Khanh Lam, Nguyen Tuan..... **Error! Bookmark not defined.**

DEVELOPMENT OF TRADITIONAL HANDICRAFT PRODUCTS IN QUANG TRI PROVINCE IN THE CONTEXT OF DIGITAL TRANSFORMATION

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SUMMARY: Traditional handicraft products of Quang Tri province are items created from traditional handicraft industries, which have existed for a long time and have many priceless heritage values. However, in recent years, particularly since the outbreak of the COVID-19 epidemic, as well as the 4.0 industrial revolution, the development of digital technology, and digital transformation, the production and consumption of goods in these occupations have faced numerous challenges and restrictions. The primary challenges include outdated technology; an ineffective state of marketing, advertising, and digital transformation; a decrease in the quantity of orders and contracts, culminating in low competitiveness along with a shrinking market, etc.

To develop traditional handicraft items in Quang Tri province, local governments must implement realistic solutions and strategies such as using digital technology, digitizing products for marketing, and consumer market development; providing financial support; encouraging businesses to invest, entering into joint ventures, and forming linkages to form product supply chains from market research, product design, raw material supply, production, distribution, and consumption of products, etc, contributing to the preservation and promotion of traditional handicraft goods and manufacturing sectors in Quang Tri province, increasingly satisfying consumer needs in the current context of digital transformation.

Keywords: Handicrafts, traditional crafts, handicraft development, Thua Thien Hue

JEL codes: E00, M10

1. INTRODUCTION

Traditional handicrafts have existed for a long time in the globe in general and in our country in particular, which means they are widely distributed across regions, primarily in rural areas. As of 2021, Vietnam had 168 traditional crafts and 1,966 recognized traditional craft villages. The total number of establishments engaged in rural industry production and business is 812,956, including 9,544 enterprises, 2,988 cooperatives, 6,736 cooperative groups, and over 793,688 households, employing over 2.23 million people, contributing to economic restructuring, rural labor, preserving and promoting national cultural identity (*Ministry of Agriculture and Rural Development, 2021*). By the end of 2022, there will be 8,689 OCOP products achieving 3 stars or higher (an increase of 3,919 products from 2020), of which 65.5% are 3-star products, 33.3% are 4-star products, 1% potential 5-star products, and 20 5-star products; with over 4,273 entities participating in the OCOP Program, of which 38.6% are cooperatives, 26.1% are businesses, 32.9% are production establishments/business households,

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and the rest are cooperative groups (*Ministry of Agriculture and Rural Development, 2022*). There are 163 nations and territories where Vietnamese handicrafts can be found. In the period 2015-2022, the export turnover of Vietnamese handicrafts increased on average 9.5% per year, from 1.62 billion USD (2015) to 2.23 billion USD (2019) (*Government, 2018*), reaching nearly 3 billion USD (2021) and decreasing to 2.4 billion USD (2022) due to the impact of the epidemic and geopolitical developments that reduced Vietnam's handicraft exports (*Nguyen Hanh, 2023*). Craft villages and traditional industries have been producing thousands of different types of traditional goods and handicrafts, ranging from embroidery and weaving products to rattan, bamboo, leaves, and sedge; from lacquer, wooden furniture to ceramics, porcelain, horns, and shells; from iron and copper metals to gold, silver, precious stones, and so on.

Quang Tri has a long history of manufacturing and consuming traditional handcraft goods despite its pretty challenging climatic conditions for agricultural development. According to the Department of Agriculture and Rural Development, there are currently 13 traditional occupations and traditional craft villages recognized in the province, out of a total of 66 professions and craft villages, focusing on two groups: processing and preserving agricultural, forestry, and aquatic products (8 occupations), and producing handicrafts (5 occupations), including 2 traditional occupations and 11 traditional craft villages; with 05 cooperatives, 01 enterprise and 1,585 households participating in production in craft villages with 3,072 workers (*Quang Tri Provincial People's Committee, 2020*).

However, developing these types of products to meet the increasing needs of people faces many difficulties. Although developing rural industries, traditional industries, and craft villages has been the policy of local authorities since 2004 (*People's Committee of Quang Tri province, 2004*), rural industries in general and traditional handicraft industries in localities in the province in particular still have many shortcomings, such as fragmented production, small scale, little capital, monotonous products, not high quality, poor design, packaging, advertising, application of digital technology, slow digital conversion, etc, so consumption and efficiency are low, products do not meet new social requirements and competition is difficult, especially in the period 2020-2022 with the outbreak of the Covid-19 pandemic, and in the current context of digital transformation. As a result, research and development of traditional handicraft items in Quang Tri province is critical in the context of digital transformation, which is both topical and a long-term strategy for developing local traditional crafts. Resolve those issues to expand product production and consumption, thereby contributing to local economic growth and conserving national cultural identity, notably traditional crafts, to satisfy the consumption needs of the local people and the whole nation.

2. THEORETICAL BASIS

Up to now, traditional handicraft items have been widely produced and consumed all over the world; nevertheless, there is no accurate, consistent definition of traditional handicraft products (*Yongzhong Yang, Mohsin Shafi, Xiaoting Song, and Ruo Yang, 2018*). There are many various points of view on traditional handicrafts currently.

In 1997, at the International Conference on Crafts and International Markets in Manila, Philippines under the sponsorship of the United Nations Educational, Scientific and Cultural Organization (UNESCO) and International Trade Centre (ITC), defined by Dianna McLeod "Traditional handicraft products are those that have been produced for a long time by artisans, entirely by hand or with the assistance of hand tools or mechanical means, but the artisan's direct manual labor is the most important component of the product. They are created in unlimited quantities and with raw ingredients derived from renewable resources. The distinguishing aspects of handcraft items are utilitarian, aesthetic, artistic, creative, culturally entrenched, decorative, functional, traditional, religious, social symbols, and significance" (*UNESCO/International Trade Center (ITC), 1997*).

Meanwhile, Rogerson argues that traditional handcraft products must be 80% handmade and can contain a wide range of raw materials such as natural fibers, fabrics, granulated clay, and traditional recyclable materials (Rogerson, C.M, 2010).

According to Tran Quoc Vuong and Do Thi Hao, traditional handicraft products in our country have existed for a long time, developed and existing alongside the nation's growth history, from millions to tens of thousands of years ago. Traditional crafts create traditional handmade products to serve different uses in human social life. In the beginning, people created items by hand using about 12 different types of materials, including stone, wood, bamboo, seashells, snail shells, dirt, tree bark, vines, bones, horns, ivory, leather, etc. However, at the time, handicrafts were not a professional career, it only served people's gathering and hunting (Tran Quoc Vuong, Do Thi Hao, 2014).

According to Duong Ba Phuong: "Traditional handicrafts include non-agricultural occupations that existed before the French colonial period and still exist today. Traditional crafts may also include enhanced crafts or the use of modern machinery to aid production, but they must adhere to traditional technology while exhibiting the unique cultural features of the Vietnamese people" (Duong Ba Phuong, 2001).

From the above concepts, it can be seen that traditional handicraft products are products that have existed for a long time, mainly made by hand, and have personal creativity, cultural, artistic, and high aesthetic value.

In the current setting, as the 4.0 industrial revolution accelerates and becomes an era trend, economies around the world in general, and our country in particular, our Party and State firmly push transferring to a digital economy. The COVID-19 pandemic broke out worldwide in the years 2020-2021, causing a new trend in production and business, which is the trend of digital transformation, leading to many businesses in general, operating in the field of crafts, traditional crafts in particular, to quickly apply digital transformation to survive, develop, and compete.

The next step in the evolution of computerization is digital transformation, which has been made possible by the tremendous progress of innovative new technologies, particularly digital technology. Digital transformation is the process of transforming individuals and organizations in their ways of living, working, and producing through digital technologies (Ministry of Information and Communications, 2021).

Digital transformation not only helps increase productivity and reduce costs but also opens up new development space, creating new values in addition to inherent traditional values. Digitally transforming businesses can be done through rethinking business direction, re-evaluating the value chain, reconnecting with customers, and restructuring the business (Nguyen Thi Thu Huong, Nguyen Van Dung, 2021). For small and medium-sized businesses, digital transformation brings new business opportunities. Anyone can become a business, selling products and services on digital platforms and e-commerce platforms. Small and medium-sized businesses can digitally transform faster, more economically, and more effectively through the use of platforms (Ministry of Information and Communications, 2021).

Based on the perspective of development, it is a process of growing up and improving in all areas. In any field, development satisfies the following elements: an increase in both quality and quantity; changes in structure, institutions, types, and organizations; market changes; and maintaining social justice, security, and order (Fajardo, F., 1999), developing traditional handicraft products are no exception to that viewpoint. Within the framework of this research, the content of developing traditional handicraft products in the context of digital transformation includes:

Firstly, quantitative development: that is the increase in the number of production establishments and types of production organization; increase in the number of input factors applying digital technology to serve production, especially machinery, equipment, and production technology; increase in the number of product types, designs, sizes, handicrafts, and traditional handicrafts due to the application of digital technology in production, distribution,

and consumption. Production development not only grows in amount over time but also in quantity according to local, regional, geographical area, etc.

In the context of digital transformation, the above quantitative increase is in the direction of applying digital technology to product production and consumption.

Secondly, qualitative development: it is an increase in product quality; the increase in the application of scientific and technological advances, and modern advanced machinery and equipment. In addition to the above factors, in the production of handicraft products, the human factor is artisans and skilled workers with increased experience and creativity in design, creating product designs using the internet and digital technology is very important, contributing to improving and enhancing the quality of products made, meeting the aesthetic needs and value of use provided to customers. Besides, increasing production quality also means increasing the improvement and protection of the production environment, community ecological environment, and local society.

In the context of digital transformation, the above qualitative increase in the direction of applying digital technology to production increases product quality; applying digital technology to product distribution and consumption such as product digitization, advertising, promotion, marketing on websites, social networks, internet, online ordering, and sales... contributing to promoting product brand images, attracting customers and increasing consumption.

Thirdly, along with increasing quantity and quality, the process of production development is also a process of moving in an ideal direction in terms of the structure of production components as well as consumed products. Positively shift the structure of input factors towards more savings, progress, rationality, and efficiency.

In this aspect, the application of digital technology through scientific and technological advances, modern advanced machinery and equipment gradually replaces old, outdated technology and machinery that pollute the environment. Apply digital transformation to management and move towards large-scale, reputable, branded, effective, and highly competitive forms of production management organization in the world market; items produced are increasingly rich and diverse, highly aesthetic, of great value, increasingly meeting and satisfying the needs of domestic and foreign consumers.

Fourthly, in addition to an increase in quantity and quality, as well as positive structural transformation, production development necessitates the participation of the policy system, state, and local government measures in planning strategies for developing handicrafts in areas utilizing digital transformation, such as strategies or intentions, plans for growth, capital - credit support policies, training of artisans - skilled workers, brand building and development policies, market policies, etc (Phan Van Hoa, 2022).

3. RESEARCH METHODS

The study focuses on analyzing secondary data sources collected from agencies and departments in Quang Tri province. Primary data sources were collected through a survey of 107 traditional handicraft production establishments in the province. According to statistical results of the Department of Agriculture and Rural Development of Quang Tri and Decree 52/2018/ND-CP on rural industry development, rural industry activities (Government, 2018), period 2020-2022, in the province, there are 7 traditional handicrafts in 13 occupations, traditional craft villages have 1,815 establishments participating in production. Through field surveys, the research team selected 7 traditional occupations in 7 localities with a total number of production establishments of 1,277 establishments. These are traditional craft villages with a large number of concentrated production facilities that meet the requirements for surveying and collecting primary data. Applying the Slovin formula (1984), with an error of 10%, the number of survey samples is 93. However, to ensure accuracy and redundancy, we surveyed 100 households and structured it according to Table 2. Nevertheless, because the number of participating households in the two traditional crafts of making bean sprouts and ginger jam is not large, the sample ratio is 2 households and 1 household, respectively. To ensure the average data is accurate and representative, we chose to survey these 2 occupations with 5 households

each. Thus, the total number of adjusted households is 107 households. For direct consumer customers, according to the introduction of production households, 7 occupations, each choose to introduce 5 customers. The total number of surveyed customers is 35 customers who consume products of traditional crafts and traditional craft villages under investigation. The 7 traditional handicrafts selected for investigation in Trieu Phong district are Noodle making in Linh Chieu village, Trieu Son commune (9 establishments); fish sauce making profession in Gia Dang village, Trieu Lang commune (15 establishments); Hai Lang district includes: conical hat making in Tra Loc village, Hai Xuan commune (27 establishments), wet cake making in Phuong Lang village, Hai Ba commune (29 establishments), winemaking in Kim Long village, Hai Que commune (17 establishments), bean sprout making a profession in Lam Thuy village, Hai Vinh commune (5 establishments) and ginger jam making profession in My Chanh village, Hai Chanh commune (5 establishments).

Applying the random sampling method, the research team selected samples according to the ratio and list provided by the locality. Implementing the direct interview survey method according to a pre-developed questionnaire, the research team conducted interviews to collect data and conduct field research at the production facility under investigation. Among the 7 occupations in the 7 localities above, the research team selected each occupation with a large scale of production and consumption to conduct case studies and in-depth surveys. The synthesis and analysis methods used in the research are mainly descriptive statistics, disaggregation, comparison, economic accounting, etc.

To evaluate the content of traditional handicraft product development in the context of digital transformation, the indicators used are mainly indicators to evaluate the increase in quantity, quality, and structural transformation in both absolute and relative terms, including indicators to measure the increase in quantity and value; growth rate, development of production facilities, input factors and results, output efficiency, and so on.

4. RESEARCH RESULTS AND DISCUSSION

4.1. Overview of the development of traditional handicraft products in Quang Tri Province

*** Bean sprout products in Lam Thuy village, Hai Vinh commune, Hai Lang district**

In the year of the Fire Goat 1307, King Tran Anh Tong issued an edict changing the name of Chau O - Chau Ly to Chau Thuan - Chau Hoa. According to the village register as well as other historical documents, the name Lam Thuy village has been around for nearly 700 years. The profession of making bean sprouts appeared from there and has been passed down to this day. Currently, the bean sprout profession is developing strongly with more than 125 households working in the profession, the total annual bean sprout product is more than 100 tons (*Bui Viet Thanh, 2017*).

*** Ginger jam product in My Chanh village, Hai Chanh commune, Hai Lang district**

My Chanh village in Hai Chanh commune was explored by 5 families: Cai, Nguyen, Mai, Doan, Do, and Vo, which was named My Chanh during the reign of Emperor Quang Trung (1786-1788). Ginger jam was processed before 1945. Currently, the village has 641 households, of which 215 households participate in ginger jam production, with an average annual production of about 70-200 tons (*Bui Viet Thanh, 2017*).

*** Fresh vermicelli products in Cam Thach village, Cam An commune, Cam Lo district**

Fresh vermicelli in Cam Thach village, Cam An commune dates back to the 14th century. According to oral tradition, when immigrants first migrated from their old hometown of Thanh Hoa to establish Cam Thach village, most households kept the traditional job of making vermicelli for sale, and a small part grew rice to provide raw materials for making vermicelli. Currently, Cam Thach village has 108 households, of which 48 households specialize in producing vermicelli and selling it in Cho Song, Cam Lo with a very characteristic flavor: fragrant, sweet, fatty, chewy, delicious, and famous in the region, so people often call it Bun Song. Marble vermicelli is very "water-loving", draining the water and absorbing it into the

vermicelli fibers very quickly, so it is suitable for many traditional dishes such as vermicelli eaten with fish sauce, with hot pot, vermicelli with pork leg, vermicelli with beef, vermicelli with mussels, grilled meat vermicelli, etc (*Thanh Hai, 2017*).

*** Fresh vermicelli products in Linh Chieu village, Trieu Son commune, Trieu Phong district**

Linh Chieu traditional vermicelli craft village, Trieu Son commune, has long specialized in vermicelli production. The advantage of producing vermicelli here is using rice ingredients from the Trieu Son countryside. The recipe for making vermicelli has been passed down through generations. Nowadays, vermicelli production is completely done by machine, and productivity and quality have increased. Currently, the craft village has 380 households, of which 128 households participate in vermicelli production. This is also a craft village with the presence of beliefs such as worshipping Ba Hoa, Ba Thuy, Ba Tho, Ba Moc, Ba Kim, and Mieu Am Hon (*Bui Viet Thanh, 2017*).

*** Fresh vermicelli products in Thuong Trach village, Trieu Son commune, Trieu Phong district**

Thuong Trach village was formed in 1553 by the Thanh-Nghe people to explore with the Truong and Tran families. Currently, the village has 54 households out of a total of 127 households participating in the production of fresh vermicelli to supply the needs of people in the area (*Bui Viet Thanh, 2017*).

*** Wet cake product in Phuong Lang village, Hai Ba commune, Hai Lang district**

According to "O Chau Can Luc" by Duong Van An, Phuong Lang village belonged to Vu Xuong district and was famous for paper making. Like other craft villages, people in Chau Dien and Chau Hoan areas came to explore new lands, led by Mr. Vo Cong Lu and Vo Cong Duong from Do Phu, Nam Duong, Truong Cat commune (Nam Dan, Nghe An) took the lead in the mid-15th century. After that, the Le, Mai, Nguyen, Tran, Doan, Do, and Vo families continued to explore and build today's Phuong Lang village. Phuong Lang wet cake craft village is named among the famous craft villages of Vietnam. Currently, the village has 337 households making wet cakes to supply people in the region and the whole country (*Bui Viet Thanh, 2017*).

*** Conical hat products in Bo Lieu village, Trieu Hoa commune, Trieu Phong district**

According to "O Chau Can Luc", Bo Lieu village was formed in the 16th century in Vu Xuong district, Trieu Phong district, currently Trieu Hoa commune. As a purely agricultural area, the conical hat profession here is only considered a side job, however, this profession has created a large number of jobs during leisure time, increasing income. Presently, the village has 101 households, of which 45 households participate in making hats. The village was developed by four families: the Nguyen, Do, Le, and Tran families (*Bui Viet Thanh, 2017*).

*** Conical hat products in Tra Loc village, Hai Xuan commune, Hai Lang district**

Tra Loc Village was formed over 500 years ago and still retains many traditional cultural values of the clan and community. The village has 3 families: Le, Cap, and Duong, which have been in the farming field for 19 generations now. The village has 450 households with 130 households participating in hat-making. The craft of making conical hats in Tra Loc was formed nearly 100 years ago, around the beginning of the 20th century, and is the second most traditional profession after rice growing, especially in the Cap and Le families. Currently, many artisans have been working in the profession for over 50 years (*Bui Viet Thanh, 2017*).

*** Conical hat products in Van Quy village, Hai Tan commune, Hai Lang district**

At the end of the Later Le Dynasty, in the 15th century, King Le Thanh Tong called on people to go to the Thuan Hoa area to make a living, people of the following families: Le, Nguyen, Do, Tran, Pham stopped and started farming Van Quy village. Van Quy's conical hat craft has been established for over 100 years. Currently, more than 106 households out of 300 households are making conical hats with 10 artisans with over 50 years of experience belonging to the Nguyen and Le families (*Rogerson, C.M., 2010*).

*** Conical hat products in Van Tri village, Hai Tan commune, Hai Lang district**

The village has a common development history with Van Quy village, Van Tri was separated from the old Van Quy village. During leisure time, people create hats to use and then exchange them for rice or other necessities. Currently, the village has 72 hat-making households out of a total of 300 households, passed down through generations until today. The village has had 12 artisans making hats for more than 45 years, focusing on the Nguyen and Pham families (*Bui Viet Thanh, 2017*).

*** Fish sauce products from Gia Dang village, Trieu Lang commune, Trieu Phong district**

Gia Dang village, Trieu Lang commune has had a traditional profession of making fish sauce for over 300 years associated with the fishery. The people in Gia Dang village mainly belong to the Tran family. Because the village is coastal, rice growing is very scarce, land is only for growing potatoes on sand. Gia Dang fish sauce products have a delicious taste that is very popular with consumers, has been a famous specialty for a long time, and has become a traditional cultural beauty of Gia Dang village (*Bui Viet Thanh, 2017*).

*** Fish sauce products of My Thuy village, Hai An commune, Hai Lang district**

In the early 14th century, people in the North and Thanh Nghe Province moved here to make a living with three main families: Tran, Phan, and Truong originating from Phuong Chau (Dien Chau, Quynh Luu, Nghe An).). This craft village was formed more than 500 years ago. Currently, the village has 168 fish sauce processing households. Today, annual revenue from water processing at My Thuy fish sauce accounts for over 50% of the total income of the entire Hai An commune (*Bui Viet Thanh, 2017*).

*** Wine products of Kim Long village, Hai Que commune, Hai Lang district**

Making wine is a long-standing traditional profession in Kim Long village, Hai Que commune. The fame of Kim Long village is recorded by "Dai Nam Nhat Thong Chi": Kim Luong wine (Kim Long) is better and there is a tax (*Cited from the National History of the Nguyen Dynasty, 2012, p.481*). Wine is brewed using the "upper water" method. The Kim Long people choose the casuarina tree, a tree that grows on the sand with a strong, slow-burning trunk, as fuel for making wine. One thing that makes the special flavor of the wine here is the copper pot chosen to brew the wine to help preserve the characteristic spicy taste. Presently, the village has 225 winemaking households. After hundreds of years of existence and development, Kim Long Wine has now affirmed its position and brand in the domestic and international markets (*Bui Viet Thanh, 2017*).

In general, the development of traditional handicraft products in Quang Tri province in recent times has been quite modest compared to many localities in the region such as Thua Thien Hue, and Quang Nam in terms of the number of industries, scale of production facilities, output and product types, etc. However, the province's traditional handicraft industry creates hundreds of thousands of local jobs each year, providing a large number of traditional products to meet people's needs, many of which reach the whole country such as Phuong Lang Wet Cake, Gia Dang Fish Sauce, My Thuy Fish Sauce, Kim Long Wine, and so on.

TABLE 1. OUTPUT OF TRADITIONAL HANDICRAFT PRODUCTS PRODUCED IN QUANG TRI PROVINCE IN 2022

No.	Items	Unit(s)	Quantity	Number of production households (households)
I	Group Processing and preserving agricultural, forestry, and fishery products			
1	Lam Thuy Bean Sprouts	Ton	100.0	125
2	My Chanh Ginger Jam	Ton	120.0	215
3	Marbled Vermicelli	Ton	2,500.0	48
4	Linh Chieu Vermicelli	Ton	6,000.0	128
5	Thuong Thach Vermicelli	Ton	1,550.0	54
6	Phuong Lang Wet Cake	Ton	56,700.0	337
7	Gia Dang Fish Sauce	Litre	700,000.0	59
8	My Thuy Fish Sauce	Litre	600,000.0	168
9	Kim Long Wine	Litre	500,000.0	225
II	Handicraft production group			
10	Bo Lieu Conical Hat	Item	80,000.0	45
11	Tra Loc Conical Hat	Item	120,000.0	130
12	Van Quy Conical Hat	Item	100,000.0	106
13	Van Tri Conical Hat	Item	80,000.0	72

Source: Department of Agriculture and Rural Development, Quang Tri province

4.2. Development situation of traditional handicraft production establishments in Quang Tri province

Compared to many other localities in the country and region, traditional handicraft industries in Quang Tri province are not strongly developed, the number of occupations is not many, and the concentration of scale is not high. According to statistics from the Department of Agriculture and Rural Development, there are currently 66 occupations and craft villages in the province, of which the Provincial People's Committee decided to recognize 11 traditional craft villages and 2 traditional handicrafts. The whole province currently has 10 craft villages that have registered trademark protection for their products; OCOP products such as Jasminum Subtripinerve gel, Van Linh clean vermicelli, etc. In the period 2020-2025, continue to develop and upgrade craft village products, focusing on several products such as conical hats, brocade weaving, vermicelli noodles, and seafood processing: fish sauce, jellyfish, shrimp, steamed fish, and so on.

It is expected that by 2030, the province will invest, support, and restore to preserve, develop, and recognize 3 more traditional craft villages: Van Quy Embroidery Village, Van Tri Embroidery Village, Hai Tan Commune, Hai Lang District and Lan Dinh wicker village, Gio Phong commune, Gio Linh district with 10 traditional crafts in the area such as Ba Nang leaf yeast wine, Ba Floor wine, Huong Hiep can wine, Tan Long wine, Trieu Thanh spring rolls, A Bung brocade weaving, KaLu brocade weaving, Co Nhoi broom, Tham Khe flour floss, Tuong Van salt... will especially support investment to develop many OCOP products in the area.

Besides, implementing the national digital transformation policy, Quang Tri province has also had many policies to encourage agencies, businesses, and people in the area to strongly apply digital transformation in production, business, services, and product consumption.

TABLE 2: DEVELOPMENT OF THE TRADITIONAL HANDICRAFT SECTOR IN QUANG TRI PROVINCE FROM 2011 TO 2022

Target	Unit(s)	2011	2020	2022	Comparison 2020/2011		Comparison 2022/2020	
					+/-	%	+/-	%
I. Number of manufacturing establishments	Establishment	321	1,601	1,712	1,280	398.8	111	6.9
1.1 Processing and preserving agricultural, forestry, and fishery products	Establishment	321	1,251	1,359	930	289.7	108	8.6
1.2 Production of handicrafts	Establishment	0	350	353	350	-	3	0.9
II. Classified according to the form of management organization								
2.1 Enterprise	Enterprise	0	1	1	1	-	0	0.0
2.2 Cooperative	Cooperative	1	5	5	4	400.0	0	0.0
2.3 Cooperation Group	Establishment	0	10	10	10		0	0.0
2.4 Individual households	Household	320	1,585	1,696	1,265	395.3	111	7.0
III. Total number of employees	Laborer	643	3,072	3,236	2,429	377.8	164	5.3
3.1 Processing and preserving agricultural, forestry, and fishery products	Laborer	643	2,262	2,417	1,619	251.8	155	6.9
3.2 Production of Handicrafts	Laborer	0	810	819	810	-	9	1.1
IV. Average income/ Laborer								
4.1 Processing and preserving agricultural, forestry, and fishery products	Million VND/Laborer/Month	1.2	3.0	3.0	1.8	150.0	0	0.0
4.2 Production of Handicrafts	Million VND/Laborer/Month	0	2.5	2.6	2.5	-	0	4.0

Source: Department of Agriculture and Rural Development, Quang Tri province

Table 2 shows that the number of recognized traditional handicraft production establishments has increased significantly in the period 2011-2022. If in 2011 there were only

321 establishments, in 2020 there were 1,601 establishments, an increase of nearly 5 times. However, in the period 2020-2022 due to the outbreak of the Covid-19 pandemic, although the locality has made many efforts to create favorable conditions to encourage establishments to establish and develop, the number of traditional handicraft establishments in 2022 compared to 2020 will increase insignificantly, increasing by 111 establishments, equivalent to 6.9%. In particular, the group of processing and preserving agricultural, forestry, and aquatic products increased the most, in 2020 it increased by 289.7% compared to 2011 and in 2022 it increased by 8.6% compared to 2020.

Regarding the structure of forms of production organization, in the period 2011-2022, the type of production organization is individual households, accounting for a large proportion, accounting for 99%. The size of labor/establishment and average income/worker are low, not high. This shows that traditional handicraft production in Quang Tri is currently on a small and very small scale, the application of digital transformation has not been focused, some establishments apply it spontaneously, but mainly in product promotion, receiving calls and sales, but not massive. In the coming time, local authorities need to take stronger measures to create conditions, support, guide and encourage digital transformation applications, first of all, digitizing products, promoting products and ordering, selling online, and so on.

4.3. Invest in the preservation and development of Quang Tri province's traditional crafts and craft villages

The investment capital plan for the province's preservation and development of traditional crafts and craft villages for the period 2021-2025 is 51.6 trillion VND, of which 50% is primarily capital requested from the central government.

TABLE 3. INVESTMENT CAPITAL PLAN FOR PRESERVING AND DEVELOPING TRADITIONAL CRAFTS AND VILLAGES IN QUANG TRI PROVINCE BETWEEN 2021 AND 2025

Contents	Unit(s)	Quantity	Period 2021-2025			
			Investment capital (Billion VND)			
			Total	Central Budget	Local Budget	Other sources
TOTAL			51,600	26,550	13,750	11,300
1 Infrastructure investment	Point	5	25,000	15,000	10,000	0
2 Training and coaching	Class	40	1,000	1,000	0	0
	Turn of people	1,600	-	-	-	-
3 Science, technology, and environmental treatment	Project	17	15,600	6,600	1,200	7,800
4 Build the model	Model	17	6,000	2,200	800	3,000
5 Commercial promotion	Event	20	4,000	1,750	1,750	500

Source: Department of Agriculture and Rural Development, Quang Tri province

This amount of capital mainly invests in transport infrastructure, electricity, water, etc., and science, technology, and environmental pollution treatment for craft villages, and traditional crafts, making a fundamental contribution to preserving and developing more traditional crafts and villages in the province in the coming time.

4.4. Evaluation of the investigation subjects on the development of traditional handicraft products in Quang Tri province

With 107 enterprises investigated, 14 men and 93 women were interviewed, including product industries such as vermicelli makers, fish sauce manufacturers, conical hats, and bean sprouts, which were all female respondents; on the other hand, wet cake making, wine-making, and ginger jam, which had some male respondents. This also demonstrates that in traditional handicraft industries, women are the primary employees, with a horizon of knowledge, and industry secrets, and constitute the backbone of product production for industries in Quang Tri province. The average age of interviewees is 50.4 years old; the average educational level is grade 8, grade 9 (average 8.5); and a household has 4.3 individuals and 2.5 workers on average. According to study results, the average Gross Output (GO) of traditional handcraft goods is 109.7 million VND/facility. Among these, the facility producing ginger jam and bean sprouts achieved the greatest level, with production values of 564.2 million VND/facility and 155.5 million VND/facility, respectively; fish sauce and wet cakes have production values of 110.7 million VND/facility and 115.1 million VND/facility, respectively. The remaining BQ goods are not expensive, ranging from 78.2 million VND to 83.1 million VND/establishment. The conical hat-producing profession has the lowest production value of 38 million VND/facility. This shows that GO between different vocational establishments has a very large variation.

According to survey data, the average income per establishment is 42.2 million VND, with the highest being the production of ginger jam and bean sprouts, where the average income is 82.2 million VND/establishment and 80 million VND/establishment, respectively. Although ginger jam manufacture has a high output value, it is also a high-cost occupation, thus the income is comparable to that of many other professions. In 2021, the average income per establishment for the remaining vocations will range from 31.7 million VND to 56.7 million VND/year. In 2022, the conical hat-making profession alone has the lowest income of 23.9 million VND/establishment.

In general, the output and efficiency of traditional handicraft production firms are low and variable. Because the exploitation and usage of input elements are ineffective, production capacity, capital profitability, and the cost of one worker per unit of cost remain low. However, in recent years, an undeniable reality in all 7 investigated occupations has been: taking advantage of families' spare time and all working ages, and bringing higher revenue; more steadily than income from agricultural production activities, the face of rural communities has changed dramatically, with numerous items to suit societal demands.

TABLE 4. RESULTS OF TRADITIONAL HANDICRAFT PRODUCT MANUFACTURING ESTABLISHMENTS SURVEYED IN 2022 (Average/Establishment)

No.	Targets	Gross Output (GO) (Million VND)	Expenses (Million VND)	Income (Million VND)
I	Trieu Phong District			
1	Linh Chieu Vermicelli	78.2	46.5	31.7
2	Gia Dang Fish Sauce	110.7	54.0	56.7
II	Hai Lang District			
3	Tra Loc Conical Hat	38.0	14.1	23.9
4	Phuong Lang Wet Cake	115.1	70.0	45.1
5	Kim Long Wine	83.1	47.0	36.1
6	Lam Thuy Bean Sprouts	155.5	75.5	80.0
7	My Chanh Ginger Jam	564.2	481.4	82.8
	Overall Average	109.7	67.5	42.2

Source: Survey data

However, with the 7 traditional occupations surveyed in 2022 in Quang Tri, the rate of households applying science and technology, particularly the 4.0 revolution and digital transformation, is relatively low. In Quang Tri, the vast majority (almost 100%) of traditional

handicraft production and commercial enterprises surveyed did not use digital technology or digital transformation in the process of designing, preparing, and organizing product production. Only a few businesses use it to acquire raw materials, promote and advertise items, text, call to purchase, ship, and accept electronic payments, etc.

To know the consumption situation and customer satisfaction with traditional handicraft products in Quang Tri province, we conducted a random survey of 30 customers purchasing products from establishments producing and trading traditional handicraft products in the area.

Evaluation of products and product quality: Table 5 shows that some observations have a high rating of completely agree (level 5) such as: "Products are made from natural, environmentally friendly materials", 40%; "Products are mainly handmade", 26.7% and there are no ratings of level 1 and level 2, which means disagree or less. Both of these observations have high average values, 4.37 and 3.97 points, respectively.

Regarding product price: the majority of consumers agree with the observation "Product price is cheap, affordable," which has an average value of 4.23 points and an evaluation rate of levels 4 and 5 of 43.3% and 40.0%, respectively. This demonstrates that the prices of traditional handmade goods are reasonable and appropriate for the ability of clients to pay. However, 10% of customers absolutely disagree and disagree with the criterion "Reasonable product price." This demonstrates that some items and products have higher prices than the expected design or appearance.

Evaluation of distribution channels and services: The observation with the highest average value is "The selling place for traditional handicrafts is quite convenient", reaching 4.03 points, and "The seller is very friendly" has an average value of 4.73 points and up to 73.3% rate it at level 5. The majority of sellers are business owners or old people, very pure in craftsmanship and tradition. They are very slow in accessing new technology and modern trade relations, so their sales are also very outdated, manual, and traditional such as unimportant packaging, no sales knowledge, selling slowly, even letting customers wait for a long time, not knowing how to pamper customers, etc. That makes many customers not very satisfied with the sales methods of traditional handicraft product owners, but they are pretty friendly with customers because they often know and have good relationships in society. However, in the context of digital transformation, sellers and sales methods as above will face many difficulties in sales and consumption.

Regarding the application of digital technology, digital transformation in communication, promotion, consumption of traditional handicraft products and payment of households producing and trading traditional handicrafts investigated in Quang Tri, the table above shows that the average value of the observations is very high, and the ratio of levels 4 and 5 (means agree and completely agree) is quite high. In which observe "15. Texting and calling to order online is quite easy", has the highest average value, 4.20 points with 66.7% rating level 4 and 26.7% rating level 5, there are no ratings for levels 1 and 2, level 3 is not high at only 6.7%. Similarly, observe "17. Goods shipped are guaranteed to be in sufficient quantity as ordered", and "18. Quality of delivered goods is guaranteed" have a high average value, 4.13 points, and 4.07 points respectively. That shows the application of digital transformation for communication, product promotion, ordering, shipping, payment, etc., which are very good, and convenient for customers, so many customers are satisfied and highly appreciated. These are the advantages that digital transformation brings to manufacturers and customers, especially in the current situation when the COVID-19 pandemic is still spreading strongly and we are unknown when it will end (*Phan Van Hoa, Nhieu Khanh Phuoc Hai, 2021*).

TABLE 5. CUSTOMER EVALUATION OF TRADITIONAL HANDICRAFT PRODUCTS IN QUANG TRI PROVINCE IN 2022

No.	Targets	Rating Level (%)					The Average Value	Std. Error
		L1	L2	L3	L4	L5		
I	About the product, product quality							
1	Products are rich and diverse	3.3	10.0	20.0	53.3	13.3	3.63	0.176
2	Products are always fresh and new	3.3	6.7	23.3	53.3	13.3	3.67	0.168
3	Products are mainly handmade	0.0	0.0	30.0	43.3	26.7	3.97	0.140
4	Products are made from natural, environmentally friendly materials	0.0	0.0	3.3	56.7	40.0	4.37	0.102
5	Products are of high quality	3.3	13.3	6.7	66.7	10.0	3.67	0.175
II	About the price							
6	The product price is cheap, affordable	0.0	0.0	16.7	43.3	40.0	4.23	0.133
7	The product price is reasonable	3.3	6.7	23.3	46.7	20.0	3.73	0.179
8	The price is suitable for product quality	0.0	6.7	23.3	53.3	16.7	3.80	0.147
III	About distribution and service							
9	The selling place is quite convenient	0.0	0.0	20.0	56.7	23.3	4.03	0.122
10	The seller is very friendly	0.0	0.0	0.0	26.7	73.3	4.73	0.082
11	The seller is very professional	3.3	6.7	23.3	50.0	16.7	3.70	0.174
12	The seller provided very good packaging support	3.3	10.0	26.7	40.0	20.0	3.63	0.189
IV	About applying digital transformation							
13	Products are promoted and advertised on social networks (Facebook, Zalo, Messenger)	3.3	6.7	23.3	46.7	20.0	3.73	0.179
14	Product information is easily accessible	3.3	6.7	23.3	46.7	20.0	3.73	0.179
15	Texting and calling to order online is quite easy	0.0	0.0	6.7	66.7	26.7	4.20	0.101
16	Goods are shipped quickly and promptly	0.0	0.0	10.0	80.0	10.0	4.00	0.083
17	Goods shipped are guaranteed to be in sufficient quantity as ordered	0.0	0.0	3.3	80.0	16.7	4.13	0.079
18	Quality of delivered goods is guaranteed	0.0	0.0	10.0	73.3	16.7	4.07	0.095
19	Goods are shipped fully packaged and clean	0.0	0.0	10.0	76.7	13.3	4.03	0.089
20	Online payment is convenient	0.0	0.0	13.3	76.7	10.0	3.97	0.089
V	General evaluation							
21	General evaluation when buying traditional handicraft products in Quang Tri province through digital transformation	0.0	3.3	20.0	53.3	23.3	3.97	0.140

Source: Survey data

Notes: Level 1 (L1): Completely disagree; Level 2 (L2): Disagree; Level 3 (L3): Normal; Level 4 (L4): Agree; Level 5 (L5): Completely agree.

From the pros and cons of Quang Tri traditional handicraft products, the overall customer rating for the product is not high. The average evaluation value is 3.91 points < 4. Thus, it is vital to consider and improve local traditional handicraft items, from product stage, price, and services to implement digital transformation to achieve many benefits for customers and business establishments in the approaching period.

4.5. General evaluation of traditional handicraft product development in Quang Tri province

Currently, in the province, there are 13 recognized traditional professions and craft villages, including 11 traditional craft villages and 02 traditional handicrafts. There are 05 cooperatives, 01 enterprises, and 1,585 households participating in production in craft villages with 3,072 workers. With an average income of 2.6 to 3 million VND per person per month, recognized craft villages would reach over 131 billion VND in revenue by 2022.

This is the result of the local government's recent efforts to develop a list of craft villages in Quang Tri province that require long-term conservation. According to locality proposals, 33 traditional occupations, craft villages, and traditional craft villages would be included in the list of craft villages prioritized for conservation and development support between 2021 and 2030. The period 2021-2025 focuses on a group of recognized craft villages as well as several craft villages with products participating in the one-product-per-community program to construct models and boost production development.

Every year, the province prioritizes environmental protection in craft communities. Support activities for vocational training, vocational transmission, skill improvement, and career development are carried out through links between vocational training establishments and enterprises (industrial garment training); self-training and vocational training establishments (Classes of conical hats, brooms, fine arts carpentry, mechanics, seafood processing, rattan, and bamboo weaving); invitation of experts to provide vocational training, transfer skills, improve skills and develop new careers, etc. To boost training efficacy, focus on supporting the development of labor-intensive occupations, integrating vocational training and job transfer with grassroots job creation.

The preservation of long-standing traditional craft villages that are at risk of being lost is implemented through policies to support the development of agricultural production and capital from the national target program on building new rural areas every year. Thereby, it has organized support to improve production lines for 17 rural craft establishments, and annually organized and participated in 5-7 trade promotion fairs inside and outside the province. In addition, through industrial, agricultural, science and technology promotion programs, vocational training for rural and new rural workers, etc., has invested in building craft village infrastructure, applying advanced technology, modern machinery and equipment in production, and treating environmental pollution at production facilities in residential areas, and so on.

Besides, there are also some problems:

- Traditional handicraft industries are preserved and developed slowly, on a small scale, product quality is not high and uncompetitive, and many craft establishments have not boldly invested in production. Mobilizing capital sources to invest in production and business development is mainly the equity capital of households.

- The application of science and technology to production in traditional handicraft industries is still limited. Some industry groups still face difficulties in their development and are slow and unsustainable. Some traditional occupations are in danger of disappearing. In most craft villages in the province, the number of participating households has not yet reached 20% as prescribed by Decree No. 52/2019/ND-CP.

The main reason is that investment funding for rural infrastructure development is still limited and cannot fulfill development needs. Raw material areas are shrinking due to the process of urbanization, industrialization, and conversion of crops and livestock. Because most

industrial operations are tiny and produce on the spur of the moment, capital mobilization remains challenging. Products of traditional handicrafts in Quang Tri today still maintain a very manual and traditional production style, so the types are monotonous, the products lack diversity and aesthetics, and the quality is not high, despite fierce competition from industrial products and similar products in other localities such as wine, fish sauce, conical hats, and so on. Previously, manual production jobs required a large number of workers and households to participate; however, when using machinery and equipment, they focus on a small number of production households, with the remaining households primarily responsible for distribution or outsourcing processing such as making vermicelli, cakes, fish sauce, and so on. Especially, artisans and highly skilled employees are progressively disappearing, and their ability to tolerate the difficulty and inconvenience of handicrafts is substantially diminished, so the products gradually lose their prior tradition, and their attractiveness is greatly reduced.

5. SOLUTIONS FOR DEVELOPING TRADITIONAL HANDICRAFT PRODUCTS IN QUANG TRI PROVINCE

To develop traditional handicraft products in Quang Tri province in the context of digital transformation, through analysis, the research team proposes some of the following solutions:

5.1. General solution group

- The development of traditional handicrafts must be linked to the province's socioeconomic development strategy, with the planning of a priority list of craft villages and sectors for conservation and development support. Planning to allocate land for manufacturing establishments into handicraft zones and clusters, creating favorable conditions for a long-term lease of premises for stable production.

- Applying and developing science and technology in production, business, distribution, and consumption activities, giving priority to the fields of preservation and processing of agricultural products and handicrafts. Encouraging the application of science and technology to traditional handicraft production to increase productivity, and product quality, enhance competitiveness, expand markets, and attract customers, especially the application of digital technology, digitization of products on the internet, social networking sites, strong application of digital transformation in marketing, product promotion, online ordering and sales, etc.

- Implement trade promotion activities and search for product consumption markets; research and select typical traditional handicraft products to build a brand. Organizing and participating in traditional handicraft fairs for production facilities to propagate and promote products to domestic and international markets.

- Continuing to implement preferential policies on capital and credit for traditional handicraft establishments, targeting medium and long-term capital sources to invest in technological innovation, research and create new products, while simplifying loan procedures to enhance establishments' access to preferential capital sources.

- Effectively implement a vocational training program for rural workers, with a focus on skill training in craft villages and traditional craft establishments. Inviting and encouraging enterprises to join in training and employment creation for traditional handicraft workers. Developing a policy to recruit outstanding artisans and employees to participate in training for people.

5.2. Group of specific solutions

- Solutions for applying digital technology to marketing and developing product consumption markets. Currently, for traditional handicraft products in Quang Tri province, difficulties in the consumer market are the biggest difficulties that production and business establishments face, especially during the COVID-19 pandemic outbreak of 2020-2022. Therefore, the basic immediate and long-term solution is that establishments need a marketing strategy to develop the consumer market, especially applying digital technology and digital transformation. In the immediate future, the locality will support inviting technology experts and marketing experts to coordinate production facilities to digitize craft village brands, display products, types, designs, sizes, images, even production processes, orders, e-commerce

contracts, etc, which will register and participate in promoting, advertising, and selling online on social networking sites such as Facebook, Zalo, Twitter, LinkedIn, etc; on official traditional handicraft electronic trading floors of localities, where there is a lot of consumption potential; on online sales websites such as Lazada, Shopee, Sendo, Tiki, etc, so that establishments, units, and individuals consuming and transporting can place orders, contracts, joint ventures, online links, etc, to develop the market, increase production and consumption, first respond to the COVID-19 pandemic, then digitally transform, develop production and consumption of products, improve production and business results and efficiency.

- Applying digital technology by connecting designers and creators with artisans in the product design and manufacturing process. The process of designing new designs and new products for traditional handicraft items in Quang Tri province is currently very limited, almost non-existent, and mainly still relies on the creativity and experience of artisans. Ideas for designing new models and new products currently do not come from users, or consumers, and are not based on new and unique ideas from designers and artists; so aesthetics, uniqueness, and suitability for consumers are not high. The product range is too monotonous, the designs are old, and they lack consumer appeal. That requires the design process of new products and new models to involve participation and connection between new, modern, highly aesthetic designers and contemporary artisans to design new models and designs, new products are more suitable for the times, increasing the attractiveness of the product but still not losing the quality characteristics of the product, ensuring preservation and still promoting the traditions of today's traditional crafts (*Quang Tri Provincial People's Committee, 2020*).

- Investment solutions, equipping modern machinery and equipment in the product production process. Some industries have production processes divided into many stages such as bean sprouts, ginger jam, vermicelli cakes, wine, etc, should invest in modern machinery and equipment to develop production to increase productivity, improve item quality, and gradually improve and conserve the ecological environment. Diversifying ownership forms and types of production and business organizations in craft villages and traditional handicraft industries is an urgent requirement, by the laws of market development in the current context of digital transformation. Promoting the development of collective and individual brands by registering trademarks and product quality; enhancing sales support efforts (advertising, exhibitions, product introductions, etc.) through fairs, the internet, product introduction centers, and so on. Providing goods and products to supermarkets, restaurants, and mobile sales points; establishing stores and sales points to launch products in town, town, and city centers; developing tourist attractions and building craft village tours to generate local consuming markets for products.

- Strengthen linkage and joint venture measures between production facilities and businesses, input suppliers, businesses, and consumer units, forming a link chain, supplying products from market research, and product design to raw material supply, production, distribution, and consumption. Create all conditions to encourage businesses to invest in attracting artisans, fine artists, product designers, training, and fostering skillful craftsmen participating in the production and consumption chain of products. Only businesses are qualified to make good use of artisans, invest in advanced machinery and equipment, apply digital transformation, build and develop brands, increase promotion and advertising, participate in exhibitions, and associate and promote consumption in domestic and foreign markets. In addition, local authorities need to make more efforts and effectively implement policies to support the development of traditional handicrafts and handicrafts such as capital policies, credit, land, infrastructure, tax, science and technology environmental protection, etc.

6. CONCLUSION

Developing traditional handicraft products is extremely important in preserving and developing craft villages and traditional crafts, creating jobs, increasing income, and creating products for society, and local economic development. In recent times, Quang Tri province has recognized 11 traditional craft villages and 2 traditional handicrafts that have created many

types and varieties of colorful handmade products in the locality. Some traditional handicrafts were initially just side jobs but have reached such a level of skill that they have become arts, with workers becoming artisans who have created highly aesthetic works of art, contributed to the culture of the homeland and the nation, creating thousands of jobs, from that contributing to local economic development. However, in current conditions, the production and consumption of traditional handicraft products in the locality face many difficulties and outdated technology; the situation of promotion, advertising, and digital transformation is poor, and the number of orders and contracts is decreasing, leading to low competitiveness and a shrinking market.

Through a survey of 107 establishments producing traditional handicrafts and 30 customers buying traditional handicrafts online, it has been shown that the production and consumption of products in 2022 are not great. If deducting depreciation of fixed assets, family labor wages paying other fees, etc., the production establishments of the above occupations may no longer be profitable; if this continues, many establishments will stop production, making it difficult to stand firm in the market.

To encourage the development of local craft villages and traditional crafts, and develop production, The state, localities, and the production facilities themselves need to have practical and effective solutions such as applying digital technology and digitizing products on the internet to market and develop consumer markets; support capital, encourage banks and credit institutions to support preferential credit; Encouraging organizations and businesses to invest, enter into joint ventures, and form partnerships to form product supply chains from market research, product design to raw material supply, production, distribution, consumption, and so on. Implementing the above solutions, contributing to production development, preserving and promoting traditional crafts in Quang Tri province, and meeting production and consumption needs in the current context of digital transformation.

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