

## Direct, Indirect and Induced Economic Contributions: The Case of Artvin Coruh University

**Sinem Gözde BEŞBALLI**

Artvin Coruh University  
Hopa Faculty of Economics and  
Administrative Sciences  
Hopa, Artvin, Turkey  
[orcid.org/0000-0003-2367-7252](https://orcid.org/0000-0003-2367-7252)  
[sinemgozde@artvin.edu.tr](mailto:sinemgozde@artvin.edu.tr)

**Zeynep ÖZTÜRK**

Artvin Coruh University  
Hopa Faculty of Economics and  
Administrative Sciences  
Hopa, Artvin, Turkey  
[orcid.org/0000-0003-0475-1357](https://orcid.org/0000-0003-0475-1357)  
[zozturk@artvin.edu.tr](mailto:zozturk@artvin.edu.tr)

### Extensive Summary

Universities have direct, indirect and induced contributions on the income and employment of their cities (Lewis, 1988, p. 53). The contributions of universities on the income and employment of their cities have huge importance for the cities which are rather economically underdeveloped in comparison with other cities in terms of making new investments and boosting the economy of the city for minimizing developmental differences with other cities. For this reason, this study aimed to determine direct, indirect and induced contributions of Artvin Coruh University on the income and employment of Artvin which is rather economically underdeveloped in comparison with some other cities of Turkey.

The sum of academic and administrative personnel in the all units of university exhibits direct employment contribution; the wage and salary payments of university to academic and administrative personnel exhibits direct income contribution (Atik, 1999, p. 100; Lewis, 1988, p. 54).

Founding a university in a region extends the activities of firms which provide goods and services. These contributions, which cannot be included in the group of direct contributions of university on local economy, named as indirect contributions (Atik, 1999, p. 100; Lewis, 1988, p. 54). The sum of the expenditures of university for purchased goods and services from local economy except its own personnel with student expenditures exhibits indirect income contribution (Erkekoğlu, 2000, p. 214); the generated new personnel employment with the development of sectors, which provide the required goods and services of university, and the activities which benefit from student expenditures exhibits indirect employment contribution (Çayın ve Yapraklı, 2014, p. 156). In order to calculate indirect contribution to employment, amount of production per employed labor force which belongs to relevant year need to be determined. And then, the indirect income contribution of university is divided into the value of production of services per labor force and the indirect employment contribution of university is calculated (Atik, 1999, p. 105; Tuğcu, 2004).

Induced contributions express generated income and employment increase depended on direct and indirect contributions. This is also named as “Keynesian Multiplier Effect” which based upon a hypothesis that depending on marginal propensity to consume, made expenditures cause income growth more several fold than owned (Atik, 1999, p. 101; Tuğcu, 2004). While the expenditures made by university have the characteristics of direct and indirect income for local economy, it also paves the way for the increase of induced income thanks to multiplier mechanism (Erkekoğlu, 2000, p. 214).

In this study which is based on the importance of the impacts of universities on local economy, it is aimed to determine the direct, indirect and induced contributions of Artvin Coruh University on the income and employment of Artvin’s economy. For this reason, the impacts of university on local income and employment are examined statistically and econometrically with using the data related to 2016-2017 academic year. The results obtained from analyses demonstrate that the direct, indirect and induced income and employment contributions of Artvin Coruh University on Artvin economy are positive.

The direct, indirect and induced contributions of Artvin Coruh University on Artvin economy in 2016-2017 academic year are given in below table as consolidated.

**Table 1. The Direct, Indirect and Induced Income and Employment Contributions of Artvin Coruh University on Artvin Economy**

Contribution Type	Income (TL)	Employment (Person)
Direct	38.863.944	718
Indirect	58.257.830,67	526
Induced	418.594.849	3779

The direct income contribution of Artvin Coruh University on the city economy of Artvin is 38.863.944 TL and the indirect income contribution is 58.257.830,67 TL. The direct contribution of university on local employment is 718 person and indirect contribution of university is 526 persons.

According to the results of econometric analysis which made for to determine induced contributions in the study, while marginal propensity to consume was 83.3 percent until 2001Q1 period, it became the level of 0.768 from the period of structural break to the end of analysis period. However, while the value of marginal propensity to consume is seen as insignificant statistically until the 2001Q1 period when structural break happened, the value of marginal propensity to consume is seen as significant statistically after structural break. For this reason, the value of marginal propensity to consume (0.768), which is statistically significant, has been used for the calculation of Artvin Coruh University’s induced income and employment contributions on the city economy of Artvin. Considering this value, calculated multiplier coefficient is 4.31. Based on calculated multiplier coefficient, acquired induced income and employment contributions are in order of 418.591.849 TL and 3779 persons.