

# The Role of E-Commerce in Dairy Goat's Agribusiness into the Era of Industrial Revolution 4.0

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**Abstract**— *Animal husbandry is one of the sub-sectors of agriculture which plays an important role in meeting the animal protein needs of the Indonesian people. In the industrial era 4.0 through electronic commerce or so-called e-commerce can support the sustainability of business actors, especially in the field of livestock agribusiness. The purpose of this research was 1) The application of e-commerce in Wonosari District, Malang Regency has been implemented by dairy goat farmers in the last five years on average. E-commerce business models that are already running are Business to consumer (B2C) and Business to Government (B2G). 2) The role of e-commerce has a positive impact on the upstream, on-farm, downstream and supporting sub-system activities of dairy goat farmers in Wonosari District because of the motivation of farmers to face the era of industrial revolution 4.0. The results of simple regression analysis between the influence of the role of e-commerce on the demand for dairy goat products in the form of pure milk with a significance result:  $0.960 > 0.05$ , which means that the role of e-commerce has no significant effect on the demand for dairy goats.*

**Keywords**— *Mobile commerce, simple linear regression, Demand, strategy.*

## I. INTRODUCTION

Agribusiness is a system for developing the potential that exists in an area. The system is very closely related and aims to create a unified business activity that utilizes all the potential of natural, human and environmental resources in the region. According to Kasman (2013), Android is a linux-based mobile phone operating system dvn tablet computer touch screen. But along with the development of Android, it has turned into a platform that is so fast and innovative. Soekartawi (2007) states that there are three actors in the e-commerce or e-agribusiness mechanism, namely the role of producers, the role of consumers and the role of the media.

According to Soekartawi (2002), agribusiness is an activity which is one or all of the activities that include the production chain, processing of products and marketing that have to do with agriculture in a broad sense. The development of business in the era of revolution 4.0 cannot be separated from the use of m-commerce as an access door to e-commerce. E-commerce-based business systems are very intensively carried out by entrepreneurs in any field to easily adapt to the demands of their needs. Therefore, there is a need for a strategy for farmers to be able to adapt and compete with the global competitive environment in the era of the industrial revolution 4.0. Yusdja (2005) states that Indonesia is a tropical country that has a type of climate suitable for the development of dairy goats, extensive land and forage production that is far from sufficient to raise 100 million dairy goats or 10 times the

current population of dairy goats. For growing babies, pregnant women, breastfeeding, parents, and for healing various diseases and skin beauty (Mulyadi, 2015).

According to Kotler (2005), a marketing channel is a series of interdependent organizations that are involved in the process of making a product or service ready for use or consumption. Analysis of the marketing channels for livestock products has generally been carried out. There are two forms of marketing channels, namely long-term marketing channels and short-term marketing channels.

This study aims to see the measured approach to see the extent of the role of e-commerce in the sub-system, on-farm, and downstream activities in dairy goat agribusiness in Wonosari District, Malang Regency. In addition to seeing how the application of e-commerce, the author will examine the level of strategy for implementing e-commerce in terms of the level of actualization in the dairy goat agribusiness from upstream to downstream. In this case, the authors hope to produce optimal alternative strategies to be developed by dairy goat farmers in the face of business competition in the era of the industrial revolution 4.0.

## II. RESEARCH MATERIALS AND METHODS

### A. Research Location

The research was implemented in Wonosari District, Malang Regency, based on a Badan Pusat Statistik Malang (2018) survey database stated that the population of goat livestock is increasing every year.

### B. Research Methods

This research used descriptive qualitative and quantitative methods, namely research that describes and describes the characteristics of the state or object of research carried out through data collection, data analysis, and interpretation of analysis results in accordance with the circumstances and actualization in the field. The research will be conducted through a survey method. Sugiyono (2013) states that research conducted using a questionnaire as a research tool is carried out on large and small populations, but the data studied is data from samples taken from that population, so that the relative incidence, distribution, and relationship between variables, sociology is found and psychological.

### C. Data Analysis

Data analysis used in this study is a descriptive qualitative analysis method in the form of tables to analyze the application of e-commerce in upstream, on-farm, downstream

activities and supporting dairy goat agribusiness in Wonosari District, Malang Regency. Descriptive qualitative analysis to analyze the level of role and application of e-commerce in dairy goat agribusiness and its relationship with agribusiness activities from upstream to downstream. Furthermore, quantitative analysis is used to analyze (1) The application of e-commerce in Wonosari District, Malang Regency and (2) the role of e-commerce on dairy goat demand. The software that will be used to process data is Microsoft Excel 2013 and SPSS 22. According to Sugiyono (2016) explaining simple linear regression analysis is as follows: "Simple regression is based on a functional or causal relationship of one independent variable with one dependent variable". Simple linear regression analysis is used to examine the nature of the causal relationship between the independent variable (X) and the dependent variable (Y) which is formulated in the form of the following equation:

Y = Variable Response or Variable Effect (Dependent)  
 X = Predictor Variable or Variable Causative Factor (Independent)  
 a = constant  
 b = regression coefficient (slope); the amount of response generated by the Predictor.

$$a = \frac{(\sum y)(\sum x^2) - (\sum x)(\sum xy)}{n(\sum x^2) - (\sum x)^2}$$

$$b = \frac{n(\sum xy) - (\sum x)(\sum y)}{n(\sum x^2) - (\sum x)^2}$$

### III. RESULTS AND DISCUSSION

#### Business To Consumer (B2C): -

Lauden and Traver (2017), reveal that Business-to-Consumer (B2C) e-commerce, is the type of e-commerce that is most often discussed, where this type of online business reaches individual consumers. The Business to Consumer business flow model involves two roles, including producers and consumers by using m-commerce media as information providers of buying and selling products. Based on research in the field, the platforms used as media are WhatsApp, Instagram and Facebook. Farmers, namely producers, make sales through broadcasting whatsapp status and posting on Facebook. Furthermore, consumers place orders and offer products, namely dairy goats or whole milk. There are regular consumers who have become subscribers from year to year in terms of purchasing dairy goats to be shipped out of the region. Orders via WhatsApp are made to make an agreement on the number of livestock to be purchased, the method of payment and the method of delivery of the product ordered. E-commerce Business to Consumer (B2C) Perspective of Farmers as Consumers explains that farmers can become consumers in terms of fulfilling livestock inputs such as goats for livestock, feed, and other livestock production facilities. Farmers also often broadcast to fellow farmers to buy feeder, ceme or broodstock if their business requires goats according to their needs for cultivation. In this case, farmers can become producers and consumers for fellow farmers to support the dairy goat business.

#### Business to Government (B2G): -

The Business to Government (B2G) Model in Wonosari District is of interest in terms of information exchange, with the existence of e-procurement, the public and potential investors can see details of business and government budgeting in launching procurement projects that can be viewed transparently through the website. In this case, the development which is a government project to build livestock areas such as in Wonosari District can be accessed directly by the community. In practice the B2G system, which occurs in accordance with the results of field research, shows that the government uses the B2G model to approach farmers, investors and the community. In addition, through m-commerce, farmers provide information in the form of products marketed through Facebook and Instagram for the government and investors to see.

#### Analysis of Respondents' Motives on the Role of E-Commerce:-

The motive for the application of e-Commerce is the motivation for farmers to use M-Commerce which is expected to help farmers in developing their business are: to Promote products, Build a product image, Assist in competing with large companies / entrepreneurs of the same type, Assist in competing with similar smaller / medium enterprises, Accessing information from outside parties (government, academia, and related parties), Get new customers, Access the global market, Get closer to customers, Establish faster communication with customers or other entrepreneurs, Providing services without time limit, Satisfying customers, Assisting business transactions, Get a new supplier, Simplify communication with suppliers, Getting new business partners from inside and outside, Get a distributor or agent, Access information from outside parties, Cost savings, Shorten the distribution chain, Improve internal communication in the District, Assist in the process of withdrawing workers from the District, Improves Business process efficiency, and Effectiveness of business processes.

#### Linear Regression Analysis:-

TABLE 1. Validity Test of X and Y Variables

Instrument	r-value	r-table	N Sig.(<0,05)	decision
X1	0,292	0,250	0,23	Valid
X2	0,323	0,250	0,12	Valid
X3	0,519	0,250	0,00	Valid
X4	0,384	0,250	0,002	Valid
X5	0,436	0,250	0,000	Valid
X6	0,410	0,250	0,001	Valid
X7	0,303	0,250	0,019	Valid
X8	0,386	0,250	0,002	Valid
X9	0,430	0,250	0,001	Valid
X10	0,286	0,250	0,027	Valid
X11	0,485	0,250	0,000	Valid
X12	0,335	0,250	0,009	Valid
X13	0,334	0,250	0,009	Valid
X14	0,394	0,250	0,002	Valid
X15	0,390	0,250	0,002	Valid
X16	0,329	0,250	0,010	Valid
X17	0,376	0,250	0,003	Valid
X18	0,446	0,250	0,000	Valid
X19	0,386	0,250	0,002	Valid
X20	0,385	0,250	0,002	Valid

X21	0,284	0,250	0,028	Valid
X22	0,699	0,250	0,000	Valid
X23	0,351	0,250	0,006	Valid
Y1	0,705	0,250	0,000	Valid
Y2	0,602	0,250	0,000	Valid
Y3	0,661	0,250	0,000	Valid
Y4	0,578	0,250	0,000	Valid
Y5	0,600	0,250	0,000	Valid
Y6	0,331	0,250	0,010	Valid

Source: Primary data processed by SPSS

All statements for the E-commerce variable (X) and the Demand variable (Y) have a valid status on each item, because the calculated r-value is greater than the r-table value of > 0.250. Furthermore, the significance value (N-Sig) on all items each has a value of more than > 0.05, so the instrument in the study is declared valid.

TABLE 2. Reliability Test

No	Variable	r-alpha	r-crit	decision
1	E-commerce (X)	0,706	0,600	Reliable
2	Demand (Y)	0,612	0,600	Reliable

Source: Primary data processed by SPSS

Based on Table 2 the reliability test was carried out on statement items that were declared valid. So on the results of the reliability coefficient of the E-commerce variable instrument (X) is r-alpha = 0.706, the instrument variable demand (Y) is r-alpha = 0.612, it turns out to have a Cronbach Alpha value greater than 0.600. So from the results of the analysis using SPSS, it is stated that the whole instrument produces reliable decisions or meets the requirements.

TABLE 3. Normality Test

		Unstandardized Residual	
N		Mean	60
Normal Parameters <sup>a,b</sup>	Mean	.0000000	
	Std. Deviation	4.62634996	
Most Extreme Differences	Absolute	.090	
	Positive	.090	
	Negative	-.072	
Test Statistic		.638	
Asymp. Sig. (2-tailed)		.248	

Source: Primary data processed by SPSS

Based on Table 3 Output One Sample Kolmogorov-Smirnov, the Asymp value can be seen. Sig. = 0.248. If the value is Asymp. Sig is more than 0.05, it can be concluded that H0 is accepted or it can be said that the normality test in this study is normally distributed.

TABLE 4. Test of Linearity

		Sum of Squares	df	Mean Square	F	Sig.
Y * X	(Combined)	138.763	17	8.163	1.278	.253
	Between Groups	.018	1	.018	.003	.958
	Deviation from Linearity	138.745	16	8.672	1.358	.210
Within Groups		268.220	42	6.386		
Total		406.983	59			

Source: Primary data processed by SPSS

Based on Table 4 the linearity test above, it can be seen that each variable forms a linear curve with a value of Fhit (TC) = 1.358 = less than <0.05, which means that the regression model is not linear. Furthermore, the significance result of p-value = 0.210 is more than > 0.05, which means that H0 is accepted or the E-commerce (X) and Demand (Y) variable equations are linear or in the form of a linear line.

TABLE 5. Simple Linear Regression

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.018	1	.018	.003	.960 <sup>b</sup>
Residual	406.965	58	7.017		
Total	406.983	59			

Based on the output in Table 5, it is found that the significance value is = 0.960, where sig. > value 0.05, it can be concluded that the distribution of the value of the e-commerce variable (X) is not linear with the demand variable (Y). The hypothesis in this study are: H1 is rejected and H0 is accepted because the sig = 0.960 > 0.05, which means that the role of e-commerce has no significant effect on the demand for dairy goats.

#### IV. CONCLUSION

The role of e-commerce has a positive impact on the upstream, on-farm, downstream and supporting sub-system activities of dairy goat farmers in Wonosari District because of the motivation of farmers to face the era of the industrial revolution 4.0. Although in a straight line, the role of e-commerce in the actual activities of the upstream, on-farm, downstream and supporting subsystems does not affect the demand for dairy goat pure milk. The results of simple regression analysis between the influence of the role of e-commerce on the demand for dairy goat products in the form of pure milk with a significance result: 0.960 > 0.05, which means that the role of e-commerce has no significant effect on the demand for dairy goats.

#### REFERENCES

- [1] Badan Pusat Statistik, 2018. Kecamatan Wonosari Dalam Angka. <https://malangkab.bps.go.id/publication/2018/09/26/42e150e15229b179a0fda014/kecamatan-wonosari-dalam-angka-2018.html> (accessed on 1 October 2019).
- [2] Kasman, 2013, Kolaborasi Dahsyat Android dengan PHP & MYSQL, LokoMedia, Yogyakarta.
- [3] Kotler, P. 2005. Manajemen Pemasaran. Jilid I dan II, PT. Indeks, Jakarta.
- [4] Laudon dan Traver. (2017). E-Commerce 2014, 10th Edition. Pearson
- [5] Mulyadi, U. 2015. Panduan Terlengkap Beternak Dan Berbisnis Kambing perah Etawa & Kambing perah Lokal. FlashBooks. Yogyakarta.
- [6] Soekartawi. 2002. Analisis Usahatani. Jakarta: Universitas Indonesia
- [7] Soekartawi. 2007. Prinsip Dasar Ekonomi Pertanian. Jakarta. Penerbit Rajawali.
- [8] Sugiyono. 2013. Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D. Bandung: Alfabeta.
- [9] Sugiyono. 2016. Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D. Bandung: Alfabeta.
- [10] Yusdja, Y. 2005. Kebijakan Ekonomi Industri Agribisnis Sapi Perah Di Indonesia.