



ISSN: 2602-3385

JOURNAL OF BUSINESS MANAGEMENT AND ECONOMIC RESEARCH

Volume: 3
Issue : 3
Year : 2019



Journal of Business Management and Economic Research

ISSN: 2602-3385

2019, Vol.3, Issue.3

Editor in Chief

KIZANLIKLI, M. Murat (PhD)

Ankara Hacı Bayram Veli University, Faculty of Tourism, Turkey

Board of Referees

BAKALISH Steve (Ph.D.), steve.bakalis@vu.edu.au

Australian Population and Migration Research Centre, Victoria University,
Melbourne, Australia

BOSTAN Ionel (Ph.D.), ionel_bostan@yahoo.com

Dr.HC Stefan cel Mare University of Suceava Romania

EKİNCİ Yüksel (Ph.D.), y.ekinci@henley.ac.uk

The School of Marketing & Reputation, Henley Business School, University of
Reading, Whiteknights Campus, Reading, Berkshire, RG6 6UR

GALANOU Aikaterini (Ph.D.), agalanou@teiep.gr

Epirus University of Applied Sciences, School of Management & Economics /
Department of Accounting & Finance ,Preveza, Greece

ISLAM Rafikul (Ph.D.), rislam@iium.edu.my

Kulliyyah of Economics and Management Sciences International Islamic
University of Malaysia, Malaysia

KUMAR M. Dileep (Ph.D.), dr.dileep.cas@gmail.com

International Teaching University Georgia, Tbilisi, Georgia

OKUMUŞ Fevzi (Ph.D.), fevzi.okumus@ucf.edu

Rosen College of Hospitality Management ,The University of Central Florida

PAVLOVIĆ Nebojsa (Ph.D.), racapn@gmail.com

Faculty of Hotel and Tourism, Vrnjacka banja, University Kragujevac, Serbia

SEGUMPAN Reynaldo Gacho (Ph.D.), segumpan@gmail.com
Department of International Business Administration, College of Applied
Sciences – Rustaq Ministry of Higher Education, Rustaq, Sultanate of Oman

SINGH V.K. (Ph.D.), drvksingh1969@gmail.com, drvksingh@gkv.ac.in
Faculty Of Management Studies [Fms], Gurukula Kangri Vishwavidyalaya
Haridwar, Uttarakhand, India

YÜCEL Recai M. (Ph.D.), recaiyucel@mac.com
Albany New York University / USA,

YÜKSEL Sedat (Ph.D.), sedatyuksel@gmail.com
Department of International Business Administration, College of Applied
Sciences – Rustaq Ministry of Higher Education, Rustaq, Sultanate of Oman



Journal of Business Management and Economic Research

Contents

2019, Vol.3, Issue.3

The Role of Product Innovation in Mediating the Influence of Entrepreneurship Orientation on Marketing Performance (A Study on Silver Craft MSMEs in Celuk, Gianyar)

Ade Mas Dwita Puspa Anjani

Ni Nyoman Kerti Yasa

pp.1-18

The Economic and Statistical Evaluation of Climatic Elements in Tabriz and Isfahan (in Iran)

Mohammad Yazdani

pp.19-33

Determinants of Linking Gaps Tea Production: Case Study of Tea Production Households in Northern Midland and Mountainous Region, Vietnam

Nguyen Nhu Trang

pp.34-45

Ethics of Price Strategies in Business

Piotr Masiukiewicz

Paweł Dec

pp.46-58

ISSN: 2602-3385



**The Role of Product Innovation in Mediating the Influence of
Entrepreneurship Orientation on Marketing Performance
(A Study on Silver Craft MSMEs in Celuk, Gianyar)**

Ade Mas Dwita Puspa Anjani

Faculty of Economics and Business Udayana University, Bali, Indonesia
dwithapuspa9f@gmail.com

Ni Nyoman Kerti Yasa

Faculty of Economics and Business Udayana University, Bali, Indonesia
kertiyasa@unud.ac.id

Abstract

The purpose of this study is to determine the role of product innovation in mediating the influence of entrepreneurship orientation on marketing performance. The sampling method used is the total population sampling method. The total sample taken is 70 respondents. The data collection is conducted by using questionnaires which are given to the owners or managers of the silver craft MSMEs in Celuk, Gianyar. The analysis technique utilized is the path analysis technique and the sobel test. The research results show that the product innovation variable is able to significantly mediate the influence of entrepreneurship orientation on marketing performance. Hence, owners of the silver craft MSMEs in Celuk, Gianyar should always improve their product innovation through new product designs, usage of new materials, and the use of new production tools, in order to increase their marketing performance.

Keywords: Entrepreneurship Orientation, Product Innovation, Marketing Performance.



The Role of Product Innovation in Mediating the Influence of Entrepreneurship Orientation on Marketing Performance (A Study on Silver Craft MSMEs in Celuk, Gianyar)

Ade Mas Dwita Puspa Anjani

Faculty of Economics and Business Udayana University, Bali, Indonesia
dwithapuspa9f@gmail.com

Ni Nyoman Kerti Yasa

Faculty of Economics and Business Udayana University, Bali, Indonesia
kertiyasa@unud.ac.id

Abstract

The purpose of this study is to determine the role of product innovation in mediating the influence of entrepreneurship orientation on marketing performance. The sampling method used is the total population sampling method. The total sample taken is 70 respondents. The data collection is conducted by using questionnaires which are given to the owners or managers of the silver craft MSMEs in Celuk, Gianyar. The analysis technique utilized is the path analysis technique and the sobel test. The research results show that the product innovation variable is able to significantly mediate the influence of entrepreneurship orientation on marketing performance. Hence, owners of the silver craft MSMEs in Celuk, Gianyar should always improve their product innovation through new product designs, usage of new materials, and the use of new production tools, in order to increase their marketing performance.

Keywords: Entrepreneurship Orientation, Product Innovation, Marketing Performance.

1. Introduction

Today, with the increasingly high competition in the market, along with the implementation of the AEC 2015, firms are demanded to be more aggressive in running their business and marketing their products in their respective industries. Firms must develop and implement the correct strategy to market their products. Marketing is the process in which firms create value for customers and

develop strong relationship with customers, with the purpose to capture the value from customers as the reward (Kotler & Armstrong, 2014:27).

Each firm certainly has marketing activities to market their products, so that the products are more known to the people. All marketing activities are performed with the purpose to increase the marketing performance which is a measure of the firm's success (Asashi & Sukaatmadja, 2017). Marketing performance according to Juliana & Artha Kusuma (2017) is the firm's success in attaining a higher annual sales, greater market share, and increase in the number of consumers through various business or marketing strategies. Aside from implementing the right business strategy, the entrepreneurship orientation culture also needs to be developed continuously so that the marketing performance further improves (Musrifah & Muwartiningsih, 2017). Entrepreneurship orientation is very important because through the manager's mindset of always desiring innovation, product innovation will be increasingly encouraged.

Firms need to pay attention to their entrepreneurship orientation which can be in the form of proactive attitude, willingness to take risk, and being innovative in order to continuously innovate their products and eventually increase the competitiveness and performance of the product in the business environment (Ryadi & Yasa, 2016). Entrepreneurship orientation is an important factor for continuous innovation. To achieve continuous innovation, firms need the managerial abilities to utilize the resources effectively.

Aside from entrepreneurship orientation, there are other factors which influence marketing performance, namely product innovation. Product innovation is the implementation of new ideas, which can be in terms of product, process, marketing, and even the organization to increase customer value and contribute towards firm performance or effectivity (Maslucha & Sanaji, 2013). Innovation is a process which involves the generation, development and adaptation of new ideas by the firms (Ahimbisibwe et al., 2013). Innovation is a cultural aspect and the firm's acceptance towards new ideas. They introduce their model to the ability to innovate, which is defined as the organization's ability to adopt and implement new ideas, process or products successfully (Prifti & Alimehmeti, 2017).

This phenomena also occurs in the Silver industry in Celuk, in which a fall in the marketing performance of silver is observed. The decrease in marketing performance of the silver craft MSMEs

in Celuk, Gianyar can be seen from the silver export value fluctuation of Gianyar Regency, Bali, which is shown in Table 1.1.

Table 1.1 The Silver craft Commodity Export Value of Gianyar Regency, Bali.

No	Year	Export Value (USD)	Increase/Decrease (%)
1	2014	4.674.836	-
2	2015	2.944.181	-37
3	2016	3.539.743	20
4	2017	3.232.543	-8,6
5	2018	2.422.192	-25
Average			-12.6

Source: Disperindag of Gianyar Regency, 2018

According to Dharmana Putra & Rahanatha (2017), Bali province is known for its various kinds of handicrafts, especially the handicrafts that are known internationally. Among the famous handicrafts in Bali is the silver crafts. This study focuses on the silver craft MSMEs in Celuk Village, Gianyar Regency. Celuk village is located in Gianyar Regency which is a famous center of silver crafts. The art of silver craft in Celuk has existed since around 1915 (Wardana, 2016:74). The glory of the silver craft MSMEs in Celuk has started to decline, especially since the 1st and 2nd Bomb in Bali in year 2002 and 2005 (Wardana, 2016:6).

Based on the pre-survey results conducted on 10 silver craft MSME owners in Celuk, Gianyar, the MSMEs have an unsatisfying marketing performance. The cause is suspected to be because the entrepreneurship orientation and the product innovation conducted by the silver craft MSMEs in Celuk are not optimal. Consequently, further research must be conducted to prove this matter, which is by examining the variables, namely entrepreneurship orientation, product innovation, and marketing performance.

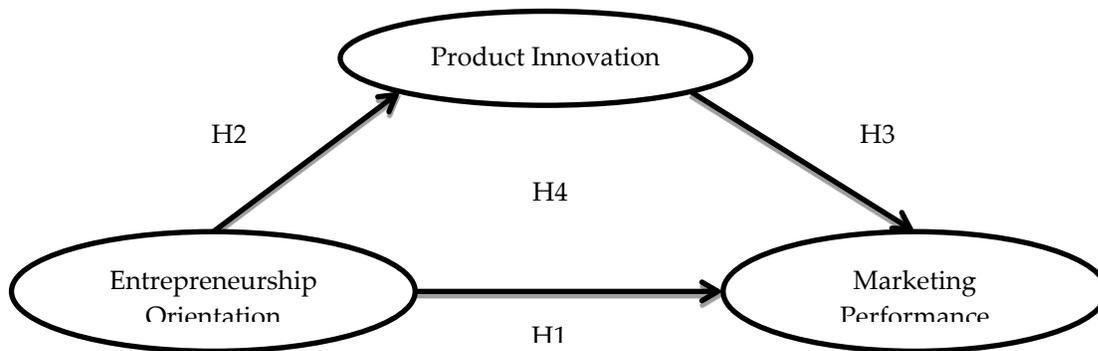
The purposes of this study are: (1) to explain the influence of entrepreneurship orientation on the marketing performance of silver craft MSMEs in Celuk, Gianyar; (2) to explain the influence of entrepreneurship orientation on the product innovation of silver craft MSMEs in Celuk, Gianyar; (3) to explain the influence of product innovation on the marketing performance of silver craft MSMEs in Celuk, Gianyar; and (4) to explain the role of product innovation in mediating the influence of entrepreneurship orientation on the marketing performance of silver craft MSMEs in Celuk, Gianyar.

2. Literature Review and Hypothesis Development

Entrepreneurship orientation is the ability of a person to create something new and different which will be seen as unique. Entrepreneurship orientation is the creativity and innovative ability which is the basis and resource needed to search for opportunities towards success (Syukron & Ngatno, 2016). According to Wardi et al. (2017) entrepreneurship orientation is a firm level characteristic because it reflects the behavior of the firm. More specifically there are three dimensions of entrepreneurship orientation, namely, innovativeness, proactiveness, and the courage to take risks.

Innovation is differentiated into four types, namely product innovation, process innovation, marketing innovation and organizational innovation (Maslucha & Sanaji, 2017). The variables used in this study is the product innovation, and thus this study discusses product innovation. The product innovation developed is expected to be able to increase the firm's ability in producing high quality products. By producing quality products, firms would be able to improve their product development ability, thus continuous product development can be achieved (Juliana & Artha Kusuma, 2017). According to Sondari et al. (2013), in performing innovation, firms must attempt to create greater value for consumers by creating new products with a production process better than competitors.

Marketing performance is the improvement in sales based on how far the firm is able to maintain their existing consumers or increase the number of new consumers (Juliana & Artha Kusuma, 2017). In this current era of high business competition, firms that are able to increase their sales mean that they have a good marketing performance. Djayadningrat et al. (2017) explained that marketing performance is the factor which is frequently used to measure the market achievement of a firm's product. The marketing performance is considered successful if the sales data state that the amount of product sold increase, the number of customers increase, increase in sales, wider market coverage, and the products are more known to the consumers or the people (Mulyani & Mudiantono, 2015).



Picture 1. Conceptual Framework

3. Research Hypothesis

According to the research by Djayadiningrat et al (2017), the variable of entrepreneurship orientation has a positive and significant influence on marketing performance. The research by Ryadi & Yasa (2016) stated that entrepreneurship orientation and product performance has a positive and significant relationship. This means that the greater the entrepreneurship orientation of a business practitioner, the higher the product performance will be. Based on the empirical review, the hypothesis is formulated as follows:

H1 : Entrepreneurship orientation has a positive and significant influence on marketing performance.

A higher level of entrepreneurship orientation will stimulate more innovation and result in creating new markets (Gradistya & Farida, 2016). According to the research by Djayadiningrat et al. (2017) entrepreneurship orientation has a positive and significant influence on product innovation. Likewise, according to Priatin et al (2017), entrepreneurship orientation has a positive influence on product innovation. The research result by Gradistya & Farida (2016) also stated that entrepreneurship orientation has a positive and significant influence on innovation. This is because entrepreneurs have the attitude to be proactive in reaching for the available opportunities. Observing consumers and the market will help the firm in making innovations. Based on the empirical review, the hypothesis can be formulated as follows:

H2 : Entrepreneurship orientation has a positive and significant influence on product innovation.

The study conducted by Juliana & Artha Kusuma (2017) stated that product innovation significantly and positively influences marketing performance. The research by Maklon (2014) revealed that product innovation has a positive and significant influence on marketing performance, which means that the higher the product innovation of a firm in the creative industry, the higher the marketing performance level. The research by Putra & Rahanatha (2017) stated that product innovation has a positive and significant influence on the marketing performance of silver craft MSMEs in Celuk Village, Gianyar Regency. Based on the empirical review, the following hypothesis is formulated:

H3 : Product innovation has a positive and significant influence on marketing performance.

Based on the research by Djayadiningrat et al. (2017), the results showed that product innovation is able to significantly mediate entrepreneurship orientation. The research by Ryiadi & Yasa (2016) stated that innovation ability significantly mediates the influence of entrepreneurship orientation on product performance. Likewise, the research by Priatin et al. (2017) stated that product innovation is able to mediate the influence of entrepreneurship orientation on marketing performance. Based on the empirical review, the hypothesis is formulated as follows:

H4 : Product innovation is able to significantly mediate the influence of entrepreneurship orientation on marketing performance

4. Research Method

This study is categorized as an associative study, which is a study with the purpose to examine the relationship between two or more variables (Sugiyono, 2018:51). This study examines the influence of entrepreneurship orientation on product innovation and marketing performance along with the influence of product innovation on the marketing performance of silver craft MSMEs in Celuk

Village, Gianyar Regency. The research objects in this study are the entrepreneurship orientation, product innovation, and marketing performance. The population in this study is the silver craft MSMEs in Celuk, Gianyar.

The data collection method utilized in this study is by using questionnaires, in which a number of questions are directed to the respondents to be filled in accordance to the respondent's perception regarding the research objects. The questionnaires are distributed to the owners or managers of the silver craft MSMEs in Celuk, Gianyar. The measurement of the respondent's answers is by using the Likert scale. The data analysis techniques in this study are the classical assumption test and the path analysis.

5. Results and Discussion

Table1 Characteristics of Respondents

No	Variable	Classification	Total (people)	Percentage
1	Gender	Male	58	82,9
		Female	12	17,1
	Total		70	100
2	Age (years)	18 – 30	4	5,7
		31 – 43	14	20
		44 – 56	39	55,7
		57 – 70	13	18,6
	Total		70	100
3	Position	Owner	61	87,1
		Manager	9	12,9
	Total		70	100

Source: Computed Primary Data, 2018

Table 1 explains that there are more male respondents than female respondents, in which 82,9 percent are male while 17,1 percent are female. In terms of the age, a majority, 55,7 percent of the respondents have an age of 44 – 56 years old, 5,7 percent are in the age group of 18 – 30 years old, 20 percent have an age between 31 – 43 years old, and 18,6 percent have an age of 57 – 70 years old. Based on the position, it can be seen that 61 respondents, or 87,1 percent of the respondents are the owners of the business, while 9 people, or 12,9 percent are the business managers.

The validity test has a purpose to examine whether the questionnaires are the correct research instrument to measure what should be measured (Sugiyono, 2018:193). An instrument is deemed to be valid if the correlation coefficient value r -calculated is greater than 0,30 (Sugiyono, 2018:198).

Table 2.
The Instrument Validity Test Results for the Entrepreneurship Orientation Variable

No	Indicator	$r_{\text{calculated}}$	Description
1	X1	0,652	Valid
2	X2	0,694	Valid
3	X3	0,593	Valid
4	X4	0,540	Valid
5	X5	0,670	Valid
6	X6	0,730	Valid

Source: Computed Primary Data, 2018

Table 3.
The Instrument Validity Test Results for the Product Innovation Variable

No	Indicator	$r_{\text{calculated}}$	Description
1	Y1.1	0,603	Valid
2	Y1.2	0,671	Valid
3	Y1.3	0,729	Valid

Source: Computed Primary Data, 2018

Table 4.
The Instrument Validity Test Results for the Marketing Performance Variable

No	Indicator	$r_{\text{calculated}}$	Description
1	Y2.1	0,712	Valid
2	Y2.2	0,702	Valid
3	Y2.3	0,702	Valid
4	Y2.4	0,747	Valid
5	Y2.5	0,761	Valid

Source: Computed Primary Data, 2018

The reliability test is used to examine the research instruments. The test is used to examine the accuracy of the questionnaire answers in different time periods. A questionnaire is deemed as reliable if the a person's answer towards a question is consistent or stable from time to time, with a Cronbach's Alpha value of $> 0,60$ (Ghozali, 2013:47).

Table 5. The Reliability Test Results for the Research Instruments

Variable	Alpha Cronbach	Description
Entrepreneurship Orientation	0,747	Reliable
Product Innovation	0,750	Reliable

Marketing Performance	0,782	Reliable
-----------------------	-------	----------

Source: Computed Primary Data, 2018

The data description in this study discusses the perception of respondents towards the variables of entrepreneurship orientation, product innovation, and the marketing performance attained through distributing questionnaires. The quantitative assessment is done by using the interval scale and integrating the average score according to the assessment categories. The frequency distribution needs to be determined in order to provide a description of respondent's assessment regarding the research variables (Wirawan, 2014: 33).

Based on the data tabulation results, respondent's answers toward the 6 statements regarding entrepreneurship orientation of the entrepreneur was answered by 70 respondents, and the tabulation of the total answers of all respondents for each category is displayed in Table 6.

Table 6. Description of Respondent's Answers Regarding Their Assessments on the Entrepreneurship Orientation Variable

No.	Statements for Entrepreneurship Orientation (X1)	Respondent's Answers					Ttl. Res.	Ave- rage	Desc.
		1	2	3	4	5			
1	The firm must be willing to take on failure risks, may it be small or even big (X.1)	0	2	1	38	29	70	4,34	Very High
2	The firm always create new products that provide value for new or existing customers.(X.2)	0	2	1	34	33	70	4,40	Very High
3	The firm must always search for ways to face the firm's risk (X.3)	0	0	3	37	30	70	4,39	Very High
4	The firm accepts significant failure risks for the sake of firm growth (X.4)	0	5	20	33	12	70	3,74	High
5	The firm always introduce new products before competitors do (X.5)	0	0	3	21	46	70	4,61	Very High
6	The firm always search for new markets to target (X.6)	0	2	0	29	39	70	4,50	Very High
Average								4,33	Very High

Source: Computed Primary Data, 2018

The data in Table 6 shows that the 6 questions regarding entrepreneurship orientation attained an average value of 4,33 and is categorized in the category of 4,20 – 5,00, or very high. This means that the silver craft MSME owners in Celuk, Gianyar who become the respondents in this study have very high entrepreneurship orientations.

Table 7. Description of Respondents' Answers Regarding Their Assessment on the Product Innovation Variable

No.	Statements for Product Innovation (Y1)	Respondent's Answers					Ttl. Res.	Average	Desc.
		1	2	3	4	5			
1	The firm routinely creates new product design and ideas(Y1.1)	0	0	2	18	50	70	4,69	Very Good
2	The firm uses new materials in producing products(Y1.2)	0	5	13	38	14	70	3,87	Good
3	The firm produces products using the most advance production tools (Y1.3)	0	6	11	41	12	33	3,84	Good
Average								4,13	Agree

Source: Computed Primary Data, 2018

Table 7 shows that the 3 statements regarding product innovation attained an average value of 4,13 and is categorized in the value category of 3,40 – 4,19, or very good. This means that the owners of the silver craft MSMEs in Celuk, Gianyar who become the respondents in this study have been conducting product innovation.

Table 8. Description of Respondents' Answers Regarding Their Assessment on the Marketing Performance Variable

No.	Statement for Marketing Performance (Y2)	Respondent's Answers					Ttl. Res.	Average	Desc.
		1	2	3	4	5			
1	The firm experiences a sales growth tendency from year to year (Y2.1)	0	4	11	46	9	70	3,86	Good
2	The firm is able to increase the market share from year to year (Y2.2)	0	2	10	42	16	70	4,03	Good
3	The firm is able to increase the number of customers from year to year (Y2.3)	0	7	4	34	25	70	4,10	Good

4	The firm is able to expand the market coverage of their products (Y2.4)	0	3	10	41	16	70	4,00	Good
5	The firm has the tendency of an increasing profit from year to year (Y2.5)	0	4	13	37	16	70	3,93	Good
Average								3,98	Good

Source: Computed Primary Data, 2018

Table 8 shows that the 5 statements regarding marketing performance attained an average value of 3,98 and is categorized in the value category of 3,40 – 4,19, or good. This means that the silver craft MSMEs in Celuk, Gianyar, who are the respondents in this study already have a good marketing performance.

From Table 9, it can be seen that the Kolmogorov-Smirnov Asymp. Sig. (2-tailed) value is 0,093. The results indicate that the regression equation model is normally distributed because the Kolmogorov-Smirnov Asymp. Sig. (2-tailed) value is greater than 0,05.

Table 9. Structure 1 Normality Test Results

	<i>Unstandardized Residual</i>
N	70
Kolmogorov-Smirnov Asymp. Sig. (2-tailed)	0,093

Source: Computed Primary Data, 2018

Table 10. Structure 2 Normality Test Results

	<i>Unstandardized Residual</i>
N	70
Kolmogorov-Smirnov Asymp. Sig. (2-tailed)	0,060

Source: Computed Primary Data, 2018

From Table 10, it can be seen that the Kolmogorov-Smirnov Asymp. Sig. (2-tailed) value is 0,060. This result indicates that the regression equation model is normally distributed because the Kolmogorov-Smirnov Asymp. Sig. (2-tailed) value is greater than 0,05.

Table 11. Multicollinearity Test Results

Structure Equation	Variable	Tolerance	VIF
$Y_1 = \beta_2 X + e_1$	Entrepreneurship Orientation (X)	1,000	1,000
$Y_2 = \beta_3 Y_1 + \beta_1 X + e_2$	Entrepreneurship Orientation (X)	0,546	1,832
	Product Innovation (Y ₁)	0,546	1,832

Source: *Computed Primary Data, 2018*

From Table 11, it can be seen that the tolerance value and the VIF of the entrepreneurship orientation and product innovation variable are greater than 10% for the tolerance value, and less than 10 for the VIF. This means that the regression equation is free of any multicollinearity.

Table 12. Structure 1 Heteroscedasticity Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	0,240	0,717		0,335	0,739
Entrepreneurship Orientation	0,028	0,027	0,121	1,007	0,318

Source: *Computed Primary Data, 2018*

In Table 12, it can be seen that the significance value of the entrepreneurship orientation variable is 0,318. This value is greater than 0,05, which means that the independent variable does not have any influence on the absolute residual. Thus, the model formulated does not contain any heteroscedasticity.

Table 13. Structure 2 Heteroscedasticity Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
2 (Constant)	1,092	1,368		0,798	0,427
Entrepreneurship Orientation	0,021	0,067	0,051	0,309	0,759
Product Innovation	0,002	0,129	0,002	0,013	0,989

Source: *Computed Primary Data, 2018*

From Table 13, it can be seen that the significance value of the entrepreneurship orientation variable is 0,759 and for the product innovation variable it is 0,989. These values are greater than 0,05, which means that both independent variables do not have any influence on the absolute residual. Thus, the model created does not contain any heteroscedasticity.

Table 14. Results of Path Analysis 1

Variable	Unstandardized Coefficients		Standardized Coefficients	t - calculate	t test Sig.
	B	Std. Error	Beta		
(Constant)	3,295	1,219		2,704	0,009
Entrepreneurship Orientation (X)	0,350	0,047	0,674	7,523	0,000
R Square	0,454				
F Statistics	56,600				
F test significance	0,000				

Source: Computed Primary Data, 2018

Based on the path analysis results of substructure 1, such as displayed in Table 14, the structural equation can be formulated as follows:

$$Y_1 = \beta_1 X + e_1$$

$$Y_1 = 0,674 X + e_1$$

Table 15. Results of Path Analysis 2

Variable	Unstandardized Coefficients		Standardized Coefficients	t - calculate	t test Sig.
	B	Std. Error	Beta		
(Constant)	0,528	2,261		0,234	0,816
Entrepreneurship Orientation (X)	0,490	0,111	0,502	4,413	0,000
Product Innovation (Y1)	0,537	0,214	0,286	2,510	0,014
R Square	0,527				
F Statistics	37,291				
F test significance	0,000				

Source: Computed Primary Data, 2018

Based on the path analysis results of substructure 2, which is displayed in Table 15, the structural equation can be formulated as follows:

$$Y_1 = \beta_2 X + \beta_3 M + e_2$$

$$Y_1 = 0.502 X + 0.286 Y_1 + e_2$$

Based on the substructure model 1 and 2, the final path diagram can be formed. Before designing the final path diagram, the standard error value must be calculated, which is shown as follows:

$$Pe_1 = \sqrt{1 - R_1^2}$$

$$Pe_1 = \sqrt{1 - 0,454} = \sqrt{0,546} = 0,739$$

$$Pe_2 = \sqrt{1 - R_2^2} = \sqrt{1 - 0,527} = 0,688$$

Based on the calculation of the error influence (Pe_1), the result of the error influence (Pe_1) is 0,739 and the error influence (Pe_2) is 0,688. The total determination coefficient is calculated as follows:

$$\begin{aligned} R^2_m &= 1 - (Pe_1)^2 (Pe_2)^2 \\ &= 1 - (0,739)^2 (0,688)^2 \\ &= 1 - (0,546) (0,473) \\ &= 1 - 0,258 = 0,742 \end{aligned}$$

The total determination coefficient is 0,742, which means that 74,2% of the marketing performance variation is influenced by entrepreneurship orientation and product innovation, while the remaining 25,8% is explained by other factors that are not included in this model.

To examine the mediator variable, whether it mediates the relationship between the independent and dependent variable, the following calculations are conducted:

$$\begin{aligned} S_{ab} &= \sqrt{b^2 Sa^2 + a^2 Sb^2 + Sa^2 Sb^2} \\ S_{ab} &= \sqrt{(0,537)^2 (0,047)^2 + (0,35)^2 (0,214)^2 + (0,047)^2 (0,214)^2} \\ S_{ab} &= 0,084 \end{aligned}$$

Annotation:

- S_{ab} = magnitude of the indirect standard error
- S_a = standard error of coefficient a
- S_b = standard error of coefficient b
- a = path coefficient from X_1 to Y_1
- b = path coefficient from Y_1 to Y_2
- ab = multiplication results of the path coefficient from X to Y_1 (a) with the path coefficient from Y_1 to Y_2 (b)

To examine the significance of the indirect influence, the z-value of coefficient ab is calculated with the formula shown below :

$$\begin{aligned} Z &= \frac{ab}{S_{ab}} \\ Z &= \frac{(0,35)(0,537)}{0,084} \\ Z &= 2,216. \end{aligned}$$

The calculation results in Table 15 reveal that the significance level of entrepreneurship orientation is $0,000 < 0,05$ with a beta value of 0,502. Thus, research hypothesis H_1 is accepted. This means that entrepreneurship orientation has a positive and significant influence on the marketing performance of silver craft MSMEs in Celuk, Gianyar. The calculation results in Table 14 found that the significance

level of entrepreneurship orientation is $0,000 < 0,05$ with a beta value of 0,674. Hence, research hypothesis H_2 is accepted. This means that entrepreneurship orientation has a positive and significant influence on the product innovation of silver craft MSMEs in Celuk, Gianyar. The calculation results in Table 15 reveal that the significance level of product innovation is $0,014 < 0,05$ with a beta value of 0,286. Hence, research hypothesis H_3 is accepted. This means that product innovation has a positive and significant influence on the marketing performance of silver craft MSMEs in Celuk, Gianyar. The calculation results can be attained by comparing the Z-calculated value with the Z-table, in which Z-calculated is $2,216 > Z\text{-table } 1,96$. Thus, research hypothesis H_4 is accepted. This means that product innovation is able to significantly mediate the influence of entrepreneurship orientation on marketing performance.

6. Conclusion

Based on the research analysis results and the discussion results in the previous chapters, the conclusions that can be made from this study are as follows. First, entrepreneurship orientation has a positive and significant influence on the marketing performance of silver craft MSMEs in Celuk, Gianyar. This means that with a higher entrepreneurship orientation within the firm, there will be a higher level of marketing performance. Second, entrepreneurship orientation has a positive and significant influence on the product innovation of silver craft MSMEs in Celuk, Gianyar. This means that a higher level of entrepreneurship orientation will stimulate a higher degree of innovation and entails the creation of new markets, thus improving product innovation. Third, product innovation has a positive and significant influence on the marketing performance of silver craft MSMEs in Celuk, Gianyar. This means that the better the product innovation of the firms in the creative industry, the higher the level of marketing performance resulted. Fourth, product innovation is able to significantly mediate the influence of entrepreneurship orientation on marketing performance. This means that the entrepreneurship orientation within the firm has an impact on the firm's ability to innovate products, which can increase the marketing performance of the silver craft MSMEs in Celuk, Gianyar.

Based on the research analysis results, discussion, and conclusions, there are several advices that can be conveyed to the firms, specifically to the owner or managers of the silver craft MSMEs in Celuk,

Gianyar. First, the owners of the silver craft MSMEs in Celuk, Gianyar needs to understand the impact of the risks they face. If the risks can be identified, the firm can manage their risks well to make it become opportunities. Second, silver craft MSMEs in Celuk, Gianyar needs to start using the most advanced production tools, considering the demand of consumers that continuously change. One is by using molds in which the molds are usually used to create alpaka and xuping. This can be the solution to replacing silver materials which has started to become very expensive. The cost and selling price of alpaka and xuping materials are much cheaper, which could increase consumer demand. Third, the owners of silver craft MSMEs in Celuk, Gianyar should design and create strategies that are more entrepreneurship oriented to innovate their product, which will eventually result in a greater marketing performance.

References

- Adelina, Agnes, Lapijan, James Massie, Imelda Ogi. (2016). "Pengaruh Orientasi Pasar Dan Inovasi Produk Terhadap Kinerja Pemasaran Pada PT. BPR Prisma Dana Amurang". *Jurnal EMBA: Jurnal Riset Ekonomi, Manajemen, Bisnis dan Akuntansi*, 4 (1), hal. 1330-1339.
- Ahimbisibwe, Godwin M., Joseph M. Ntayi, Muhammed Ngoma .(2013). "Export Market Orientation, Innovation, And Performance Of Fruit Exporting Firm In Uganda". *European Scientific Journal*, 9 (4), pp. 295-313.
- Altuntas, Gultekin, Fatih Semercioz, Hanife Eregez. (2013). "Linking Strategic And Market Orientations To Organizational Performance: The Role Of Innovation In Private Healthcare Organizations". *Procedia – Social Behavioral Sciences*, 99 (9), pp. 413-419.
- Arief, Mohammad, Armanu Thoyib, Achmad Sudiro, Fatchur Rohman. (2013). "The Developing Framework On The Relationship Between Market Orientation And Entrepreneurial Orientation To The Firm Performance Through Strategic Flexibility: A Literature Perspective". *European Journal Of Business And Management*, 5 (9), pp. 136-150.
- Asashi, Tesa and I Putu Gede Sukaatmadja. (2017). "Peran Inovasi Produk Dalam Memediasi Pengaruh Orientasi Pasar Terhadap Kinerja Pemasaran". *E – Jurnal Manajemen Unud*, 6 (4), hal.1816-1845.
- Atalay, Murat, Nilgun Anafarta, Fulya Sarvan. (2013). "The Relationship Between Innovation and Firm Performance: An Empirical Evidence From Turkish Automotive Supplier Industry". *Procedia – Social and Behavioral Science*, 75, pp. 226-235.
- Cahyo, Roberto Junianto, Dhyah Harjanti. (2013). "Analisa Inovasi Produk Pada Sektor Usaha Formal Dan Informal di Jawa Timur". *AGORA*, 1 (3), hal.1542-1546.
- Cynthia Vanessa Djodjobo, Hendra N. Tawas. (2014). "Pengaruh Orientasi Kewirusahaan, Inovasi Produk, Dan Keunggulan Bersaing Terhadap Kinerja Pemasaran Usaha Nasi Kuning di Kota Manado". *Jurnal EMBA*, 2 (3), hal. 1214-1224
- Dewi Sondari, Syamsul Maarif, Yandra Arkeman. (2013). "Analisis Faktor Yang Mempengaruhi Inovasi Produk Nanoenkapsulasi Ekstrak Pegagan Sebagai Sediaan Untuk Mengatasi Selulit". *Jurnal Teknik Industri*, 3 (1), hal.54-63.

- Dharmana Putra, I Gede, Gede Bayu Rahanatha. (2017). "Peran Inovasi Produk Memediasi Orientasi Pasar Terhadap Kinerja Pemasaran".E – Jurnal Manajemen Unud, 6 (8), hal. 4361-4390.
- Djayadiningrat, Adinda Fauziyyah, I Putu Gde Sukaatmadja, Ni Nyoman Kerti Yasa. (2017). "Peran Inovasi Produk Memediasi Orientasi Kewirausahaan Terhadap Kinerja Pemasaran IMK Sektor Industri Makanan Kota Denpasar".E – Jurnal Manajemen Unud, 6 (9), hal. 4978-5004.
- Ghozali, Imam. (2013). Aplikasi Analisis Multivariate dengan Program SPSS.Edisi Ketujuh.Semarang: Badan Penerbit Universitas Diponegoro
- Gozali, Imam, Asta Nugraha. (2015). "Analisis Kinerja Pemasaran Untuk Mencapai Keunggulan Bersaing (Studi Pada Centra Industri Pakaian Batik Di Pekalongan)".Prosiding Seminar Nasional & Call For Papers, hal.108-122.
- Gradistya, Giska Ova, Naili Farida. (2016). "Pengaruh Orientasi Pasar Dan Orientasi Kewirausahaan Terhadap Kinerja Pemasaran Melalui Inovasi Sebagai Variabel Intervening ". Jurnal Ilmu Administrasi Bisnis, 5 (3), hal. 127- 135.
- Helia, Renita, Naili Farida, Bulan Prabawani. (2015). "Pengaruh Orientasi Pasar dan Orientasi Kewirausahaan Terhadap Keunggulan Bersaing Melalui Inovasi Produk Sebagai Variabel Antara (Studi Kasus Pada IKM Batik di Kampung Batik Laweyan, Solo)".Journal Of Social And Political Of Science, hal. 1 – 11.
- Juliana, Made Mahayu, Artha Kusuma. (2017). "Peran Inovasi Produk Memediasi Orientasi Pasar Terhadap Kinerja Pemasaran Pada Fashion Retail di Kota Denpasar".E – Jurnal Manajemen Unud, 6 (9), hal.5005-5031.
- Kotler, Philip, Gary Armstrong. (2014). Principle Of Marketing, 15th edition.New Jersey: Pearson Prentice Hall.
- Maklon Felipus Killa. (2014). "Effect of Entrepreneurial Innovativeness Orientation, Product Innovation, and Value Co-Creation on Marketing Performance". Journal Of Research In Marketing, 2 (3), pp. 198-204.
- Mamun, Abdullah, Muhammad Mohiuddin, Syed Ali Fazal, Ghazali Bin Ahmad. (2018). "Effect Of Entrepreneurial And Market Orientation On Consumer Engagement And Performance Of Manufacturing SMEs". Management Research Review, 41 (1), pp. 133-147.
- Maruta, I.G.N. Anom, R. Andi Sularso, Nanis Susanti. (2017). "The Effect of Market Orientation, Entrepreneurship Orientation, and Imitation Strategy on Competitive Advantage (Study on SME of Leather Bag and Suitcase in East Java)".International Journal of Business and Management Invention, 6 (7), pp. 24-35.
- Maslucha, Nur'aini, Sanaji. (2013). "Pengaruh Orientasi Pasar Terhadap Kinerja Pemasaran Melalui Inovasi".Jurnal Ilmu Manajemen, 1 (4), hal.1-12.
- Merakati, Indah, Rusdarti, Wahyono. (2017). "Pengaruh Orientasi Pasar, Inovasi, Orientasi Kewirausahaan Melalui Keunggulan Bersaing Terhadap Kinerja Pemasaran".Journal Of Economic Education, 6 (2), hal.114-123.
- Mulyani, Ida Tri, Mudiantono. (2015). "Upaya Meningkatkan Kinerja Pemasaran Melalui Orientasi Pasar Dan Orientasi Kewirausahaan Dengan Inovasi Sebagai Variabel Intervening (Studi Empiris Pada Usaha Mikro Kecil Menengah Kota Semarang)". Diponegoro Journal Of Management, 4 (3), hal. 1-12.
- Murni, Tri, Taher Alhansji, M. Syafi'ie Idrus, Zainul Arifin. (2014). "The Effect Of Entrepreneurial Orientation On The Management Capability And Sustainable Innovation (Study On

- Batik Small And Medium Enterprise in East Java Indonesia". *IOSR Journal Of Business And Management (IOSR-JBM)*, 16 (4), pp. 16-20.
- Musrifah, Murwatiningsih. (2017). "Pengaruh Orientasi Pasar Dan Orientasi Kewirausahaan Terhadap Kinerja Pemasaran Melalui Keunggulan Bersaing". *Management Analysis Journal*, 6 (4), hal.495-505.
- Narastika, A.A. Rai, Ni Nyoman Kerti Yasa. (2017). "Peran Inovasi Produk Dan Keunggulan Bersaing Memediasi Pengaruh Orientasi Pasar Terhadap Kinerja Pemasaran". *Jurnal Ilmu Manajemen*, 7 (1), hal.1-20.
- Pardi, Suharyono, Suyadi Imam, Arifin Zainul. (2014). "The Effect of Market Orientation and Entrepreneurial Orientation toward Learning Orientation, Innovation, Competitive Advantages and Marketing Performance". *European Journal of Business and Management*, 6 (21), hal.69-80.
- Priatin, Yusri, Djasuro Surya, Indra Suhendra. (2017). "Pengaruh Orientasi Pasar dan Orientasi Kewirausahaan Terhadap Kinerja Pemasaran Dengan Inovasi Produk Sebagai Variabel Intervening". *Jurnal Riset Bisnis dan Manajemen Tirtayasa (JRBMT)*, 1 (1), hal.81-96.
- Prifti, Rezart, Genc Alimehmeti. (2017). "Market orientation, Innovation, And Firm Performance— An Analysis Of Albanian Firms". *Journal Of Innovation And Entrepreneurship*, 6 (8), pp. 1-19.
- Ryadi, Nayda Al-khowarizmi, Ni Nyoman Kerti Yasa.(2016). "Kemampuan Inovasi Memediasi Pengaruh Orientasi Kewirausahaan Terhadap Kinerja Produk IMK Sektor Industri Makanan di Kota Denpasar". *E – Jurnal Manajemen Unud*, 5 (3), hal.1915-1941.
- Sugiyono.(2018). *Metode Penelitian Kuantitatif*. Bandung: Alfabeta.
- Syukron, Muhammad Zidni, Ngatno. (2016). "Pengaruh Orientasi Pasar Dan Orientasi Kewirausahaan Terhadap Inovasi Produk Dan Keunggulan Bersaing UMKM Jenang Di Kabupaten Kudus". *Jurnal Administrasi Bisnis*, 5 (1), hal.24-34.
- Wardana, Wisnu. (2016). *Jewelry of Bali*. Denpasar: Biro Promosi dan Pengembangan Pariwisata Budaya.
- Wardi, Yunia, Perengki Susanto, Nor Liza Abdullah. (2017). "Orientasi Kewirausahaan pada Kinerja Usaha Kecil dan Menengah (UKM) Sumatera Barat: Analisis Peran Moderasi dari Intensitas Persaingan, Turbulensi Pasar dan Teknologi". *Jurnal Manajemen Teknologi*, 16 (1), hal.46-61.
- Wibowo, Dimas Hendika, Zainul Arifin, Sunarti. (2015). "Analisis Strategi Pemasaran Untuk Meningkatkan Daya Saing UMKM (Studi Pada Batik Di Jeng Solo)". *Jurnal Administrasi Bisnis (JAB)*, 29 (1), hal.59-66.



The Economic and Statistical Evaluation of Climatic Elements in Tabriz and Isfahan (in Iran)

Mohammad Yazdani

Ph.D. student of Climatology, Tabriz University, Tabriz, Iran

Department of Climatology, Faculty of Planning and Environmental Sciences, Tabriz University,
Tabriz, Iran

yazdani@tabrizu.ac.ir

Abstract

Climatic Elements involve potential values and play main role in this regard that is not truly known and acknowledged by the public. Among climatic factors, elements such as temperature, precipitation and freezing have most affected the formation and the growth of human societies. these elements can influence the agricultural production, thereby affecting the economic activities of humans in various scales. Currently, in developed countries they apply different statistical agro-climate models involving predictions and pricing methods and also the estimation of insurance value of climatic elements in order to manage the possible agricultural crises. In this study, with the aim of evaluating the economic value of climate, different climatic factors such as temperature, precipitation, and freezing have been estimated. Four products of namely, arable wheat, dry farm wheat, arable barley and dry farm barley have been chosen for Tabriz and Isfahan`s agricultural fields. The production amounts have given rise to the estimation of per hectare net income, which in turn is a function of climatic factors. Various statistical techniques including correlation, multiple and stepwise regression models have been applied.

Keywords: Economic Climatology, Statistical Models, Economic Valuation and Agricultural, Climatic Elements



The Economic and Statistical Evaluation of Climatic Elements in Tabriz and Isfahan (in Iran)

Mohammad Yazdani

Ph.D. student of Climatology, Tabriz University, Tabriz, Iran

Department of Climatology, Faculty of Planning and Environmental Sciences, Tabriz University,
Tabriz, Iran

yazdani@tabrizu.ac.ir

Abstract

Climatic Elements involve potential values and play main role in this regard that is not truly known and acknowledged by the public. Among climatic factors, elements such as temperature, precipitation and freezing have most affected the formation and the growth of human societies. these elements can influence the agricultural production, thereby affecting the economic activities of humans in various scales. Currently, in developed countries they apply different statistical agro-climate models involving predictions and pricing methods and also the estimation of insurance value of climatic elements in order to manage the possible agricultural crises. In this study, with the aim of evaluating the economic value of climate, different climatic factors such as temperature, precipitation, and freezing have been estimated. Four products of namely, arable wheat, dry farm wheat, arable barley and dry farm barley have been chosen for Tabriz and Isfahan`s agricultural fields. The production amounts have given rise to the estimation of per hectare net income, which in turn is a function of climatic factors. Various statistical techniques including correlation, multiple and stepwise regression models have been applied.

Keywords: Economic Climatology, Statistical Models, Economic Valuation and Agricultural, Climatic Elements

1. Introduction

Climatic elements have always been effective in human activities and during the course of history have led to the emergence of various geographic theories such as determinism and, as a result, the prosperity of geographical philosophical debates. Among different climatic elements, temperature, precipitation and freezing have had a great influence on the formation and growth of human societies. These elements can influence the amount of crop production and control economic activities of humans at different scales. Thus, the estimation of the economic value of climatic elements in the agricultural economy can become a major objective. As a result, in this research, the problem is the determination and estimation of the economic value of climate elements affecting agriculture in two different latitudinal areas and, consequently, having different characteristics of agricultural products.

Using different methods, researchers have been involved in the economic estimation of climatic elements affecting agriculture. Mendelsohn et al. (1999) have used the Ricardian approach to study the relationship between climate diversity and the value of agricultural land. They apply this method to products in different areas and have tried to provide a clear indication of the use of experience from data from hot areas on cooler areas. The main advantage of this method is that, when evaluating the relationship between agricultural operations and climate characteristics, the compatibility of these two at the farm level is considered (Mendelsohn et al., 1999, p. 281). This method has also been used in Brazil and India by Sanghe (1997), Kumar & Parikh (1998) and Mendelsohn and Dinar (1999) to estimate the effects of climate on crops.

Kumar & Parikh (2001) estimated the practical relationship between net income of the farm and climate variables, taking into account soil diversity, geographic and economic changes using the cross- section (district level) and statistical time series. To understand the sensitivity of data and climate elements to Indian agriculture, they have predicted using linear methods, equations and their mutual performance that there is a practical relationship between net income at farm level and climate variables and Using a model and analysis of data at each level in the area during the period from 1970 to 1980, they evaluated the performance of adapted weather in a long-term period (Kumar & Parikh 2001: 148). In a related but different study, Brown et al. (2002) analyzed the forecasted results of a sample for Return of climatological information and economic values of predictions for the two Havre and Williston regions. (Brown et al. 2002: 840). then They describe a dynamic model of dynamic decision making that can determine the type of extensive plain cultivation in the northern

region or the possibility of sowing them. They predict the existence of seasonal precipitation in most cases with significant economic value and, on the other hand, consider the relationship between prediction quality and its value to rainfall in effective economic appraisals. Katz and Murphy (2001) have presented a model for determining the value of weather forecasting in orchards to describe the relationships between decisions and events in different situations, in which the valuation of data shows that the main goal of gardeners, Reduce the costs incurred during a frosty season. (Katz & Murphy 2001: 528). This model is a macro decision making process, along with a dynamic programming method that is used to determine the best gardener's performance during a season, and to identify the expected costs of these. They have used this model in Yakima valley in central Washington to determine the value of weather information and predict the analysis of the decision making process. The analysis of the decision making process creates a very suitable and special template, whereby the value of climate data is studied. A study that studies the relationship between the accuracy and value of these minimum temperature (frost) predictions shows that this relationship is non-linear.

2. Geographical Situation and Topography of Tabriz

Tabriz is the center of East Azarbaijan province with an altitude of 1361 meters above sea level and with an area of 356.2 square kilometers between 38 degrees 1 minute to 9 minutes longitude and 46 degrees and 11 minutes to 23 minutes of the eastern length. The topography consists of three parts: the northern heights, southern heights (Sahand Shafts) and the smooth section of Tabriz plain. This area is in fact part of the Tabriz Alluvial Deposit, spreading from the West to the Urmia Sea. The most important river in this area is Aji Chay.

3. Geographical Situation and Topography of Isfahan

The city of Isfahan is the largest living complex in the central plateau of Iran. It is located in a vast plain between the eastern slopes of Zagros and the central mountain range, located at 32 degrees and 38 minutes in the northern latitude and 51 degrees and 39 minutes in the eastern plain. The height of this city is 1590 meters above sea level and its minimum air gap is 300 kilometers to the free surface of the Persian Gulf. The permanent flow of water from the central region of Iran, Zayandehrood, passes through the city.

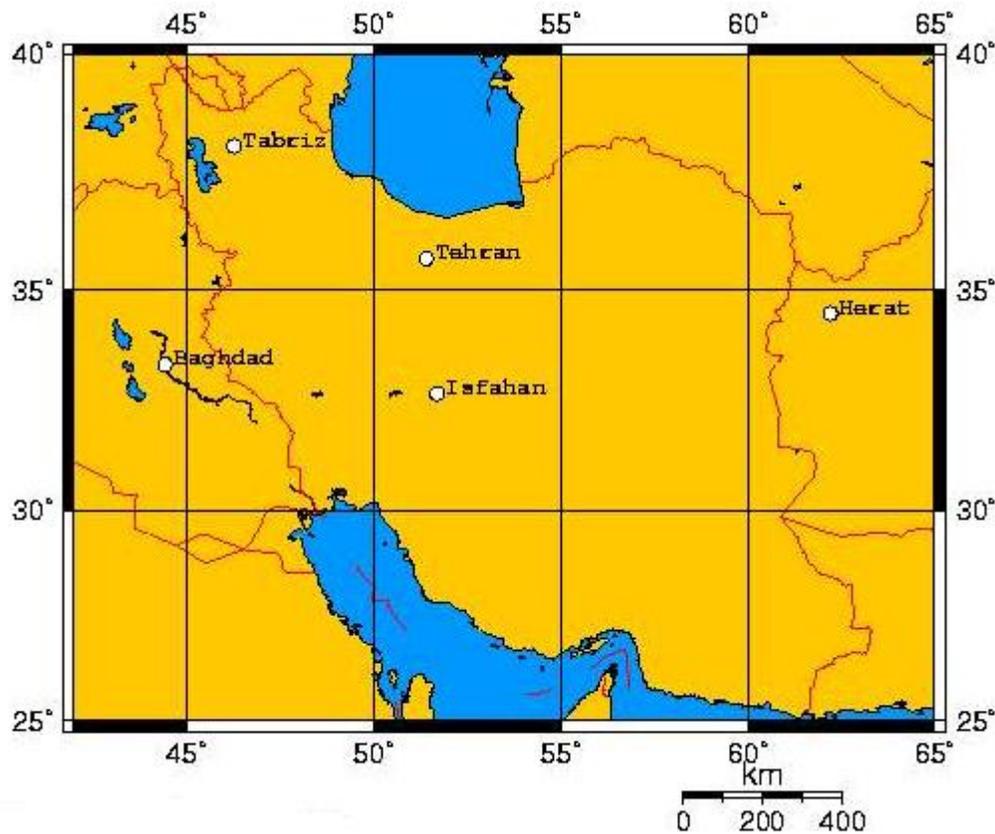


Figure 1. Geographical situation of Tabriz and Isfahan cities

4. Methods and materials

At first, two different climate zones were considered for study: Isfahan as a city or region located in the inner mountainous region with dry and warm climate and Tabriz located in the mountainous region in the semi-arid climate and cool. According to the study of elements and climatic factors of temperature, precipitation and freezing and their economic evaluation in this article, a detailed comparison of the elements and factors mentioned in the studied areas are discussed. The structure of the classification and entry of data into the statistical package of the "Minitab" has been as follows: Firstly, the mean of all data (including independent variables and dependent variables in ordered years) has been calculated from 1985 to 2015 and the calculated number is considered as the mean annual of the same variable. For example, in relation to Tabriz's 30-year data, the average annual temperature in 1985 was calculated as 12.62 degrees centigrade. This trend has been calculated for all data from Isfahan and Tabriz.

4.1. Precipitation

For the formation of precipitation, the presence of wet air and climb factor are required. In the studied areas, the lakes and rivers are not enough to provide the necessary moisture for precipitation in their adjacent areas. These resources are more local and affect the relative humidity of the air. Thus, the Tabriz area is somewhat influenced by the humidity of the Urmia Sea and the Caspian Sea. Of course, the role of Lake Urmia is dimmed due to its drying. and the Isfahan area is less relative humidity than Tabriz due to its lack of close proximity to an important lake. In any case, the moisture content required for precipitation in the studied regions is based on the water resources of the Mediterranean Sea under the western winds of the cold season, which provides instability for the ascension of the air.

Table 1. Temperature and precipitation properties of Tabriz and Isfahan cities during the study period (1985-2015)

City Name	Height (m)	Mean January temperature (°C)	Mean July temperature (°C)	Maximum temperature of year(°C)	Minimum temperature of year(°C)	The mean annual frozen days	mean annual temperature (°C)	Annual precipitation (mm)
Tabriz	1361	-1.66	26.05	28.7	-8.4	92.66	12.48	245.24
Isfahan	1590	3.54	30	38.3	-1	68.71	16.68	111.5

4.2. Temperature

The specifications of the temperature of Tabriz and Isfahan cities are given in Table 1. According to this table, the difference in temperature between these two regions is less than 3 ° C, while in winter this difference exceeds 5.5 ° C.

Table 2. Monthly mean of climatic elements in Tabriz and Isfahan cities during the study period (1985-2015)

Tabriz			City Name	Isfahan		
Temperature (°c)	Precipitation (mm)	Frozen (day)	Climatic element	Temperature (°C)	Precipitation (mm)	Frozen (day)
			Month			
-1.66	17.38	28.06	Jan	3.54	15.5	25.46
-0.6	15.12	23.39	Feb	6.16	14.34	16.73
5.12	33.44	13.19	Mar	10	29.3	4.86
11.87	40.12	10.26	Apr	16.68	9.9	0
17.07	35.62	0	May	21.96	6.6	0
22.74	11.37	0	Jun	25.16	2.38	0
26.05	6.44	0	Jul	30	1.22	0

25.74	4.20	0	Aug	27.92	0.34	0
21.03	4.96	0	Sep	23.82	0	0
13.98	24.33	0	Oct	16.1	4.7	0
6.69	24.1	7.53	Nov	17.82	12.12	3.46
1.3	28.46	19.46	Dec	5.53	15.1	18.2
12.48	245.24	92.66	annual	16.68	111.5	68.71

4.3. Frozen

A frozen day is said to be every 24 hours during which the minimum air temperature reaches zero or less than zero degrees. Considering the mountainousness of Tabriz and the possibility of very cold air transfer to low-altitude plains and with the possibility of a very cold air mass in the Azerbaijan area, it seems that most of the cold-weather days of the region are related to the arrival of cold air masses. Table 2 indicates that the mean frozen point in Tabriz during the statistical period reaches 66.69 days per year. The maximum frozen point in this city is January with a mean of 28.06 days and 30.28% of the total annual frost, while April with the mean of 1.26 and 1.35%, the lowest frost was allocated. Radiant freezes, which are usually formed in smooth and calm nights, may seem to prolong the period of spring frost in Tabriz. In general, it should be acknowledged that the occurrence of frost in Tabriz begins in November and ends in April, which also causes a shortened plant growth period. In Isfahan, the mean annual frozen during the statistical period reaches 68.7 days, which is the month of January with a mean of 25.46% and 37.55% of the annual frost, the coldest month and month of November with 3.46 days and 5.33% of the lowest frozen point (Table 2). Desert location of Isfahan, the influx of Siberian cold tuber leaves from the northeast of the country to this area and smooth and cloudless nights are one of the main factors of Isfahan frosts. In any case, during the studied period, in April, in Isfahan, unlike Tabriz, no frozen is observed. Here it should be admitted that the duration of plant growth in Isfahan is more than Tabriz.

Findings

The hypothesis in relation to the calculated models is that the yield per hectare or the annual agricultural production can have a close relationship with the amount of investment or the cost spent on the same product. The hypothesis is presented in the form of a research:

$$H_0 : B_i = 0$$

$$H_1 : B_i \neq 0$$

$$i = 1, 2, 3, \dots, n$$

In the present research, the issue of "lack of difference" or "lack of communication" is the null hypothesis or falsehood. Therefore, the void hypothesis or null is "There is no difference in the yield of crop production in Isfahan and Tabriz". If the statistical tests show that the null hypothesis has not been accepted and rejected, the research hypothesis or successor will be accepted. This means that there is a difference in the yield of crops in Isfahan and Tabriz, depending on the variables involved. Regarding this issue, determination of independent variables and dependent variable of this research have been made based on the linear model $Y = a + bx$ in the form of a multiple linear model. The dependent variable in this research is the yield or the amount of crop production. In order to broaden the attitude and conclusions of the analysis, four products of namely, arable wheat, dry farm wheat, arable barley and dry farm barley have been considered and evaluated. for carrying out the relevant tests. Before carrying out the tests to prove or reject the null hypothesis (0), the variables were defined as follows:

Temp temperature indicator (annual mean temperature to centigrade)

Precip rainfall (annual mean Precipitation per millimeter)

Frozen frost (number of freezing days per year)

Wheat1 **Arable** wheat (annual amount of **arable** wheat production per tonne)

CostW1 The cost of producing **arable** wheat (including all costs incurred in using inputs and total production costs in Rials)

Wheat2 **Dry farm wheat** (with the same conditions)

CostW2 The cost of producing **Dry farm wheat** (with the same conditions)

Barley1 **Arable barley** (with the same conditions)

CostB1 **Arable barley** Cost (with the same conditions)

Barley2 **Dry farm barley** (with the same conditions)

CostB2 The cost of producing **dry farm barley** (with the same conditions)

The first step after determining and defining the data was to identify the dependent and independent variables. Accordingly, the dependent variable for performing the statistical tests, is the amount or yield of each of the four crops. so:

production rate or yield $x = f(\text{The effect of independent variables alone or collectively})$

In the above relation, for example:

Wheat $= f(\text{Temp})$ or Wheat $1 = f(\text{Temp} + \text{Precip} + \text{Frozen} + \dots)$

In these models, climate elements have had the most impact Therefore, the existence or absence of any kind of climatic factors in the amount of crop production is one of the basic assumptions of this research. In this study, it has been attempted to interfere in the models of the effects of other factors in the form of Rials cost, so that the parameters of " Autocorrelation " can not be created. The above model has been applied to all crops studied. In the first step, the proof of or rejection of the existence or difference between each variable is considered and is calculated in the form of linear regression model of a variable. In later stages, the amount of differences or correlations, or the effect of the sum of independent variables on the dependent variable in the form of a linear multiple model, has been calculated using inferential statistics of stepwise regression.

Tables 3,4,5 shows the descriptive statistics of the studied elements of Tabriz and Isfahan. Based on Table 3, the mean temperature of Isfahan during the studied period is more than 1.4 degree centigrade relative to Tabriz. In this period, the minimum temperature of Tabriz is 11.15 and its maximum is 14.14 degrees Celsius, while the same indicators for Isfahan are 15.38 and 17.96, respectively. During the study period, the range of temperature changes in Tabriz shows 2.99 centigrade, which is the same range for Isfahan 2.58. The temperature of Tabriz with a skew of 0.16 is comparable to Isfahan with a relatively normal distribution of -2.5.

Table 3. Descriptive statistics of temperature variables in Tabriz and Isfahan during the study period

City \ Index	Mean	Min	Max	Range	skew
Tabriz	12.48	11.15	14.14	2.99	0.16
Isfahan	16.68	15.38	17.96	2.58	-2.5

Table 4. Descriptive statistics of Precipitation variables in Tabriz and Isfahan during the study period

City \ Index	Mean	Min	Max	Range	skew
Tabriz	245.24	148.6	384.1	235.5	1.02
Isfahan	111.5	33.9	172.6	138.7	-4.6

Table 5. Descriptive statistics of frozen variables in Tabriz and Isfahan during the study period

City \ Index	Mean	Min	Max	Range	skew
Tabriz	92.66	68	114	46	-7.2
Isfahan	68.71	46	88	42	0.64

5. Correlation Analysis of Tabriz Data

The main purpose of correlation analysis is to investigate the possibility of any correlation or relationship between variables and this analysis can determine some degree of mutual interactions between data (both independent and dependent variables). The most common method of correlation analysis is Pearson correlation, which is used in this research. The numbers in Table 6 (in the higher row) shown at the intersection of the data are related to the numerical value of the correlation (positive or negative), and the lower row numbers of the place of the p values or the probability of occurrence with The confidence range is 95%. Moreover, the existence of such correlations can lead to misleading results due to the similarity of some functions and phenomena. Therefore, the existence of correlation between Precipitation and frozen (0.503) Which has an acceptable value of p (0.56) is not much attention and is not considered in relation to the objectives of this research. However, the correlation between the production or yield of arable wheat and the total cost associated with it are related to the objectives of this research. Tables 6 and 7 show correlations and p values that are acceptable and significant for the purpose of this study:

Table 6. Significance correlations

	The cost of arable wheat	The cost of dry farm wheat	The cost of arable barley	The cost of dry farm barley	dry farm barley yield	Total cost of arable wheat production	Total cost of arable barley production
frozen	0.525	0.469	0.479	0.479			
Precipitation					0.770		
arable wheat yield						0.551	
arable barley yield							0.542

Regarding the correlations between variables, it is evident that:

- 1- By increasing the number or intensity of freezing days, the total costs of the crop production process are increased. The correlation is defined as an mean of about 50%, which indicates an acceptable correlation.
- 2- There is a relatively high correlation between Precipitation and dry farm barley production (77%), which is not true for other variables influenced by Precipitation (other crops).
- 3- The amount of arable wheat production is more than 55% correlated with the total cost of producing arable wheat.
- 4- The amount of arable barley production is more than 54% correlated with its total production costs.

6. Correlation Analysis of Isfahan Data

According to Table 7, which is based on Pearson correlation analysis, there are significace correlations between four variables dependent on the yield of arable wheat, dry farm wheat, arable barley and dry farm barley, and independent variables. The correlation coefficients tables 6 and 7 show correlations and significace p values in relation to the objectives of this study.

Table 7. Significance correlations

	The cost of arable wheat	The cost of dry farm wheat	The cost of arable barley	The cost of dry farm barley	dry farm barley yield	arable barley yield
arable wheat yield	-0.708	-0.644	0.566	-0.703		
Dry wheat yield					0.796	
Precipitation						0.559

According to the table of correlations between variables, it is shown that:

- 1- There is a significace correlation with the strong correlation between the production of arable wheat and direct arable barley production (0.766).
- 2- There was a significace correlation between Precipitation and production of arable barley (0.559).
3. There is no significace correlation between frozen and other dependent variables.
4. There is an inverse correlation with strong intensity between the yield of arable wheat and its total production costs (0.708).

7. Simple Regression Analysis of Tabriz Data

In this research, simple regression, multiple, and stepwise regression models have been used. In the simple regression model the following results are obtained:

Regression analysis shows the effect of independent variables on the dependent variable and the extent of the changes resulting from it. In the first example, the effect of temperature changes on the production of arable wheat is calculated from the following equation:

$$Y = \beta_0 + \beta_1 X + e$$

In the above relation Y is the desired response or dependent variable, X is an independent or predictive variable, regression coefficients, and e is the error coefficient in conditions that have normal dispersion and has a mean of zero and its standard deviation is equivalent to sigma. The regression estimation for B₀ is calculated via b₀ and B₁ through b₁ and the sigma is determined by S. As a result, the fitted equation will be as follows:

$$\hat{Y} = b_0 + b_1 X$$

Where \hat{Y} is the fitted or predicted numerical value.

The calculation results for all variables can be analyzed as follows. The simple linear regression equation calculated for each variable has the following indices:

Estimation of sigma or estimated standard deviation around the regression line (root mean of standard error) S

Coefficient of determination or correlation squared R-Sq

Adjusted coefficient for degrees of freedom R-Sq(adj)

If the variable is added to the equation, the R-Sq (even if the added variable does not have a real value) will increase.

In this study, analysis of variance, which is another part of the output of linear regression model, has been used. This analysis includes the sum of squares (SS) and SS regression with mean standard error (MS), and calculations related to F and P values. The degree of freedom is also shown with DF. In Tabriz, according to linear regression analysis of arable wheat models versus the cost of arable wheat

production ($P = 0.033$), arable barley versus arable barley production cost ($P = 0.037$) with acceptable P value in the confidence range of 95% were significant and the rest of the models were rejected.

8. Simple Regression Analysis of Isfahan Data

Regarding the linear regression analysis of Isfahan data, yield models of barley wheat at the cost of production of arable wheat ($p = 0.003$) and arable barley versus precipitation ($p = 0.030$) with acceptable p values of 95% confidence interval and the rest of the models have been rejected.

9. Multiple Regression Analysis of Tabriz Data

As previously mentioned, in multiple regression analysis, instead of an independent variable, several independent variables are used to evaluate the effect of the sum of variables. The relevant model used in this study was as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_K X_K + e$$

As a result, the following equation is obtained for Tabriz:

$$wheat_1 = 8227 - 325Temp + 4/96 Precip - 31/6Frozen + 0/000498 Costw_1$$

The above linear equation is calculated for all variables in the model and only the relationship and the amount of impact $Costw_1$ are acceptable and significant ($P = 0.077$), and in the remaining cases, P value is more than 95% confidence level. As a result, it can be admitted that coefficients of cost variables and the amount of arable wheat production can not remain at zero by strong evidence and evidence. As a result, the prediction of the regression model is effective, while other variables do not show such a trend and have little effect on prediction.

10. Multiple Regression Analysis of Isfahan data

According to the model used in this study, which is mentioned in Tabriz, the following equation is obtained for Isfahan:

$$wheat_1 = 10931 - 348 Temp + 1/46 Precip - 18/8Frozen + 0/000225 Costw_1$$

The above linear equation is calculated for all variables in the model and only the relationship and the amount of impact $Costw_1$ are acceptable and significance ($P = 0.013$). In other cases, the value of p is estimated to be higher than the confidence level. The corrected coefficient of 57.1% obtained for this equation is confirmed and significance. Therefore, in the case of Isfahan, multiple regression analysis provides an appropriate and significance estimation of the variables being computed and the extent of the effect of the factors and the resulting changes.

11. Stepwise Regression Analysis of Tabriz Data

It has been mentioned earlier that stepwise regression analysis with the aim of identifying useful and appropriate predictors adds or reduces variables in the regression model.

When choosing a stepwise regression analysis method, the predictor variables can be entered in the initial model. These variables are deleted if the value of P is greater than the value of the input α . If the goal of maintaining variables in the model irrespective of their P value, then it can be added α to the model. If the stepwise model is "forward" deletion, Value α adds to a new variable. If the stepwise model is in the state of "backward" deletion, its value α will be reduced to remove a new variable.

1- In stepwise regression analysis model, the production of arable wheat in comparison with temperature, Precipitation, frozen and total cost variables were only significance and validated with respect to P values.

2- In stepwise regression analysis model, arable wheat production was significance only with Precipitation model.

3. In the stepwise regression analysis model for arable barley, only cost and Precipitation variables are significance.

4. In the stepwise regression analysis model for dry farm barley, only Precipitation model is significance.

12. Stepwise regression analysis of Isfahan data

1- In stepwise regression analysis, the amount of arable wheat production is significance with its production cost.

2- In stepwise regression analysis model, dry farm wheat production is not significant with any of the variables.

3. In stepwise regression analysis, the production of arable barley with Precipitation is significant.

4. In stepwise regression analysis model, dry farm barley production is not significant with any of the variables.

13. Conclusions and Suggestions

1- In the event of climate change, better use of climate forecasts will be beneficial for increasing the profit of agricultural units.

2- Considering that many problems in the climate-agricultural basin are related to the economic assessment of climate and agricultural production, it is essential for agricultural areas to understand more about the relationship between climate elements and the rate of returns of each Agriculture unit, Before a comprehensive model of climate change is presented.

3- In the economic analysis of climate impacts, the collection of statistical information in a general and cumulative manner can not be effective Therefore, it is necessary to pay attention to the relationship and correlations between elements and climatic factors and agricultural units.

4-Seasonal weather forecasts, especially at the time of planting and harvest, can increase farmers' interest and profits, while reducing production risks.

5- Estimation and calculation of the practical relationship between net income of agricultural fields and climate variables can be effective in economic-agricultural development of geographical areas taking into account geographic and economic definitions by using statistical methods.

References

- Alton, P.; Djehiche, B.; and Stillbeyer, D. 2000. On Modelling and Pricing Weather Derivatives. *Energy and Power Risk Management*:1:22.
- Brookshire, D.S., Schulze, W.D., Thayer, M.A., and Arge, R.C., 1982. Valuing Public Goods: A Comparison of Survey and Hedonic Approaches. *American Economic Review*. 72(1): 165-177.
- Brown, A., Katz, W., and Murphy, H. 1986. On The Economic Value of Seasonal-Precipitation Forecasts. *Bulletin of American Meteorological Society* 67.No7:833 – 841.
- Environment Canada. 2000. Climate Services Program. *Climate Service Policy*. Apr. 2000: 1-19.

- Harrison, D., and Rubinfeld, D.L., 1978. Hedonic Housing Prices and the Demand for Clean Air. *Journal of Environmental Economics and Management* 5:81-102.
- Katz, W., and Murphy, H. 1982. Assessing the Value of Frost Forecasts to Orchardists: A Dynamic Decision-Making Approach. *Journal of Applied Meteorology* 21: 518 – 531.
- Kumar, K.S.Kavi, Parikh, J. 2001. Indian Agriculture and Climate Sensitivity. *Global Environmental Change* 11:147-154.
- Lixin, Zeng. 2000. Pricing Weather Derivatives. *Journal of Risk Finance*. Spring:72-78.
- Maunder, W.J. 1970. *The Value of the Weather*. London.
- Mendelsohn, R., Dinar, A. 1999. Climate Change, Agriculture and Developing Countries: Does Adaptation Matter? *The World Bank Research Observer*. 14: 277- 293.
- Rosen, S. 1974. Hedonic Prices and Implicit Market Product Differentiation in Pure Competition. *Journal of Political Economy*. No(2): 34- 55
- Sanghi, A. 1997. The Climate Sensitivity of Brazilian Agriculture: Estimates from the Ricardian? The Impacts of Climate Change on Indian and Brazilian agriculture. *World Bank, Washington*.



Determinants of Linking Gaps Tea Production: Case Study of Tea Production Households in Northern Midland and Mountainous Region, Vietnam

Nguyen Nhu Trang

Thai Nguyen University of Economic Business administration

Nhutrang226@tueba.edu.vn

Abstract

Small-scale, outdated, fragmented production and individuals are typical characteristics of agricultural production in Vietnam. These features have caused difficulties for farmers in agricultural production in general and are barrier to the application of technology for farmers in particular. In fact, linkages between agricultural production households are needed, but at present, the linkage status is still low and rather loose. This study aims to identify factors affecting the production linkages decision of GAPs tea farmers in the Northern Midlands and Mountains region. Results from using probit models have shown that low-experienced households, low levels of education, production technical conditions to apply low GAP standards tend to be associated together, at the same time, the characteristics of the household head who are members of socio-political organizations also have a positive influence on the decision to link production of GAPs tea households. ...

Keywords: Determinants, Linkages, GAPs tea production, Northern midland and mountainous region...



Determinants of Linking Gaps Tea Production: Case Study of Tea Production Households in Northern Midland and Mountainous Region, Vietnam

Nguyen Nhu Trang

Thai Nguyen University of Economic Business administration

Nhuttrang226@tueba.edu.vn

Abstract

Small-scale, outdated, fragmented production and individuals are typical characteristics of agricultural production in Vietnam. These features have caused difficulties for farmers in agricultural production in general and are barrier to the application of technology for farmers in particular. In fact, linkages between agricultural production households are needed, but at present, the linkage status is still low and rather loose. This study aims to identify factors affecting the production linkages decision of GAPs tea farmers in the Northern Midlands and Mountains region. Results from using probit models have shown that low-experienced households, low levels of education, production technical conditions to apply low GAP standards tend to be associated together, at the same time, the characteristics of the household head who are members of socio-political organizations also have a positive influence on the decision to link production of GAPs tea households. ...

Keywords: Determinants, Linkages, GAPs tea production, Northern midland and mountainous region...

1. Introduction

For centuries, tea has been known as a good drink for health, commonly used in many countries around the world. Vietnam is known as one of the 10 leading countries in tea production in the world with 34/64 tea growing provinces. Northern Midlands and Mountains region is known as the region with the largest tea area in Vietnam, and also has biggest tea area applying the good agricultural practices throughout the country, in which Thai Nguyen, Yen Bai and Phu Tho provinces are the most popular and famous. GAPs tea area in three provinces accounts for more than 50% of GAPs tea area of Vietnam. Currently, GAPs tea

production is an inevitable direction of the tea industry, to produce quality and safe products for consumers, protect the health of producers. However, tea production is still fragmented, backward and not properly production organized so it has not fully exploited the potential economic value of the tea industry. Many tea producing households can not sell their GAPs tea with proper price thus they have to sell fresh tea at low prices equal to the price of normal tea, while processors have not been interested in fresh tea materials produced under GAPs standards. The situation that tea processors force the purchase price of fresh tea very low is quite popular today. Consumers do not have information about GAPs tea production or less trusting in GAPs tea production due to the link between GAPs tea growers and processors and sellers are loose and non-transparent. This is one of the important reasons leading to the phenomenon that only more than 0.5% of households apply and maintain GAPs tea production in the country after 10 years of implementing GAP standards for tea production in Vietnam

Previous studies on tea have conducted research directions such as assessing the level of association in tea production by Ngo (2015); researching on the issue of tea production and consumption, Tran (2010), Nguyen (2014), Ta (2010); researching on tea production according to GAP standards (Pham, 2014); Research on tea's technical efficiency of Hong and Yabe (2015)... However, research on factors affecting the production linkage in GAP standard tea production has not been studied. Therefore, this research is done to fill this research gap.

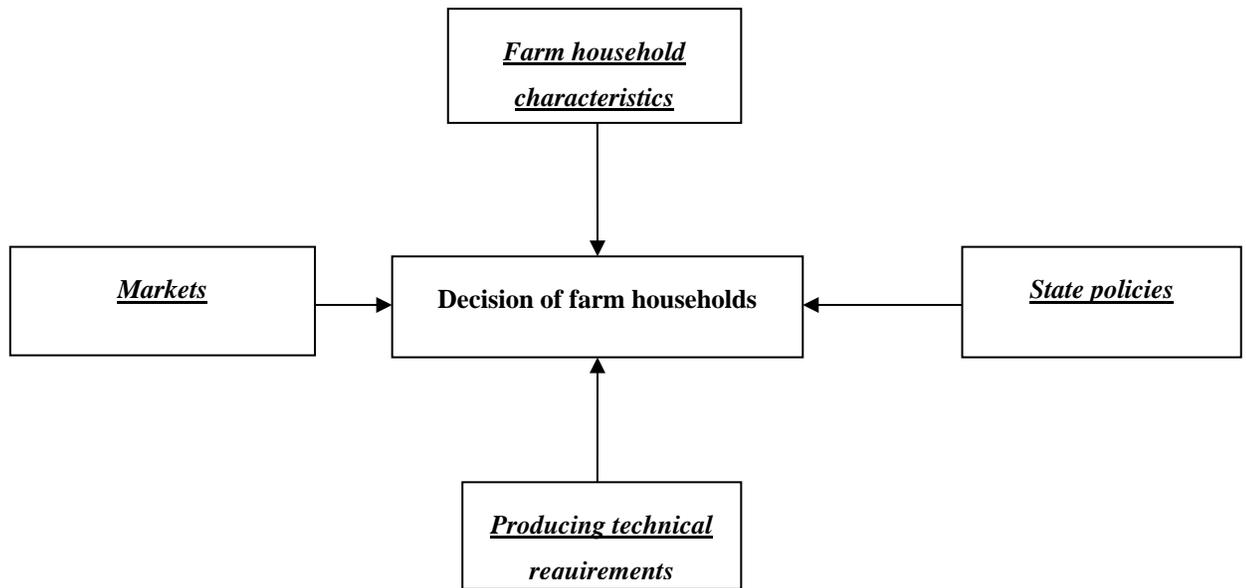
2. Conceptual framework

This paper use Peasant economics theory Frank Ellis (1980). Ellis (1980) explains economic behaviors of farmers by providing reasonable assumptions on the household's purposes and the nature of the markets in which households are a decision maker. The theory studies economic behaviors of farm households from two perspectives: intra-household interactions and external interventions. Interactions within the household mainly refer to effects of gender, age, labour, land use, production technology of the households. This theory suggests that the main factors of production such as land, labor, and technology is a main source of farmer productivity. In this theory, the farmer households are part of the socio-economic system; therefore, their economic behaviors as agricultural producers are dependent and

influenced by the system. Production decisions of farm households are affected by political economy, government policies and regulations, environmental issues, and market factors... (Eliis, 1980) also confirms that the household is an economic factor, and the decision of household on producing goods is made as a rational factor in the market economy. Then, the decision of households are based on: (i) factors of production held by the households; (ii) technology selected; (iii) market and (iv) government policy.

Base on theory of Ellis (1980) and household decision conceptual framework of FAO (1995), paper use the model which are discribed in the following figure.:

Figure 1: Framework of farmer's decision



3. Methodology and data

Methodology

Theoretical framework indicates that linkages choice in producing GAPs tea of the farm households are affected by many factors that can be grouped into four categories: characteristics of household head, Producing technical requirement, market conditions, and government policies. Since the choice or decision of households in linkages producing GAPs tea is a discrete choice, which show whether a household adopts linkages or not, a probit model should be used to achieve the research objectives. The Probit model has its forms as

follows:

$$\begin{aligned}
 p_i &= \text{prob}(Y_i = 1 | X) = \int_{-\infty}^{x_i'\beta} 2\pi^{-\frac{1}{2}} \exp\left(-\frac{t^2}{2}\right) dt \\
 &= \Phi(\alpha + H\beta + F\gamma + M\theta + P\delta + \varepsilon)
 \end{aligned}$$

where p_i is probability of choosing the linkages producing GAPs tea ($Y_i = 1$); Φ represents the cumulative distribution of a standard normal random variable; X is a vector of determinants on the linkages producing GAPs tea production, which includes vectors H , F , M , and P ; H is a vector of household head characteristics; F presents a vector of technical condition; M and P is vectors of market conditions and state policies, respectively; and ε is error terms.

To estimate the impacts of determinants on probability of choosing the linkages producing GAPs tea, the marginal effect should be calculated, and it accounts for a partial change in the probability. The marginal effect associated with continuous explanatory variables X on the probability $P(Y_i = 1 | X)$, holding the other variables constant, can be derived as follows:

$$\frac{\partial P_i}{\partial X_{ik}} = \varphi(x_i' \beta) \beta_k$$

φ represents the probability density function of a standard normal variable. The marginal effect on dummy variables should be estimated differently from continuous variables. Discrete changes in the predicted probabilities constitute an alternative to the marginal effect when evaluating the influence of a dummy variable (Greene, 2011). Such an effect can be derived from the following:

$$\Delta = \Phi(\bar{X}\beta, d = 1) - \Phi(\bar{X}\beta, d = 0),$$

The marginal effects provide insights into how the explanatory variables shift the probability of frequency of farmer's decision (Greene, 2011). The marginal effects are calculated for each variable while holding other variables constant at their sample mean values.

Factors influencing farmer's choice with a new producing alternative method may include: characteristic of farmer household, technical requirement, market and state policies (Ellis, 1980). In previous studies Abdulai et al(2008), Sriwichailamphan (2008), Joseph (2013), Pong Thong (2014), Thang (2018)..., characteristics such as gender, age, education, household size, ethnicity, price, and advertising... are handled as explanatory variables. In

this paper, characteristic of household heads and households, technical requirements, market condition, and state policies affect the decision of households whether applying linkages producing in GAPs tea or not.

Research areas

The Northern Midland and Mountainous (NMM) region is the largest tea-producing areas in Vietnam and its total tea-planting areas is 96526.9 hectares (GSO, 2017). This region includes provinces that are well-known in terms of the quality of tea products and the tea-exporter such as Thai Nguyen, PhuTho, Yen Bai, Tuyen Quang, Ha Giang, Son La...

Thai Nguyen, Yen Bai and Phu Tho provinces are located in the center of the region with tea-growing areas of 21361 ha, 11000ha and 16000ha, respectively. According to the development master plan on tea production by 2020, total areas of GAPs tea of the region reach to 28971 ha, of which the GAPs tea areas of the three selected provinces are 17300 hectares, in which Thai Nguyen is 2000 hectares, PhuTho is 6500, Yen Bai is 8800 hectares, and they account for 59.71% of the total areas producing GAPs tea in Vietnam.

Data

A survey is conducted to collect data from GAPs tea-producing households, including both linkages producing GAPs tea and single manner in the three selected provinces. 167 GAPs tea households are selected and directly interviewed by structured questionnaires. The collected data are presented in table below:

Table 1. Description of the surveyed sample

	Mean	Std. Dev.	Min	Max
Thai Nguyen province (%)	40.0	0.5006	0	1
Yen Bai province (%)	23.63	0.3966	0	1
Phu Tho province (%)	36.36	0.4555	0	1

Male household head	75.45	0.4316	0	1
Age of household head (year)	49.89	8.4001	26	68
Kinh groups (%)	77.84	0.4165	0	1
High school education and above (%)	28.14	0.4510	0	1
Member of social political organizations (%)	64.07	0.4812	0	1
Household Laborers (labor)	3.77	1.1215	1	6
Distance to district center (km)	11.99	6.3838	1.3	30
Linkages producing GAPs tea (%)	65.86	0.4755	0	1

The surveyed sample consists of 167 GAPs tea-producing households located in the three selected provinces, including Thai Nguyen (40.0%), PhuTho (36.36%) and Yen Bai (23.63%). Of which, 75.44% of household heads are male, and 77.84% of surveyed household head are Kinh ethnic group. 28.14% of the surveyed household heads obtain high school education and above, and 64.07% of them are members of social-political organizations at communal and village levels. In the sample, 65.86% of tea-producing households are linkages producing the GAPs tea.

4. Results

The data used in the probit model are tested for multicollinearity. The correlation matrix shows that there is no evidence of strong correlation between these independent variables, thus those independent variables are exogenous. Using the probit model and its marginal effects specified in the section 3, the paper estimates the probability that households select linkages in producing GAPs tea. Empirical results are presented in Table 2.

Table 2. Determinants of GAP standards in production of tea-producing farmers

	$\Phi (Y=1 X)$	Marginal effect (dy/dx)
Gender	0.2399 (0.3465)	0.0617 (0.0937)
Age	-0.0175 (0.0244)	-0.0042 (0.006)
Ethnicity	0.0322 (0.3842)	0.0078 (0.0949)
Education	-0.7104* (0.3651)	-0.1976* (0.1144)
Member of social political organizations	0.6649* (0.3457)	0.1757* (0.0957)
Tea-producing experience	-0.069* (0.0266)	-0.0167* (0.0061)
Household laborers	0.4815** (0.1798)	0.1168 (0.0434)
Distance to centre district	-0.0823** (0.0283)	-0.0199 (0.0067)
Tea-growing farm areas	1.997* (0.7754)	0.0.4848* (0.1860)

Advertisement manner	-0.8734 (0.5905)	-0.2788 (0.221)
Support capitals	1.771*** (0.4660)	0.4751*** (0.1045)
Technical conditions	-0.3694** (0.1709)	-0.0896** (0.0435)
Clear information	0.9305*** (1.242)	0.2258*** (0.0612)
Market/sales	0.1318 (0.481)	0.0319 (0.0445)
State policies	-0.5586** (0.2162)	-0.1355 (0.0561)
Constant	0.3967 (1.242)	
Observations	167	167

*Note: t statistics are in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$*

The estimated results from probit model have provided prove about the impact of group factors such as characteristic of household head and household, technical condition, state (state polices, clear information) on the decision of linking GAPs tea production of farmer household in Northern Midland and Mountainous region.

Group factor characteristics of household head and household like education level, the year experiences of household head and the distance from household to the centre of commune

have negative affection on the decision linking GAPs tea production of household. At significant level 90%, when the average of education of household head increases one level the probability of selection linkages producing GAPs tea will decrease 19.76%, same as this characteristic of household head, the year of experience of household raise 1 year, the likelihood of adopt linkages GAPs tea production will sink 1.67%. These can be explained that the more education level and experience household head have, the higher of independence ability in producing GAPs tea production, the less the probability of linking GAPs tea production. This finding out indicates that when household head have low education level and experience, they want corporate together to reduce the difficult in producing tea in general and particular with GAPs tea which have a lot of tough technical requirement. At significant 95%, the average distance increase 1km, the probability of linking decrease 1.99%, the farther distance the less linkages by the characteristic of producing tea in Northern midland and mountainous region that tea is usually grown on tea hills, population distribution is often near production. The nearer centre of commune, the more crowded population, the higher probability linkages producing.

Contrary to the negative impact of the above factors, the characteristics of the labor of households, land areas, and household heads who are members of socio-political organizations have a positive influence on the probability of linking GAPs tea production of households. Increasing households labor or tea land area is the driving force for the association decision of household, when the average tea land area increases to 1 ha, the probability of production linkages of households increased by 48.48% or the number of labor increased by 1 person, the ability to link up by 11.68%. As a member of social organizations, driving the probability of linkage of tea household increase by 17.57%, this may be because when participating in social organizations, the communication network of household heads is expanded. Therefore, the ability to link tea production with other households also increased.

Technical conditions of GAPs tea production is a strict production process with many difficult requirements and regulations that not only affect the decision to produce GAPs tea but also affect the decision to associate GAPs tea production of farmer households. Not all

farmers in the Northern Midlands and Mountains region can follow GAPs tea production, so with the lower the production conditions, the more likely the households tend to link together, when production conditions are reduced by 1%, the probability of association of households tends to increase by 8.96% at statistical significant level of 95%.

To encourage farmers to grow GAPs tea, the government often takes support policies. The results show that households receiving material support (fertilizer, pesticide, plant variety ...) positively affect to the linking decision of GAPs tea households (0.4751 ***). Transparent information about planning, supporting good agricultural practices for tea production is also a driving force for tea production households. The more clear and easily accessible information is, the higher the probability of linkage between tea growing households (0.2258 ***). While the policy of supporting sales and branding seems to be ineffective, this make the higher the linkage between production households (-0.0896 **).

Interestingly, the GAPs tea consumption factor had no effect on the decision to associate GAPs tea production as a result of this study. While the remaining group factors like the characteristics of household heads and tea producing households, the conditions for producing GAPs tea and the state policies have a statistically significant effect on the decision to link tea production of households. The results of this study have suggested some solutions to promote tea production links of households.

6. Recommendation

Tea production GAPs is an indispensable way to enhance the quality of food hygiene and safety and sustainable production in the Northern Midlands and Mountains region, Vietnam. Tea production is still outdated and facing many difficulties, individually producing and the level of association is still loose. Therefore, it is necessary to strengthen the linkage of production among tea households to increase land accumulation, as well as to link production and consumption more effectively, and to help government more easily control instead of the single production form.

Building and developing functional production linkage groups. Linking the groups of households without tea processing machinery or the skills of tea production are not good, or

difficult to consume... into a group of raw tea producers, only supplying fresh tea to households which have smaller area but have machinery, good skill and have consumption market to ensure output for specialized tea growing group. In order for these two types of functional groups to be interlinked, a clear binding contract, commitment to product quality, commitment to solving arising problems is required.

Reference

- Abdulai, A and Huffman, W (2000), 'Structural Adjustment and Economic Efficiency of Rice Farmers in Northern Ghana', *Economic Development and Cultural Change*, 48, 503-520
- Dao Quyet Thang (2018), *Studying the determinants of the development investment in the agricultural production under GAP-standard at the farmer households: a case study in Ninh Thuan province*, Dissertation, National economic university, Ha Noi
- Ellis, F., (1993), *Peasant Economics: farm households and Agrarian Development*, 92nd edition, Cambridge, UK: Cambridge University Press
- FAO (1995), 'Integrating wood fuel production into agro forestry extension programs in southeast Asia', *Regional wood energy development programs in Asia & Asia-Pacific agro forestry network*, 21
- Greene W. H. (2011), *Econometric Analysis*, Prentice Hall, 7th Edition
- General statistic office of Vietnam (2016), *statistical yearbook*, statistic publisher of Vietnam
- Joshep (2013), *An analysis of use of Good Agricultural Practices in Rice production: A case study of Bagamoyo and Dakawa Areas Tanzania*, A dissertation submitted in partial fulfillment for the degree of Master of science in research methods in Jomo Kenyatta university of Agriculture and technology.
- Ngo Huong Giang (2015), *Building supply chain for Thai Nguyen tea*, Dissertation, Trade Research Institute
- Nguyen Thi Phuong Hao (2014), *Influence of the change input price on economic efficiency of tea production of farmers in Thai Nguyen province*, Doctoral thesis, Thai Nguyen University, Thai Nguyen
- Nguyen Bich Hong & Yabe (2016), "Technical efficiency analysis of Tea production in the northern mountainous region of Vietnam", *Global journal of science frontier research: Agriculture and Veterinary*, volume 15
- Pongthong P., Yamao, M., Hosono, K. (2014), Factor affecting the implementation of Good Agricultural Practices (GAPs) among coffee farmers in Chumphon province Thailand, *American journal of rural development*, 2, 34 – 39

- Pham Dinh Hai (2014), *Completing the organization and policy to promote good agricultural practices (GAP) in producing fresh tea in Bao Loc city*, master's thesis in economics, Forestry University, Lamdong
- Sriwichailamphan, T., Sriboonchitta, S., Wiboonpongse, A., and Chaovanapoonphol, Y., (2008), *Factors affecting Good Agricultural Practice in Pineapple farming in Thailand*, ISHS Acta Horticultural 794: II International symposium on Improving the performance of supply chains in the transitional economies, 794, 325-334, entered on January 02 in 2017, from http://www.actahort.org/books/794/794_40.htm
- Ta thi thanh Huyen (2011), *Studying the forms of territorial organization of tea production in the Eastern North Region in the direction of sustainable development*, Dissertation, National economic university, Hanoi
- Tran Quang Huy (2010), *Solutions to strengthen cooperation in tea production and consumption in key tea regions of Thai Nguyen province*, Dissertation, Hanoi University of Agriculture



Ethics of Price Strategies in Business

Professor Piotr Masiukiewicz, PhD,

Institute of Value Management, Warsaw School of Economics,

Paweł Dec, PhD,

Institute of Corporate and Investment Finance, Warsaw School of Economics

paweldec@gmail.com

Abstract

Prices decisive it is important area of consumer protection. Law prohibition of use some types of price are make in all development countries (include EU directives and OECD directions). To rank non-ethics prices among the prohibition prices and overmuch high prices. Enterprises and branches have had good praxis's codes (or ethics code) contemporary, unfortunately it hasn't regulation of prices decisive in these codes. In this paper was showed price regulations (include prohibit prices) and case studies of non-ethics and dishonest price praxis in Poland and Europe. Managers hadn't always consciousness for civil and criminal responsibility of faulty prices decisions. It is necessary large education of managers in area of strategies the prices ethics decisive and enforces of ethics codes in enterprises.

Keywords: Ethics, pricing strategy, consumer behavior, prohibited prices



Ethics of Price Strategies in Business

Professor Piotr Masiukiewicz, PhD,

Institute of Value Management, Warsaw School of Economics,

Paweł Dec, PhD,

Institute of Corporate and Investment Finance, Warsaw School of Economics

paweldec@gmail.com

Abstract

Prices decisive it is important area of consumer protection. Law prohibition of use some types of price are make in all development countries (include EU directives and OECD directions). To rank non-ethics prices among the prohibition prices and overmuch high prices. Enterprises and branches have had good praxis's codes (or ethics code) contemporary, unfortunately it hasn't regulation of prices decisive in these codes. In this paper was showed price regulations (include prohibit prices) and case studies of non-ethics and dishonest price praxis in Poland and Europe. Managers hadn't always consciousness for civil and criminal responsibility of faulty prices decisions. It is necessary large education of managers in area of strategies the prices ethics decisive and enforces of ethics codes in enterprises.

Keywords: Ethics, pricing strategy, consumer behavior, prohibited prices

1. Introduction

Consumer protection issues have been at the center of attention of governments and international organizations for decades. It is also reflected in the regulations of the European Union; an important stage in the development of pro-consumer policy was the inclusion of the principle of consumer protection in the Maastricht European Union Treaty. Several directives and recommendations have been issued in the EU, including the Directive on unfair practices in consumer contracts, the Recommendation on electronic payments, the Consumer Credit Directive, the Directive on cross-border provision of financial services and the Misleading

advertising directive. Purchasing prices is an important area of consumer protection. Legal prohibitions on the use of certain types of prices occur in all developed countries; the prohibition of the use of such prices as dumping, cartel or transfer is also found in the European Union directives and OECD guidelines. Some legal regulations are not always precise, hence national court judgments and ECJ judgments play a significant role. In practice, however, managers responsible for pricing policy are not always aware of civil and even criminal liability for wrong decisions in this area, the price-making ethics are low. The most important consequence for business - if clients find out about an unfair pricing strategy - is the loss of customers.

The purpose of this article is to identify and assess ethical criteria in the process of price-making in the economy and to analyze the use of priceless prices as unethical decisions. This is in the new concept of price management, called the enterprise price intelligence (Zinoecker, et al., 2012). The study used research methods such as: literature analysis, legal analysis, desk research and case studies.

2. Basics of ethics in establishing market and official prices

In every society there are notions of just and unjust prices; it can be accepted as an axiom. However, there are different criteria for including prices in these categories (Carrigan, Attalla, 2001, Heath, 2004, Panwar et al, 2016). Undoubtedly, the prices prohibited by law or usury (in financial institutions) are usually assessed as unfair. In the economy of Islam, the use of all usury is forbidden. Unfair high income is generally associated with unfair pricing in business. The problem of justice in many areas of human activity, discussed for years, in terms of prices on the market (including those stipulated by the state), did not receive wider research and publications; even though it is an important economic and ethical problem in management (Seals, 2018).

In the classical economy, according to J. Galbraith (2011), instead of the alleged competition in a large sector of a modern, highly concentrated economy, it was necessary to assume the existence of a monopoly or something similar (oligopoly) and socially optimal price and production could no longer be found in a competitive market. Some authors, however, saw the necessity of vigorously introducing antitrust laws. There is a constant discussion as to whether the fundamental principles of a market economy may favor the exploitation of a part of society and the enrichment at the expense of the poorest. (Stiglitz, 2018) Hence, regulation of prices in the economy was gradually introduced by governments and parliaments; including particularly sensitive prices (rents, electricity and others).

The classic market division of price types includes prices based on costs, demand and competition. The second widely used classification is the determination of free (market) and regulated prices (by the state) (Masiukiewicz, 2010). In practice, there are so-called social prices; that is, with the state budget surcharge (for example, some products for babies). Using other classifications, especially from the point of view of the ethical criterion, the following prices are usually included in unethical prices:

- excessively high prices,
- dumped prices (i.e. below cost),
- legally banned prices (cartel prices, bundled prices, transfer prices, discriminatory prices, prices displayed as incomplete, e.g. given without VAT and others),
- multi-component prices,
- media prices (the offer contains so many conditions that less than 0.001% of potential customers meet them).

Robust price formation as a concept referring to the pricing strategy, was described by B. Lunden (2008). This author believes that the main goal of robbery is not to increase sales, but to weaken another company; even if it means losses in your own company. Such a strategy can be used by large enterprises. Of course, it is important to have a good power stay so that it can survive the competitive struggle; and the method is usually the use of dumped prices.

It is quite common practice to enter the market with a new product or an old product, but to a new market using a promotional price. Such prices are usually much lower than those offered by competitors; Of course, it's about getting customers. After a period of taming customers with a new product, prices are usually raised to the "normal" level. However, the strategy of low prices may in this case be divided into stages to varying degrees. A sudden increase in prices after a short promotional period is usually badly received by customers, unless they are previously warned about it. A change in the pricing strategy usually has an ethical context. Hence, rapid price changes, especially price increases, bear a strong negative ethical context that can sometimes threaten the reputation of a given brand. Therefore, any price increase or even a price reduction of products should be analyzed in detail from the point of view of the ethical context and the company's ethical code (Matusiak, 2018).

There is, of course, a category of prices for new products, which is sometimes very high in the first period of production and sale of goods, and it is not ethically reprehensible. In Poland, the Act of 23.08.07 on Counteracting Dishonest Market Practices in a small scope refers to the

establishment of prices. Market practice is a misleading act if the action in any way causes or can cause the average consumer to take a contractual decision that he would not otherwise have taken. A misleading action may concern: the price, the method of calculating the price or the existence of a specific price advantage. Market practice is considered misleading if it omits relevant information needed by the average consumer to make a contractual decision and thus causes or may cause the average consumer to take a contractual decision that he would not otherwise have taken. The quoted law prohibits the presentation of the product as "free", "free", "free" or similar, if the consumer must pay any amount, except for direct costs related to the response to market practice, receipt or delivery of the product.

The EU Directive on misleading advertising refers, *inter alia*, to such unfair market practices as:

- using the so-called in advertising media prices,
- providing incomplete prices (e.g. interest on the loan, without specifying fees and commissions, cheap airline ticket prices - no additional fees, etc.),
- presenting outdated prices,
- increasing prices to quickly lower them and display high price cuts,
- other manipulations of price information. Nowadays an important problem is the loss of the ability to deliberately shape prices by some companies. The conscious creation of pricing strategies is defined as price intelligence. Price intelligence is based on the assessment of customer price perception, evaluation of competition pricing strategies, assessment of commodity levels, legalization of price setting and is undoubtedly one of the key factors determining the profitability of an enterprise (Zinoecker, et al., 2012). Unfair pricing, profitability at any price can result in a high level of "rejection of prices" by customers and migration of customers to other sellers (service providers).

Possibilities to avoid criminal sanctions increase the likelihood of unethical acts and creating dishonesty potential in pricing. According to the president of one of the American corporations, Jon Huntsman (2005): Earning money is now simpler than ever. Ignoring traditional moral values too. This leads to disturbing questions: why lying, cheating, over-interpreting regulations and emerging from fulfilling the obligations included in the contracts have become rooted in society to such an extent? How did it happen that the goal - to achieve material success, began to sanctify all means? Answers can be found in the level of ethics, acceptance of unethical behavior and preferred values in management.

Every self-respecting company and industry today have codes of good practice or ethical codes; however, was there room for price setting issues? This is important because, according to the economy, the goal of enterprises is to achieve profit and increase shareholder value. Is it irrelevant in this case to comply with ethical principles and, accordingly, all ethically unacceptable methods? The essence of codes is that they are not norms imposed by law or other generally binding regulations but are established by the entrepreneurs themselves or their associations (the so-called self-regulatory system). Consumers perceive such codes as quality marks (meeting certain quality standards of the service), which increases trust in the entrepreneur signatory to such self-regulation.

Unfair market practices, in the light of statutory regulations, under all circumstances are the following misleading market practices:

1. Information provided by the entrepreneur that he has committed to comply with the code of good practice if this is not true;
2. Using a certificate, a quality mark or an equivalent designation without having the right to do so;
3. The statement that the code of good practice has been approved by a public authority or other body if it is not true.

So unfair practices, including PR and advertising, used among companies engaged in competitive wars for market share (including price wars), as well as among financial institutions, caused interest in European Union bodies in this issue (Masiukiewicz, 2015, Akerlof, Shiller 2015) A directive on unfair commercial practices applied by enterprises to consumers in the internal market was issued, and Member States were required to implement the directive under national law (Directive, 2005).

In many codes, there is no reference to pricing strategies, but there are good exceptions. For example, Danone expects its Code of Ethics to be unified across the entire holding, for example in price reconciliation. Leroy Merlin's chain of construction and decorative stores in sales and marketing policy is based on honest information about products and prices.

The problem of social acceptance of prices (mainly regulated prices) was quite strong in the socialist economy; causing mass protests of workers. Nowadays, assimilation or rejection of prices by consumers is the result of both the level of income and, on the other hand, heuristics

and shopping attitudes. A new problem requiring research is shaping price strategies by ethical and socially responsible companies (CSR).

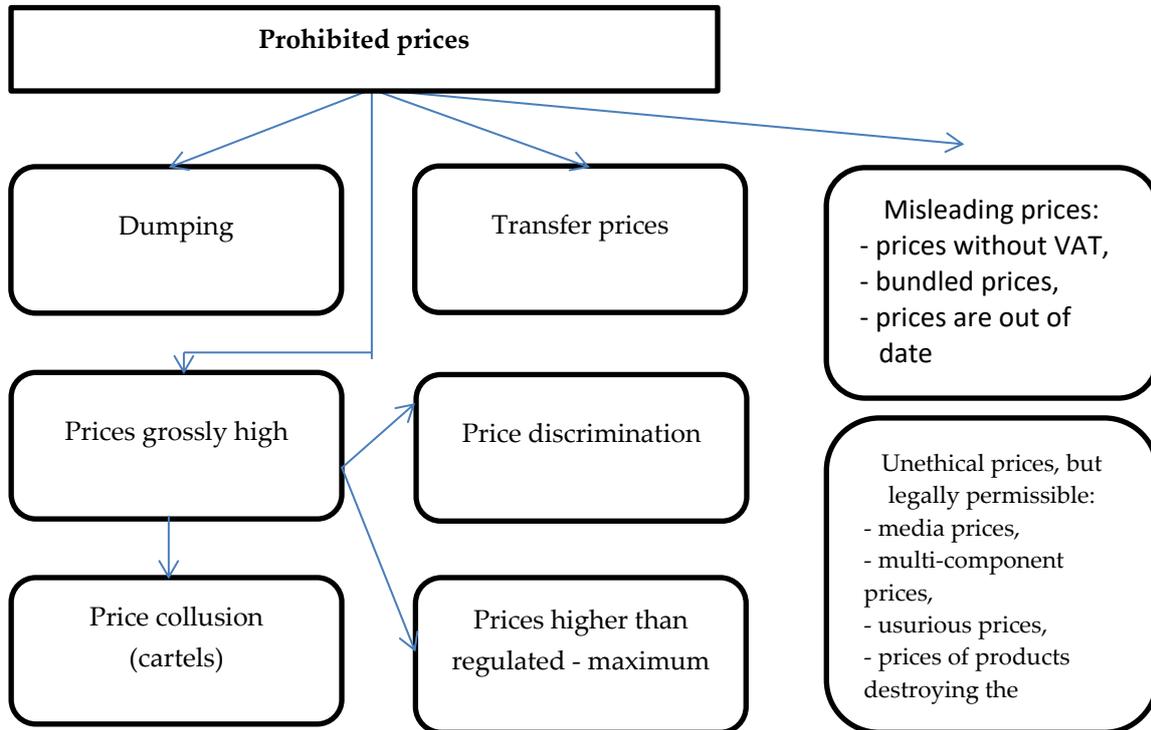
3. Price-making ethics in Islamic economics

The Islamic economy, based on sharia law, enforces a different approach to price-making in business. The sector of enterprises based on Sharia law is constantly developing in Muslim countries. According to Islamic philosophy and religion, running a business should be transparent, honest, ethical and not based on exploitation, supporting the development of the economy. An important feature of the banks' offer is targeting it not only to Muslims but also to other communities. The basic principles of sharia law are *riba*, *gharar*, *maysir* and *guimar* (El-Gamal, 2006). The *guimar* principle means the prohibition of exploitation in all forms; therefore, the prices set by the seller should include fair profit and not excessively high. It is the duty of enterprises and citizens to support the poorest through donations (*zakat*). In some countries, *zakat* has been raised to the status of a state tax. The Sharia principles apply to all enterprises, including financial ones, which were established and operate as Islamic institutions. Islamic enterprises also implement corporate social responsibility programs. Many Islamic economists believe that Islamic economics is more ethical than conventional economics. Certainly, sharia law rules require managers to have a more moral approach to business, including price setting.

4. Regulations for forbidden prices

Legal prohibitions on the use of certain prices are found in all developed countries; the prohibition of using such prices as dumping, cartel or transfer occurs in the European Union directives (Fig. 1). However, always the final assessment of whether the price is forbidden and constitutes a crime belongs to the court. Misleading prices are a false presentation of the essence of the prices of products sold. These are, for example, prices without VAT, transfer prices, price discrimination, prices quoted as incomplete (for example, not giving commission, as part of the multi-component loan price, but only its interest rate) (Masiukiewicz, 2016).

Figure 1. Types of prohibited and unethical prices – authors proposal



Price discrimination means applying different prices to the same product under comparable sales conditions for different consumer groups. In many countries, these practices are prohibited. For example in the USA - setting different prices for purchasers of the same product (discriminatory prices, e.g. higher for customers with a different skin color), counteracts the so-called the Robinson-Patman Act (adopted already in the 1930s). Multi-component prices are not formally banned, however, they often mislead customers (low-cost airline tickets, banking services and others). To protect bank clients, the European Union introduced consumer credit regulations, including the obligation to provide the customer with a real interest rate (APRC). (Directive, 2014). A separate research problem is unethical marketing; based on unreliable price information (Drapińska, 2015). The institutional system of consumer protection should counteract the above bad practices, unfortunately it is not always effective.

5. Prices and ethics - research

Below are presented studies related to the problem of pricing in Poland in the context of ethical attitudes of managers and clients. Over 1/3 of managers surveyed (slightly less in the public

sector) in Poland believed that only economic values are important in management (Table 1), for this group, pricing strategies are probably only an income creation instrument.

Table 1. Ranks of individual groups of values depending on the type of organization (in answer)

No.	The importance of a given group of values	Listed companies	Other enterprises	Public sector	Total
1.	The most important are economic values, in addition to respect for the law	35,8	32,5	24,5	32,6
2.	Economic values are of key importance to us, and respect for the law, ethical standards and good manners are of key importance	57,5	56,8	51,0	56,4
3.	Non-economic values - ethical, cultural, civic, related to development, ecology - are considered to be equally important in Poland; none of the value groups is prioritized	6,0	10,3	20,4	10,2
4.	Other answers	0,7	0,3	4,1	0,8
	Total	100,0	100,0	100,0	100,0

Source: (*Zarządzanie, 2016*)

In Poland, the index of acceptance of unethical financial behavior is quite high, which probably also translates into low business ethics in price management (Table 2).

Table 2. Index of acceptance of unethical financial behavior in Poland

Year	Index in points	Remarks
2016	23,2	Index developed by prof. A. Lewicka-Strzałecka
2017	21,7	
2018	23,2	

Source: (Raport KPF, 2018)

Are customers willing to pay higher prices for ethical companies? The data leave no illusions, as 60% of respondents said they would not pay more for products of a company that is ethical and only 20% of Poles would be willing to pay 5% to 10% more for ethical products (Etyka, 2018). Only 5% of people would pay over 10% more for products offered by an ethically-progressing company. Thus, when more than half of the respondents were concluded, they noticed a

deterioration in quality and service standards in the Polish business, but this knowledge did not put on specific customer choices.

In turn, the results of research conducted by the Institute for Sustainable Development indicate that although 60% of respondents declare their respect for the activities of environmentalists, 70% understand the necessity to look for alternative solutions to the shrinking resources of natural resources, and 80% describe their behavior as pro-ecological, also during shopping price wins with ethics among 80% of respondents. (Etyka, 2018) Moreover, only environmentally friendly production methods were valid for 5%, and 1.6% of respondents were interested in the type of packaging. Not only do you choose ethical and environmentally friendly products - do not know the customers of specific brands offering products of this type, although more and more companies in advertising campaigns pay attention to ethics. Still, companies still want to reach consumers using these assets.

6. Unethical price decisions. Case studies

6.1. Price cartel of precious metals

Price collusions (cartels) are difficult to detect in practice; usually cartel participants are very loyal to each other, and minor deviations from the confidential price of a given item precipitate arguments with the competition authorities. Seven Swiss banks probably formed a cartel and set prices for precious metals: gold, silver, platinum and palladium. The Swiss Competition Commission (national government body) opened an investigation into the unlawful pricing of precious metals by banks on the Swiss market. Proceedings are another effect of controlling banks that have tried to circumvent the law. It was about two Swiss financial institutions UBC and Julius Baer and five foreign banks: HSBC, Deutsche Bank, Barclays, Morgan Stanley and Mitsui Bank. They were to contain illegal agreements on precious metal prices. The Swiss office also suspected that some banks could also determine the amount of currency spreads (Collusion, 2015).

Banks were punished with up to 10 percent penalty. annual revenues. The exact losses caused by the illegal price collusion of banks are not yet known; it can be assumed that they will be millions of Swiss francs.

6.2. Unethical price of a bank loan

Banks also offer dishonest and unethical price information. Despite the high inflated prices, due to the low financial education of the society, there is such an offer of buyers. An example was the offer of PKO BP (the Polish government is its strategic owner) in 2016. The bank offered a consumer loan with an interest rate of 1%. The advertisement of this product was intense (TV, press, leaflets). However, in small print, it was reported that the interest rate is 0.5 years, the commission is 9.99%. The total cost of this loan for the customer expressed in the real value of the APRC amounted to 45.75% p.a., in the situation when deposits were received at that time by most banks at 1-2%. After several months, the offer was withdrawn. This is an example showing that some bank managers still have a serious problem with business ethics, even *sui generis* in state financial institutions (Dec, Masiukiewicz, 2016).

6.3. Drugs from Turing Pharmaceuticals

Information about paramedical services (and proprietary medicines) provided by swindlers, overpriced drug prices, and harmful pharmaceuticals is constantly appearing (Masiukiewicz, 2018). Akerlof and Shiller point out that the FDA (governmental agency of medicines in the USA) is exposed to fraudulent tricks from pharmaceutical companies; leaving them five degrees of freedom in conducting clinical trials and in presenting their results; this system is inefficient (Akerlof, Shiller, 2015). A loud example of the entrepreneur's decline in business was the case of Martin Shkreli, manager and owner of the pharmaceutical company Turing Pharmaceuticals in the USA. In 2015, he decided to raise the price for a daraprim tablet from 13.5 to 750 USD (Strawinski, 2016). "We have to start making money on this drug" explained the 55-fold increase in the price of the drug used in the treatment of people with AIDS, which is exhibited only in the US about 9,000. prescriptions a year (Kościelniak, 2015). Daprim was included by the WHO on the list of basic medicines, which means that it should be easily available in terms of quantity and price. On the argument raised by the media, low production costs (USD 1 per tablet) in response, the manager pointed to other costs. The media gave him some negative nicknames (embodying everything bad in capitalism, a morally fallen sociopath). Against such a drastic increase, the medical community has argued, arguing with the good of patients, as well as other pharmaceutical manufacturers, not wanting the industry to be perceived as soulless and greedy. The media at the same time showed the manager's lavish lifestyle - ridiculing his arguments. Eventually, Shkreli reduced the price of the drug for hospitals, but only up to \$ 375. At the end of

2015. the manager was detained by the FBI on suspicion of incompatible actions with the law in another of his company (Clifford, Moynihan, 2017) but this did not change the pricing policy of the daraprim drug. The free drug market has its own rights, but this example shows how dangerous a monopoly can be. Taking a deontological perspective, it can be concluded that the decision of Turing Pharmaceuticals was lawful, but people who were ill with their dignity were robbed, perhaps health insurance loans were made. The rich manager showed his indifference towards society. Such a high price of the product acquired because of the disease is far from supported by the ethical theory of deontology - the concept of a fair pricing policy.

7. Conclusion

Price-setting ethics is important both for the competitive position of companies and for relations with stakeholders; including based on corporate social responsibility programs. Unethical prices include both legally banned prices as well as excessively high prices and misleading prices. Therefore, the category of socially responsible prices can be introduced to the discussion. This is especially important in sensitive price segments (food, medicines and others). Managers responsible for pricing policy, however, are not always aware of civil and even criminal liability for wrong decisions in this area. Instruments of influence on ethical pricing must be adapted to the specifics of the industry and may include, for example: monitoring of price strategies in large and medium-sized companies, enforcement of the provisions of business ethics codes, media pressure, stigmatizing negative cases of unethical prices, exclusion from contests and prizes of entrepreneurs using unethical prices or introduction of the discussed problem to the training programs and studies for managers. Price strategies in ethical and CSR enterprises are important - they should be monitored in this respect. The customer behavior is still another issue, because even the best company and the code of ethics implemented by it and respected will not affect the behavior of customers seeking simply lower prices. Educating clients, and even earlier younger people, at the school stage must involve shaping ethical attitudes and awareness of their importance. It should be remembered that enterprises operate in a competitive environment and strive to maximize profits and achieved value, and it is not their task to raise clients. This task is on the side of the state and non-governmental organizations. In the era of ubiquitous Internet, the amazing interaction of social media, coordinated actions are necessary so that the ethical attitudes and behaviors of companies do not become a museum exhibit, but the

need for action on a larger scale. Not only through legal regulations, but also creating a long-term model of education and awareness in these areas.

References

- Akerlof, G. A. Shiller, R. J. (2015). *Phishing for Phools. The Economics of Manipulation and Deception*. New Jersey: Princeton University Press.
- Carrigan, M., Attalla, A. (2001). The myth of the ethical consumer—do ethics matter in purchase behaviour?. *Journal of consumer marketing*, 18(7), 560-578.
- Clifford, S., Moynihan, C. (2017). Martin Shkreli is found guilty of fraud. *New York Times*.
- Kodeks Etyczny Danone. Retrieved from <http://www.zywiec-zdroj.pl/kodeks-etyczny>.
- Dec, P., Masiukiewicz, P. (2016) *Odpowiedzialność menedżerów*. Warszawa: Wydawnictwo Instytutu Organizacji i Zarządzania w Przemysle „ORGMASZ”.
- Drapińska, A. (2015). Etyka marketingu – czy marketing jest etyczny? *Zeszyty Naukowe US. Problemy Zarządzania, Finansów i Marketingu*, 875 (41).
- Directive 2014/17/EU of the European Parliament and of the Council of 4 February 2014 on credit agreements for consumers relating to residential immovable property and amending Directives 2008/48/EC and 2013/36/EU and Regulation (EU) No 1093/2010.
- El-Gamal, M. (2006). *Islamic Finance. Law, Economics and Practice*. New York: Cambridge University Press.
- Etyka i ochrona środowiska przegrywają z ceną - zakupy Polaków. Retrieved from <http://www.zielonecieplo.eu/Akt.../Etyka-i-ochrona-srodowiska-przegrywaja-z-cen>.
- Galbraith, J. K. (2011). *Ekonomia w perspektywie*. Warszawa: Polskie Towarzystwo Ekonomiczne.
- Heath, J. (2004). A market failures approach to business ethics. In *The invisible hand and the common good*. Berlin, Heidelberg: Springer.
- Huntsman, J.M. (2005). *Zwycięzcy nie oszukują*. Gliwice: Wydawnictwo Helion.
- Jabłoński, M., Lewandowska-Nobis, M. (2018). Intencje zarządcze a etyka w kształtowaniu modeli biznesu. *Ekonomika i Organizacja Przedsiębiorstwa*, 5.
- Kościelniak, P. (2015). *Awantura o ceny leków*, Rzeczpospolita.
- Krzyminiewska, G. (2018). Etyczne aspekty funkcjonowania rynku finansowego. Przykład spekulacji surowcami rolnymi. Retrieved from http://cejsh.icm.edu.pl/cejsh/16_05.pdf.
- Lunden, B. (2008) *Prissattning*, Stockholm: Bjorn Lunden Information AB.
- Masiukiewicz, P. (2000). Ograniczenia konkurencji cenowej na rynku usług bankowych. *Prakseologia*. PAN. 140.
- Masiukiewicz, P., (2015). Nadużycia w działalności przedsiębiorstw. Aspekty międzynarodowe. *Zarządzanie. Zeszyty Naukowe Wyższej Szkoły Humanitas*, 4.
- Masiukiewicz, P. (2016). Consumer Protection in Financial Services. *Prices Area. Eureka: Social and Humanities*, 4.
- Masiukiewicz, P. (2018). Appropriation Economics versus Managers' Ethics. *Journal of Applied Management and Investments*, 7(3).
- Masiukiewicz, P. (2018). O etyce stanowienia cen. *Prakseologia i Zarządzanie*, 2.
- Matusiak, M. (2018). Zagrożenia prowadzące do nieetycznych strategii, Retrieved from <http://www.log24.pl/artykuly/zagrozenia-prowadzace-do-nieetycznych-strategii,236>.
- Maziarz, M. (2018). Zarządzanie aktywami. Obowiązek moralny a prawo. Retrieved from http://zbp.pl/public/Zarzdanie_aktywami._Obowizek_moralny_a_prawo.pdf.

- Panwar, R., Nybakk, E., Hansen, E., & Pinkse, J. (2016). The effect of small firms' competitive strategies on their community and environmental engagement. *Journal of Cleaner Production*, 129, 578-585.
- Raport KPF (2018). *Moralność płatnicza Polaków. Edycja III*. Retrieved from <http://www.egospodarka.pl/142563,nieetyczne-zachowania-finansowe>.
- Seals, G. (2013). An Ethics Paradigm for the Service Organization. *American International Journal of Social Science*, 2 (3).
- Stiglitz, J. E. (2015). *Cena nierówności*. Warszawa: Wydawnictwo Krytyki Politycznej.
- Strawiński, P. (2016). Martin Shkreli. Najbardziej zniechęcony człowiek w Ameryce. *Forbes*, 09.02.
- Uczciwa reklama - granice etyki, moralności i normy prawne w reklamie (2018). Retrieved from http://www.pi.gov.pl/PARP/chapter_86197.
- Uczciwość w świecie finansów. (2004) W. Gasparski (ed). Warszawa: Wydawnictwo Wyższej Szkoły Przedsiębiorczości i Zarządzania im. Leona Koźmińskiego.
- Ustawa z 23.08.2007 o przeciwdziałaniu nieuczciwym praktykom rynkowym, Dz.U. 2007 nr 171 poz. 1206.
- Zinoecker, R., Nowak, T., Świętek, G. (2012). Budowanie inteligencji cenowej. *Harvard Business Review* PL, 2.
- Zmowa banków (2015). Ustalały ceny metali szlachetnych. Retrieved from <http://wyborcza.biz/biznes/1,100896,18925447,zmowa-bankow>.
- Zsolnai, L. (2018). Market Fundamentalism versus Responsible Economizing. *Praxiology. The International Annual of Practical Philosophy and Methodology*. ed. W. Gasparski, 25.