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Information Technology (IT) in Agribusiness Enterprises

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Abstract
The objective of this research study is to identify the existence and role of information technology (IT) at Albanian agribusiness enterprises. IT contains many elements like: software, hardware, different systems, mobile application etc. According to this research study, these elements have been applied also at Albanian agribusiness enterprises. Different employees use different elements of IT. It is observed that employees who belong to financial department use financial software, the employees at marketing department use more www (world wide web) while the managers were more interested in decision-making software. Some of the enterprises that were involved on this research studies, had created also IT department. It is obvious that those enterprises contain a major role on business. There has been a statistical analyze by **SPSS** program of all data that were collected by the surveys on interviews. According to the results, there was a connection between production forecast, number of computers and IT department existence. Production forecast is on percentage which means that if the enterprise wants to produce more next year comparing to the actual year, then it needs more computers and perhaps to create an IT department. The probability is calculated according to statistical regression models. This research study is very important as it contributes to involve IT on agribusiness enterprises.
Keywords: Enterprise, information technology (IT), department

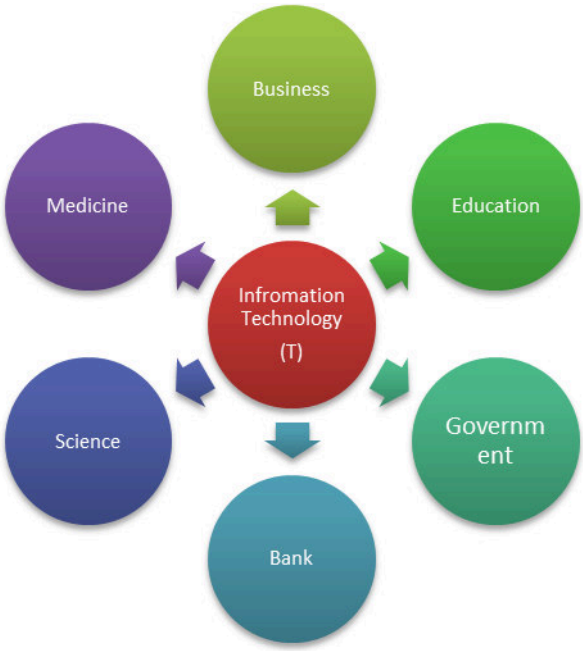
1. Introduction

The role of Information Technology (IT) is increased in every aspect of life. IT is becoming very important also on Agribusiness. This role is observed also on Albanian agribusiness enterprises. As it is known, IT involves software, hardware and all computer systems. The enterprises are different sizes: small and big ones. There are many enterprises that use IT in Albania, by bringing innovation and better performance for it. IT is used by different employment levels: simple employers, economists, farmers and managers. There are many purposes that IT is used in enterprises but the main aim is to give better performance to the enterprise and help managers for better decision-making. IT equipments and different systems were observed on each agribusiness enterprises. This research gives a statistical study if the agribusiness enterprise needs to create a computer science department or no and its probability. Based on survey results, the reasons that IT is used by agribusiness are:

- The speed of data process
- Simplicity
- Reliability
- Accuracy
- Usage on all levels of employee
- Usability

2. Relevant work

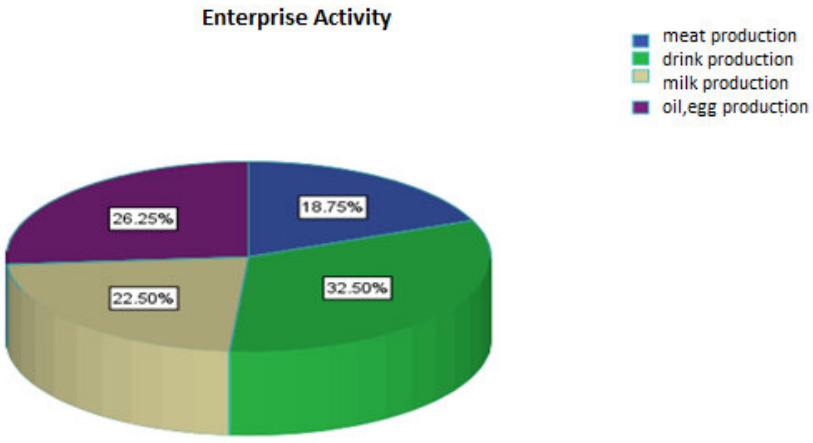
The model of Information Technology (IT) includes that structure which ménages the information systems by using computer science (software or hardware) and helps to automate many operations that are necessary for agribusiness enterprise. IT plays an important role in order to access property and knowledge. Referring to the pictures, it is obvious that IT plays a key role on business, education, medicine, science, bank and government.



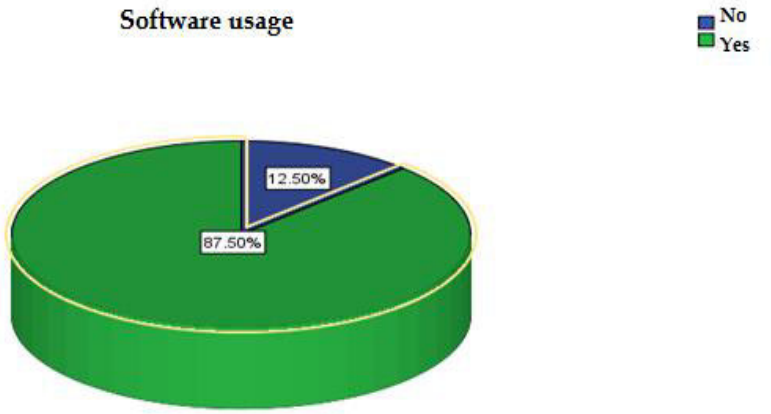
There have been different studies about information technology (IT) on agribusiness enterprises. Information technology includes different software that are used in enterprises like: GIS/GPS, control systems, verification systems, training systems that can be used from mobile, different mobile applications, different decision-making software. Software is used by all employers like economists, specialist and managers. If we refer to different kind of agribusiness enterprises which are included on this research study, they are: oil production, meat production, wine production, soft drink production enterprises etc.

3. Methodology

A survey is created from which different interviews were done on Albanian agribusiness. There were interviewed one employer from IT (if the company owns the department) or financial department and manager. The interviews were done face to face with the employers. According to the interviews, there has been a large variety of agribusiness enterprises which are included on this research studies. These enterprises were located in Albania and their number is 80.



Based on above graphical presentation, 32,5% of enterprises belongs to drink production, 22.5% belongs to milk production,26.25% belongs to oil, egg production and 18,75% belongs to meat production.



According to the survey the employers of agribusiness enterprises, 12,5 % of those who don't use software very often and 87,50% use it too much.

During the interview a section of the survey was referring to the existence on their enterprises the IT departments. Some of the enterprises had an IT department and other didn't have. Also, the interviewers have recorded the number of computers in each enterprise and also production forecast. Production forecast is on percentage and it shows how much the enterprise wants to add on next year in production. If we consider production forecast as X1 variable.

Y- IT_department, is the dependent variable which shows the probability of IT department existence in an agribusiness enterprise.

X1-Production_forecast (in percentage)

X2-Nr_computers

		IT_Department	Nr_computers	Production_forecast
IT_Department	Pearson Correlation	1	.722**	.551**
	Sig. (2-tailed)		.000	.000
	N	80	80	80
Nr_computers	Pearson Correlation	.722**	1	.434**
	Sig. (2-tailed)	.000		.000
	N	80	80	80
Production_forecast	Pearson Correlation	.551**	.434**	1
	Sig. (2-tailed)	.000	.000	
	N	80	80	80

Matrix Correlation

If we check the dependence of these variables, there is a realtion between of these variables like IT_Department, Nr_computers and Production_forecast. There is a strong connection between these variables as Sig. is less than 0,05. As the dependent variable is diatomic, it is better to study this relation by using Logit model.

Logit Model

Logit model is a regression model where the dependent variable is categorical which means that is just takes two values: Yes or No in our case and it helps to calculate the probability of happening each of them.

The first equation calculates the variable *Li* by referring to undependent variables.

$$Li = B_0 + \sum_{n=1}^{k} \mathrm{X}i * \mathrm{B}i$$

Probability that Y=1 is calculated as follows:

$$P(Y = 1) = \frac{1}{1 + e(-Li)}$$

It is neccessary to create another variable to categorize the computers in these clasesses. The categorization is as follows:

Nr_computers	class_computers
0-10	1
10 deri në 20	2
>20	3

After the execution of Logit model, the results are shown as follows:

Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	44.752	2	.000
	Block	44.752	2	.000
	Model	44.752	2	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	61.098[a]	.428	.584

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than.001.

Classification Table[a]

	Observed		Predicted		
			Department_IT		Percentage Correct
			NO	YES	
Step 1	Department_IT	No	45	5	90.0
		YES	7	23	76.7
	Overall Percentage				85.0

Based on this table, this model is true on 85% of the cases.

Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	class_computers	1.559	.406	14.758	1	.000	4.755
	Production_forecast	.201	.073	7.689	1	.006	1.223
	Constant	-5.719	1.150	24.745	1	.000	.003

Referring to the above table, the interpretation is as follows:

- The possibility that there is an IT department at agribusiness enterprises is 1.223 higher than those don't have IT department when production forecast is increased by 1% and class_computers is constant.
- The possibility that there is an IT department at agribusiness enterprises is 4.755 higher than those don't have IT department when number of computers pass from one class to a higher class and production forecast is constant.

Based on this result, it is obvious that all variables play an important role on this model. Referring to the result table, the probability of this model can be calculated as follows:

Li=-5.719+0.201* Production_forecast+1.559* class_computers

$$P(Y=1)=\frac{1}{1+e(-Li)}$$

This equation helps to calculate the probability of IT department existence in an agribusiness enterprise. This is very important as the enterprise calculates also a part of the budget for IT investment.

4. Conclusion

IT is very important not only on Computer science but also for Agribusiness. There are a lot of enterprises of Agribusiness that uses it widely and they have adopted also for their employees. The level of adoption depends also on the size of enterprise. IT is adopted by economists, marketing employers and managers. Also, there are different systems which are installed and applied on these enterprises. To obtain information, a survey was spread and based on it interviews were taken with the employees. After a statistical analyze of all data by SPSS

program, it is concluded that IT has increased its role on Agribusiness. If the enterprise wants to extend its production, the probability of creating an IT department is calculated by a formula.

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