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Growth of Egg and Poultry Meat Production with Moderating Effect of Risk and Return in Private Poultry Farms at Quetta District Balochistan:

By

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Abstract:

The study was conducted in November 2018 to October 2019 for the exploring of growth of egg and poultry meat production with moderating effect of risk and return in private poultry farms at Quetta district of Balochistan. By area, the biggest province of Pakistan is Balochistan and Quetta is the capital city of Balochistan. The total population of Quetta city is 1100000 while the total population of Balochistan is 12.34 million and its population growth rate is 2.8%. This province is mostly agrarian. Livestock is related to agrarian sector and poultry farms are linking with livestock department. After lasbeela, the second largest poultry products producing city is Quetta. Current study focuses the growth of poultry production such as egg production and meat production of private poultry farms. The poultry growth (PG) depends upon the poultry production (PP) and its profit. However risk is also challenging this business. Private investors of poultry business are much conscious about risk. The risk and return (RR) are the moderating variables of the study. The poultry production of Quetta district is more expensive from Punjab due to lack of facilities such as transportation, poultry medicines and poultry foods goods. For inferring results, the researcher used the secondary data of ten private poultry farms of Quetta district for five years from 2013 to 2017. For analysis the researcher used many tools such correlation, regression, ADF tests and Granger causality tests. There was found out negative relationship of cost and production and its growth. The risks relationship is as it. But return keeps the positive relationship with production and growth. The study concluded that production of poultry increases then the profit and its growth also increases. But risk is also matter in the field of poultry.

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Introduction:

Balochistan is a developing province of Pakistan while Quetta is its capital city. Balochistan is the biggest territory of Pakistan by region and the littlest by its populace individuals of the country region are generally reliant for meat on provincial poultry. Poultry is kept up in Balochistan provincial territory in little parts (Economic Survey of Pakistan, 2016). Currently, many private poultry farms have been developed in Balochistan and Quetta for chicken meat and egg production. The protein is most significant for the health of human being, and the best source of protein intake is meat and eggs (Aghwan et al., 2016). The key source for egg and meat production is poultry farms, which contributes to Pakistan export (Alahakoon, &Jayasena, 2016). Fare of the live poultry and meat from Pakistan extended Rs.27 million in 2009-10 to Rs.1.08 billion in 2010-11, and it diminished to Rs. 365 million in 2011-2012. Pakistan conveys poultry and meat to Afghanistan, Iran, Vietnam and Hongkong. The poultry part is a standout amongst the most sorted out and lively fragments of the horticulture business of Pakistan. This division produces immediate and roundabout work and pays for about 1.5 million individuals. Its commitment to agribusiness and domesticated animals is 5.9% and 12%, individually. White meat consumptions are increasing day by day in Pakistan due to the cheapest source of the animal protein. White meat, broiler took lesser time to raise in poultry forms under a suitable environment (PPA, 2013). Nearly six weeks with high protein feed are required to rear a day old chick under controlled suitable environment to attain the requirement of 2 kg weight, and approximately six chicks can be raised in same time under same premises of the farm. A strict measure of bio-security of new birds is measured. After proper growth of chicks, the trained staff cleaned the place with the recommended chemical to clean any type of infection or fumigation of the resident birds. Pakistan can keep nearly 5,000 controlled environment poultry houses, but recently only 2500 were working in Pakistan. From 2500, nearly 75% working in Punjab and the rest were in other provinces.

Protein production is too low in Pakistan that it cannot fulfil the requirement of a single person. According to the World Health Organization (WHO), it will be 27 g for a single person, but a single person can consume the only 17g of animal protein and eggs (Memon, 2012). The government should make an effort to make this poultry industry more flourish and give more incentives to increase its productivity as it takes a great part in the economics of the country. The government should also take efforts for making new policies especially in controlling fluctuating prices of the white meat and take control over its biosecurity so that mortality rate would be controlled (Aghwan et al., 2016). Although, Pakistan has a large economic consumption through poultry farming and egg production in rural areas backyard farming (farming

of chicks and egg production on a small scale) also have its significance. Backyard formers earned from the rearing of chicks and it's a valuable source of income for them. They sold the nurtured chicks in nearby markets and villages and the earning used for their household economy (Tufail et al., 2012). Backyard forming is controlled by a female member of the house, and nearly 2/3rd population of the rural population was working on this forming production. As District Quetta, Balochistan is under the developed district of Pakistan that's why in rural areas mostly individual's income source is this backyard poultry forming. Their house economy depends on the poultry and egg production because it's a rapid turnover and high return on their source of income (Sultana et al., 2012).

The cost to run a poultry farm of having nearly 35,000 birds is nearly 24.9 million from which 19.2 million is for construction of the unit, purchasing equipment or machinery and remaining would be paid for purchasing day-old chicks, feed and vaccine etc. Controlled environment condition like temperature is the most important component in poultry forming. Pakistan is the tropical region where temperature leads to 40°C in summers; it is important to keep temperature according to the need of the birds. The mortality rate is high when poultry farms have heat stress, poor management and these factors may also lead to low growth rate and make it to poor economic conditions. Controlled environment and trained staff in summers control these all unfavourable circumstances and run the poultry business smoothly in this weather as well (Nazir, 2013). Government of Pakistan also announces budgets in favour to improve the quality of meat and egg productions. Many types of research and research centres are in process to help out these systems to improve the quality of meat and egg production. Livestock and Dairy Development Board (LDDB) and Pakistan Agricultural Research Council (PARC) are working under the "Ministry of National Food Security and Research" to maintain the management and extended services in this field. These centres not only give complete research on animal genetics and breeding services, health management and extension services but also improve the quality to meet the standards to international standards and produce the business to the global level. Furthermore, Pakistan government also took the initiative in the supplying of animal welfare systems, veterinary pharmaceuticals and vaccine processing systems to more improve the quality of meat and health productions (Economic Survey of Pakistan, 2016).

Conceptual Framework:

Poultry farmers are producing egg and poultry meet at large scale. Quetta, Lasbella and Pishin are the major poultry rearing areas of Balochistan due to climate, weather condition and their location. When production leads the return and then the poultry industry goes to the growth while the risk is present in the whole situation .The conceptual framework of growth of private poultry farms with moderating effect of risk and return can be shown in such framework.

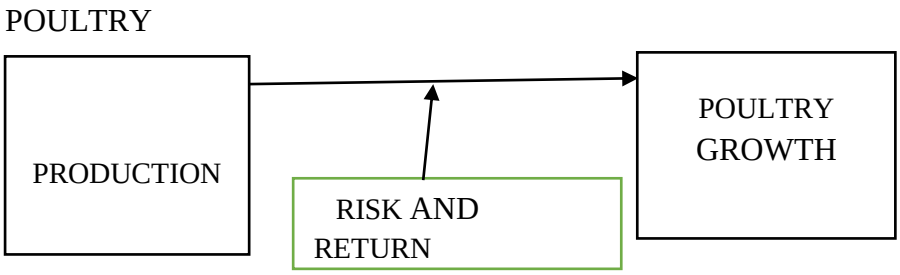

Figure-I Conceptual Framework:

The conceptual framework of the study was presented to clear the concept about the study. In this study the conceptual framework is consisted on poultry production (PG), poultry growth (PG) and risk and return (RR). The poultry production has two parts first is poultry egg and the second is poultry meat which are the independent variables. The poultry growth is dependent variable which is dependent variable and effected by risk and return on the other hand risk and return are the moderating variables which are affecting the other both variables. This entire situation is shown by a framework in this study.

Materials and Methods:

This study was conducted during the years of 2018-19.from the ten private poultry farms of Quetta district of Balochistan. The secondary data was used and the ten poultry farms are followings; Juma Khan Poultry farm Killi Mubarak Chowk Quetta Khaki Poultry Farm Tera Meel Dasht Quetta, Mubarak Poultry Farm Mengal Abad Quetta, Khair Ullah Poultry Farm Western Bypass Dasht Quetta, Master Sardar Poultry Farm Nawa Killi Quetta, Hashim Poultry Farm Nawa Killi Quetta, Rahim Poultry Farm Aghberg Quetta, Qaiser Poultry Farm Cheshma Achozai Quetta, Qadusi Poultry Farm Cheshma Achozai Quetta, Nimat Poultry Farm Killi Shaboo Quetta. The secondary data was utilized for this research. The researcher used many tools such as regression, correlation, standard deviation, Augmented Dickey Fuller tests and Granger causality tests. The time series data was used as prove and support. The hypothesis also applied for result validation. The secondary data was collected from websites, personal hiring from poultry farmers, books, peer reviews, and publications. This secondary data was taking for the period of 2013 to 2017 for the five years. The production of egg is measured in dozen and production of meat is measured in kilograms (KGs). The growth is the proper improvement and increasing rate of production. Growth is also called about the same as profit and return. The risk and return also make the matter in production and growth. Risk does negative influence on production and growth while the return does positive influence on both production and growth. It was proved by hypothesis and analytical techniques in this study. The risk was measured by beta coefficient and

profit or return was measured in Pakistani currency rupees. For measuring and calculating the data, SSPS version 19 was used. The Views ten is used to review and analysing the overall data and for matching the results. All the variables of the study were checked in granger causality tests and verified for relationships. Some factors which are directly effected on the poultry industry such as finance, government policies, weather , climate and geo-physical location etc. are also discusses in this study. After taking the day-old chicks from hatcheries, the pullets were raised by providing proper balance diet and well-structured environment (Zaghari et al., 2011). The rotating belts pass the water and foods to hens and chicks respectively. They were kept under supervision until they start laying eggs (Ayieko, Bett, &Kabuage, 2014). The rotating belts send the laid eggs to sorting chamber for testing the fertility, sorted and graded and finally delivers the egg into the market. The size of laying egg hens are usually small as compared to the broiler hens that used for meat production (Bano et al., 2011). They can categorize into two groups, egg-producing and dual-purpose chicken. The dual-purpose chicken produces around 200 eggs per year due to of their smaller size (Binnie & Harrison, 2014).In the past, the egg production was quite long and hectic process as it used to take four months to produce two Kg chicken meat (Hussain et al., 2015). In contrast, now in the current time with the technological advancement in poultry farms the meat production has become fast as it takes only 40 days for producing a two-kilogram chicken (Imtiaz, 2012). The broilers raised in controlled poultry environment. The fertilized egg transported to the hatchery for 18 days then relocated for incubation process within last three days (Taru, Mahari&Aganing, 2010). After incubation, fertilization and growth the producers slaughter and process them after 42 days (Silva, & Vieira, 2010). The broilers that are raised for meat production contain heavy body frame than the layers. The Pearson correlation and other descriptive statistics are shown as below;

Table 1:Mean, Standard deviation , correlation of data

Items	Mean	SD	Variance	Correlation			Beta.
				1.	2.	3.	4 . :
Poultry Growth (PG)	6.8	0.89	1.4			1.00	0.91
Poultry Production (PP)	7.02	0.93	1.7		0.91	1.00	0.88
Risk of Poultry (RP)	3.1	0.36	0.58	0.89	0 .88	1.00	0.87
Return on Poultry (R*P)	6.4	0.58	1.3	0.96	0.89	0.87	1.00 0.90

** Significant at 0.001 and 0.005 level (2 tailed)

(Cronbach, 1951).

Hypotheses:

H1: There is a positive relationship between poultry production and growth of private poultry farms.

H2: Risk and return in poultry industry have moderating effect on growth of private poultry farms.

Results and Discussion:

The research objectives were to investigate and explore the variables of the study which are independent, dependent and moderating variables. Independent variables were egg production and meat production while dependent variable was growth and moderating variables were risk and return. Production is measured in dozen and kilogram and also overviewed the impact of sale and cost on poultry growth (PG) which is the dependent variable of the study. The moderating variable of the study were risk and return. The risk is measured with beta coefficient and return is as like the profit which is taking as profit and measured in Pakistani rupees. To examine the relationship of the variables of the study, researcher proposed that there is negative relationship between cost and production while sale and production are positively related. All these are the supported by the critical reviews of the literature. The statistical tools of the study results showed that the mean of the egg and meat production. During the study selected five years mean of the meat of the Khaki, Rahim, Master, Juma poultry farms were as 8302, 11887, 11666, 80933 respectively. The trend analysis of the study declared that there has been fluctuation in growth of

poultry. The growth of egg and poultry meat production was increased initial four years of the study from 2013 to 2016. While during the year of the 2017 the poultry industry was gone to depression. So the profit and production decreased and the growth also decreased. For inferring the result, the researcher utilized the secondary data which was collected by different sources such as personal, websites magazines etc. to analyse the research, data and related calculation was used to E-views 8.0 which is a software of econometrics design for secondary data analysis. The researcher used correlation to determine the relationship of the dependent and independent variables. It was found out that there was a positive relationship between both variables. The result of ADF test declared that the time series bears a unit root test or stated that the time series data does not resolve around the mean rather than there has been change the value of time series data over the period of time. The granger causality test finds that there was causal relationship between the independent and dependent variables of the study. The regression analysis of the study was employed to see the impact and strength of independent and dependent variables. The result showed that there is negative relationship between cost and production but profit and production and production and growth relationship was positive. The correlation result is also as the same regression. From the evidence of the various studies and reviews, the hypothesis of the study is proved that i.e. positive impact of the prices with its production and then growth. Like that the risk disturbed the business but not destroyed while return also increased.

Conclusion:

During the study the researcher examined the effects of risk and return on growth of egg and poultry meat productions with the help of covariance, correlation and regression analysis. ADF test and Granger causality test were used to check the proposed hypothesis. The research proposed the positive relationship between the production and growth. However there is negative relationship found between the cost, production and growth. Risk decreases the production profit and growth. But risk can be eradicated by taking some steps. Risk is controllable in poultry by poultry farmers. The growth of poultry production increased except in short period during the year of 2017. The mean of the profit of meat production during the five years of the research is 8520044 rupees. It means that the growth of the poultry is strongly positive. To check the more validation of the results, annual time series data is used and findings are fully supported the results. For checking the relationships of the variables, correlation, covariance and multiple linear regressions is used. The analysis finalized that the production of poultry i.e. egg and poultry meat is positive relation with growth and returns. But cost and risk are negative relation with growth and returns. For validation of the result of each variable Granger causal test is used. Augmented Dickey Fuller test results which are based on the

null hypothesis states that the time series has a unit root test. ADF explore that the changes in variables are accorded during the time to time. All the analysis, tests and hypothesis proved that the production of private poultry farms egg and meat has growth with the negative influence of risk and with increasing ratio of return. It can be concluded that the RR has moderating effect on the relation between poultry productivity (PP) and poultry growth (PG). The conclusion indicates that in five years the risk and return had the moderating effect on the relation between PP and PG. Further a significant positive relationship has been found in PP and PG.

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