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Is logistics transport development impacted by human resource: the Ho Chi Minh case

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Abstract: Human resources always play an important role in the operation of business organizations. In addition, the gender issues, qualifications and training career stronglyimpact on the productivity and growth of the organizations. This paper has objective is to assess the impact of human resources, gender, qualification and training career on logistics transport industry, by using multivariate regression (MR), the case of Ho Chi Minh, Vietnam (HCM). The highlight findings are total number of labour force, total number of female labour force, total number of labour force who have been career trained and total number of labour force have been graduated high school impact on goods productivity calculated on total number of employees. While total number of labour force and total number of labour force have been graduated high school impact, total number of female labour force and total number of labour force who have been career trained do not impact on passenger productivity calculated on total number of employees. While total number of female labour force, total number of labour force who have been career trained and total number of labour force have been graduated high school impact, total number of labour forcedoes not impact on goods productivity calculated on total capital. While total number of labour force and total number of labour force have been graduated high school impact, total number of female labour force and total number of labour force who have been career trained do not impact on gross domestic products.

Key words: Human resource, female labour, logistics, transport, development, HCM, Ho Chi Minh City, Vietnam.

I. Introduction

Human resources include all the people who have been working in an organization or enterprise in all different positions. They are the main force involved in the activities of the organization, which are the important subjects in creating and promoting the strengths of the business. For any organization, human resources are also the most necessary and important resource that they have a decisive role in the profit and development of the company. An enterprise, a business organization, a firm or a company that wants to operate and develop stably must have the contribution to human resources in order to increase the success of an organization.

In the past few years, human resource management has undergone significant changes. However, human resources always have a significant impact on the business operation especially the business effectiveness. Human resources involved in almost departments on the business enterprises which are from administrative tasks to become strategic partners into the organization's overall strategy (Ying He, Ming Li, 2021).The responsibilities of a human resource manager in addition to caring for their business, how to control and develop human resource is very important. It is given that there are 5 areas of human resource management: (1) professional accreditation and professional development, (2) exten- sion activities, (3) the role of the advisor, (4) standard operating procedures, and (5) employee training (Katelyn E. Mills, Daniel M. Weary, Marina A. G. von Keyserlingk, 2020). According to Stefan Gerlach, Moritz Hämmerle, Sven Schuler (2019), "Human resource flexibility has to reflect manifold demands, influences and stakeholders, each with individual and different criteria. The rational is not to implement the highest possible human resource flexibility, but to find a solution with the most appropriate flexibility, which reflects the requirements exactly and, at the other hand, avoids costs for an unnecessary or wrong flexibility".
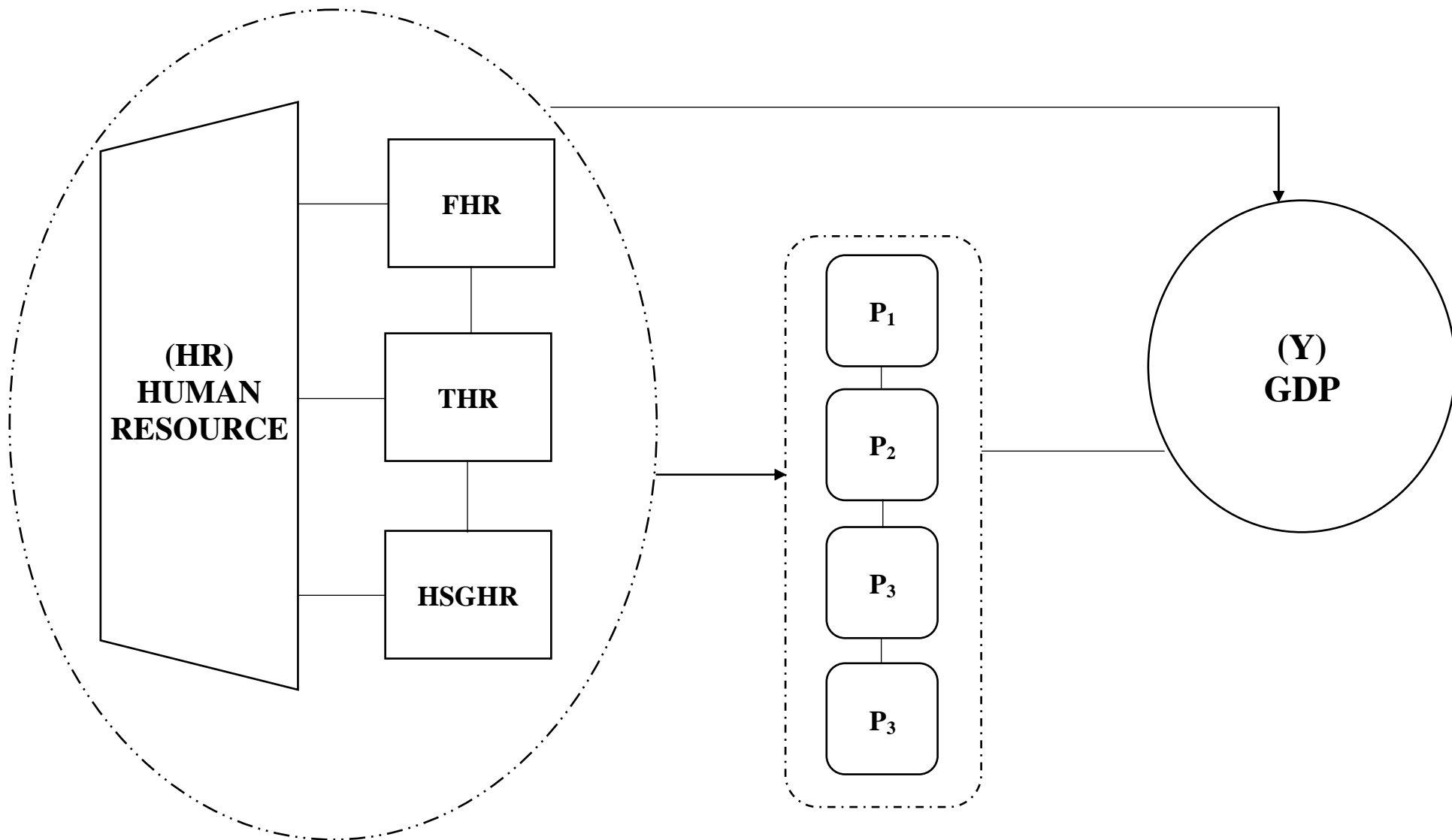
This objective of this paper wants to assess the impact of human resources on logistics transport development, the case of HCM. The study model has four independent variables of human resource, there are five dependent variables which are labour goods productivity, labour passenger productivity, capital goods productivity, capital passenger productivity and gross domestics products. Paper has seven sections included introduction (1), literature review (2), methodology (3), data source (4), study results (5), discussion (6) and conclusion (7).

II.   Literature review

Patricia A. McManus, Kaitlin Johnson (2019) stated that "Women enter the paid workforce in unprecedented numbers in the 20th century". Female labor force participation is identified by the world economy has. The female labor force increases whenever trade expands in areas that are high in female workers (Philip Saure´, Hosny Zoabi, 2014). German Cubas (2016) said that "Women begin to participate more in the labour market of developing countries". In Egypt, the female workforce creates benefit for micro and small businesses and export businesses. The industries that correctly determine the value of female labor demand have shown their roles. In addition, the number of women employed in industrial enterprises is higher than in export enterprises and in high-tech industries (Hanan Nazier, 2020). As in study of Mizuki Kawabata, Yukiko Abe (2018) that "In Japan, the rate of employment who are married decreases forlong and continuousjobs, while for unmarried women and without children, participation in the labour market is much higher in general. Women who are mothers with a high level of education are particularly sensitive to working hours". In China, the labor force who is married women and/or mother-in-law do not work is 5 to 18 percentage points lower than women whose husbands and or mothers-in-law work in the urban region (Xi Chen, Suqin Ge, 2018). A 10% increase in female labor force participation will lead to an increase in housing values of about 12.5% (Mahmoud Salari, Roxana J. Javid, 2019). According to Jelena Stankovic, Nikola Makojevic, Vesna Jankovic-Milic et al., (2014) that "There is a positive correlation between the proportion of female employees and employers' perceptions of the quality of the workforce. Whereby a 1% increase in the percentage of female employees has increased the rate of additional job quality by 0.439". Shinya Sugawara, Jiro Nakamura (2014) stated that "In Japan, as a result of long-term care insurance, the caring for the elderly male is no longer an obstacle to the supply of female labour". The property tax cap reduces female labor force participation by 0.7 to 1.4 percentage points during the housing boom of 2005–2006 (Shimeng Liu, Xiyang, 2020). Bilge Erten, Martina Metzger (2019) gave that "There is a positive impact of low currency valuations on female labor force in developing countries. Therefore, competitive exchange rate policies are not only important for enhancing long-term growth potential but also for reducing long-term gender disparities in labour force participation". According to Sadia Priyanka (2020), "In India, exposure to young female politicians leads to a large increase in the probability of women working in salaried jobs, especially from areas that are less gender-biased, but there is a negative impact on women. Limited effect on self-employment or ordinary employment. There is a corresponding increase in the likelihood of completing secondary education and entry into sales, service and clerical careers in the private sector, which require higher education". In order to develop human resources, the strategies included flexibility, strengthening internal efficiency, talent acquisition, and making innovative changes based on organizational assessment have to be run smooth business activities. The appropriate human resource management strategies implementations would increase employees' mental well-being, satisfaction, productivity, motivation, and health safety at the workplace (Mohammad Reza Azizi, RashaAtlasi, ArashZiapour et a., 2021). The institutional labour regulations and competitive like pressure from imports, contexts that a business enterprise operates will affect the relationship between human resources policies and innovation, albeit in different ways (Sorin M.S.Krammer, 2021). Technological turbulence reinforces the positive impact of green recruitment and selection on green team creativity and dampens the positive impact of green training, involvement and development on green team creativity. Furthermore, green team creativity is a complementary and competitive mediator. The extend traditional human resources management conceptualisations to reflect a more environmentally sustainable green human resources management framework (Samuel Ogbeibu, Jude Emelifeonwu, AbdelhakSenadjki et al., 2020). As in study of Yong Joong Kim, Woo Gon Kim, Hyung-Min Choi et al., (2019) that "The findings show that green human resource management enhances employees' organizational commitment, their eco-friendly behavior, and hotels' environmental performance. This study suggests that hotel top management and HR managers should establish green human resource management policies".

III. Methodology
3.1. Study model.

3.2. Variables of study model.

Independent variables.

HR is total number of labour force of logistics transport industry (LTI), unit is people.

FHR is total number of labour force who are female, unit is percent.

$$FHR = \frac{\text{Total number of female labour force of logistics transport industry}}{HR}$$

THR is total number of labour force who have been career trained.

$$THR = \frac{\text{Total number of labour force have been career trained of LTI}}{HR}$$

HSGHR is total number of labour force who have been graduated high school, unit is percent.

$$HSGHR = \frac{\text{Total number of labour force have been graduated high school of LTI}}{HR}$$

Dependent variables:

P_1 is productivity of goods which calculated on total number of employees.

$$P_1 = \frac{\text{Total volume of goods of LTI have been transported}}{\text{Total number of human resource of LTI}}$$

P_2 is productivity of passenger which calculated on total number of employees.

$$P_2 = \frac{\text{Total volume of passenger of LTI have been transported}}{\text{Total number of human resource of LTI}}$$

P_3 productivity of goods which calculated on total capital.

$$P_3 = \frac{\text{Total volume of goods of LTI have been transported}}{\text{Total capital of LTI}}$$

P_4 productivity of passenger which calculated on total capital.

$$P_4 = \frac{\text{Total volume of passenger of LTI have been transported}}{\text{Total capital of LTI}}$$

Y is Gross domestic products.

According to International Monetary Fund, "GDP measures the monetary value of final goods and services—that is, those that are bought by the final user—produced in a country in a given period of time (say a quarter or a year). It counts all of the output generated within the borders of a country. GDP is composed of goods and services produced for sale in the market and also includes some nonmarket production, such as defence or education services provided by the government. An alternative concept, gross national product, counts all the output of the residents of a country. So, if a German-owned company has a factory in the United States, the output of this factory would be included in U.S. GDP, but in German GNP"

3.3. Multivariate regression model.

$$P_1 = w_0 + w_1 HR + w_2 FHR + w_3 THR + w_4 HSGHR + j \qquad (1)$$

$$P_2 = w_0 + w_1 HR + w_2 FHR + w_3 THR + w_4 HSGHR + j \qquad (2)$$

$$P_3 = w_0 + w_1 HR + w_2 FHR + w_3 THR + w_4 HSGHR + j \qquad (3)$$

$$P_4 = w_0 + w_1 HR + w_2 FHR + w_3 THR + w_4 HSGHR + j \qquad (4)$$

$$Y = w_0 + w_1 HR + w_2 FHR + w_3 THR + w_4 HSGHR + j \qquad (5)$$

Where

w_0 is the intersection of vertical axis and lines of regression.

j is other variables are not HR, FHR, THR, HSGHR that this paper skips.

Based on Keshab Bhattarai (2015, p. 55) and Jeffrey M. Wooldridge (2020, p. 126), where.

$w_0 + w_1 + w_2 + w_3 + w_4 = 0$ is defines MR models of (1), (2), (3), (4) and (5) have not been built suitably to the input data and they do not have statistics significance.

$w_0 + w_1 + w_2 + w_3 + w_4 \neq 0$ is defines MR models of (1), (2), (3), (4) and (5) have been built suitably to the input data and they have statistics significance.

$w_0 + w_1 + w_2 + w_3 + w_4 > 0$ which ismeant that HR, FHR, THR, HSGHRimpact on P_1, P_2, P_3, P_4, Y, respectively and separately.

$w_0 + w_1 + w_2 + w_3 + w_4 < = 0$ which is meant that HR, FHR, THR, HSGHRdo not impact on onP_1, P_2, P_3, P_4, Y, respectively and separately.

IV.   Data source

Time series data between 2010 and 2020. Data of P_1, P_2, P_3, P_4, Y, HR, FHR are from HCM Statistics Department and HCM Statistical Yearbook.Data of THR andHSGHRare from Provincial Competitiveness Index of Vietnam.

V.   Study results

Table 1: MR results of models $P_1(1)$, $P_2(2)$ and $P_3(3)$

$P_1= w_0 + w_1HR+ w_2FHR+ w_3THR + w_4HSGHR$ (1)				$P_2= w_0 + w_1HR+ w_2FHR+ w_3THR + w_4HSGHR$ (2)				$P_3= w_0 + w_1HR+ w_2FHR+ w_3THR + w_4HSGHR$ (3)			
R square (RS)		0.86679008 (87%)		R square (RS)		0.70239917 (70%)		R square (RS)		0.60156925 (60%)	
Adjusted R Square (ARS)		0.77798347 (78%)		Adjusted R Square (ARS)		0.50399862 (50%)		Adjusted R Square (ARS)		0.33594876 (34%)	
Significance F (SF)		0.00851053		Significance F (SF)		0.08189762		Significance F (SF)		0.17739695	
Independent variables	Coefficients	Value of Coefficients (VC)	P-Value (PV)	Independent variables	Coefficients	Value of Coefficients (VC)	P-Value (PV)	Independent variables	Coefficients	Value of Coefficients (VC)	P-Value (PV)
	w_0	-0.7805854	0.04643571		w_0	0.03640487	0.53853822		w_0	-0.6456889	0.18360608
HR	w_1	4.6533E-06	0.21655387	HR	w_1	1.2479E-06	0.08391316	HR	w_1	-6.338E-07	0.89582182
FHR	w_2	0.47640231	0.44217056	FHR	w_2	-0.0147622	0.8913722	FHR	w_2	0.51700267	0.54076925
THR	w_3	1.05058129	0.19192323	THR	w_3	-0.030773	0.81781767	THR	w_3	1.38318837	0.2094353
HSGHR	w_4	0.15349118	0.03935501	HSGHR	w_4	0.00108623	0.92070993	HSGHR	w_4	0.14710078	0.11755084

$P_1 = w_0 + w_1 HR + w_2 FHR + w_3 THR + w_4 HSGHR$ (1)

RS = 0.86679008 (87%), ARS = 0.77798347 (78%), ARS = 78% is define the input data has been explained by output at 78%. $w_o + w_1 + w_2 + w_3 + w_4 = 0.899894079 \neq 0$. And PV including $w_o = 0.04643571$, $w_1 = 0.21655387$, $w_2 = 0.44217056$, $w_3 = 0.19192323$, $w_4 = 0.03935501$ which are the evidence that MR model has been builtsuitablyto input data andhas statistics significance at 0.00851053.

Coefficientsof $w_1 = 4.6533E\text{-}06$, $w_2 = 0.47640231$, $w_3 = 1.05058129$, $w_4 = 0.15349118$ which are all > 0, that meansHR, FHR, THR, HSGHR impact on P_1

$P_2 = w_0 + w_1 HR + w_2 FHR + w_3 THR + w_4 HSGHR$ (2)

RS = 0.70239917 (70%), ARS = 0.50399862 (50%), ARS = 50% is define the input data has been explained by output at 50%. $w_o + w_1 + w_2 + w_3 + w_4 = -0.008042859 \neq 0$. And PV are $w_o = 0.53853822$, $w_1 = 0.08391316$, $w_2 = 0.8913722$, $w_3 = 0.81781767$, $w_4 = 0.92070993$ which are the evidence that MR model has been built suitably to input data and has statistics significance at 0.08189762.

Coefficientsof $w_1 = 1.2479E\text{-}06$, $w_4 = 0.00108623$ which are > 0, that shows HRand HSGHR impact on P_2

Coefficientsof $w_2 = -0.0147622$, of $w_3 = -0.030773$ which are < 0, that shows FHRand THR do not impact on P_2

$P_3 = w_0 + w_1 HR + w_2 FHR + w_3 THR + w_4 HSGHR$ (3)

RS = 0.60156925 (60%), ARS = 0.33594876 (34%), ARS = 34% is define the input data has been explained by output at 34%. $w_o + w_1 + w_2 + w_3 + w_4 = 1.401602277 \neq 0$. And PV are

$w_o = 0.18360608$, $w_1 = 0.89582182$, $w_2 = 0.54076925$, $w_3 = 0.2094353$, $w_4 = 0.11755084$ which are the evidence that MR model has been built suitably to input data and has statistics significance at 0.08189762.

Coefficientsof $w_2 = 0.51700267$, $w_3 = 1.38318837$, $w_4 = 0.14710078$, that shows FHR, THR and HSGHRimpact on P_3

Coefficientsof $w_1 = -6.338E\text{-}07$, that shows HRdoes not impact on P_3

Table 2: MR results of models P_4 (4) and Y(5)

P_4= w_0 + w_1HR+ w_2FHR+ w_3THR + w_4HSGHR (4)				Y= w_0 + w_1HR+ w_2FHR+ w_3THR + w_4HSGHR (5)			
R square (RS)	0.10037706 (10%)			R square (RS)	0.98542777 (99%)		
Adjusted R Square (ARS)	-0.4993716 (-50%)			Adjusted R Square (ARS)	0.97571295 (98%)		
Significance F (SF)	0.94733296			Significance F (SF)	1.22424E-05 (0.0000122)		
Independent variables	Coefficients	Value of Coefficients (VC)	P-Value (PV)	Independent variables	Coefficients	Value of Coefficients (VC)	P-Value (PV)
	w_0	0.05041695	0.4773585		w_0	-82543.74	0.01189493
HR	w_1	2.8259E-07	0.70773573	HR	w_1	2.40693612	7.2258E-05
FHR	w_2	-0.0085397	0.94711745	FHR	w_2	-16220.423	0.71901129
THR	w_3	0.01132298	0.94318553	THR	w_3	-74901.602	0.20778877
HSGHR	w_4	0.00224201	0.86325943	HSGHR	w_4	10260.7794	0.05608601

$P_4 = w_0 + w_1HR + w_2FHR + w_3THR + w_4HSGHR$ (4)

RS = 0.10037706 (10%), ARS = -0.4993716 (-50%), ARS is -50% is to mean that the input data has not been able to be explained by the output result of the regression model, this is evidence to have conclusion is MR model (4) has not built suitably to input data and it does not have statistical significance.

$Y = w_0 + w_1HR + w_2FHR + w_3THR + w_4HSGHR$ (5)

RS = 0.98542777 (99%), ARS = 0.97571295 (98%), ARS = 98% is define the input data has been explained by output at 898%. $w_0 + w_1 + w_2 + w_3 + w_4 = -163402.5782 \neq 0$. And PV including w_0, w_1, w_2, w_3, w_4 are 0.01189493, 7.2258E-05, 0.71901129, 0.20778877, 0.05608601, respectively which are the evidence that MR model has been built suitably to input data and has statistics significance at 1.22424E-05 (0.0000122).

Coefficientsof w_1 = 2.40693612, w_4 = 10260.7794 that is HR and HSGHR impact on Y. Coefficientsof w_2 = -16220.423, w_3 = -74901.602 that is FHR and THRdo not impact on Y.

VI.   Discussion

MR models P_1 (1), P_2 (2), P_3 (3) and Y(5) has statistical significance at the SF level are 0.00851053, 0.08189762, 0.17739695, 1.22424E-05 (0.0000122), respectively. Model P_4 (4) has ARS = -50% is to mean MR model has not built suitably to input data and it does not have statistical significance. Therefore, (HR) w_1= 4.6533E-06, (FHR) w_2 = 0.47640231, (THR) w_3 = 1.05058129, (HSGHR) w_4= 0.15349118 impact on (P_1) productivity of goods which calculated on total number of employees. While(HR) w_1= 1.2479E-06 and (HSGHR) w_4= 0.00108623 impact, (FHR)w_2= -0.0147622 and (THR) w_3= -0.030773 do not impact on (P_2) productivity of passenger which calculated on total number of employees. While (FHR) w_2= 0.51700267, (THR) w_3 = 1.38318837 and (HSGHR) w_4 = 0.14710078 impact, (HR) w_1= -6.338E-07does not impact on (P_3) productivity of goods which calculated on total capital. While (HR) w_1 = 2.40693612 and (HSGHR)w_4 = 10260.7794impact, (FHR) w_2 = -16220.423 and (THR) w_3 = -74901.602 do not impact on (Y) Gross domestic products.

VII.   Conclusion

From study result shown in section 6 and discussion in section 7, the conclusion is below:

    (HR) total number of labour force, (FHR) total number of female labour force, (THR) total number of labour force who have been career trained and (HSGHR) total number of labour force have been graduated high school impact on (P_1) productivity of goods which calculated on total number of employees.

    While (HR) total number of labour force and (HSGHR) total number of labour force have been graduated high school impact, (FHR) total number of female labour force and (THR) total number of labour force who have been career trained do not impact on (P_2) productivity of passenger which calculated on total number of employees.

    While (FHR) total number of female labour force, (THR) total number of labour force who have been career trained and (HSGHR) total number of labour force have been graduated high school impact, (HR) total number of labour forcedoes not impact on (P_3) productivity of goods which calculated on total capital.

    While (HR) total number of labour force and (HSGHR) total number of labour force have been graduated high school impact, (FHR) total number of female labour force and (THR) total number of labour force who have been career trained do not impact on (Y) Gross domestic products.

Reference

[1.]   Patricia A. McManus, Kaitlin Johnson, 2019. Female Labor Force Participation in the US: How is Immigration Shaping Recent Trends?. Social Science Research. https://doi.org/10.1016/j.ssresearch.2019.102398.

[2.]   Philip Saure´, Hosny Zoabi, 2014. International Trade, the Gender Wage Gap and Female Labor Force Participation. Journal of Development Economics. https://doi/org/10.1016/j.jdeveco.2014.07.003.

[3.]   German Cubas, 2016. Distortions, infrastructure, and female labor supply in developing countries. European Economic Review 87 (2016) 194–215. http://dx.doi.org/10.1016/j.euroecorev.2016.05.006.

[4.]   Hanan Nazier, 2020. Female labor in Egyptian manufacturing sector: The demand side story. The Quarterly Review of Economics and Finance xxx (2020) xxx–xxx. https://doi.org/10.1016/j.qref.2020.01.012.

[5.] Mizuki Kawabata, Yukiko Abe, 2018. Intra-metropolitan spatial patterns of female labor force participation and commute times in Tokyo. Regional Science and Urban Economics 68 (2018) 291–303. https://doi.org/10.1016/j.regsciurbeco.2017.11.003.

[6.] Mahmoud Salari, Roxana J. Javid, 2019. How does female labor force participation impact on housing values?. Research in Economics 73 (2019) 129–137. https://doi.org/10.1016/j.rie.2019.03.002.

[7.] elena Stankovic, Nikola Makojevic, Vesna Jankovic-Milic và cộng sự, 2014. The female labour force in an urban economy during transition: A view from the City of Nis. Cities 42 (2015) 109–117. http://dx.doi.org/10.1016/j.cities.2014.10.006.

[8.] Shinya Sugawara, Jiro Nakamura, 2014. Can formal elderly care stimulate female labor supply? The Japanese experience. J. Japanese Int. Economies 34 (2014) 98–115. http://dx.doi.org/10.1016/j.jjie.2014.05.006.

[9.] Shimeng Liu, Xi Yang, 2020. Property tax limits and female labor supply: Evidence from the housing boom and bust. Journal of Housing Economics 50 (2020). 101714. https://doi.org/10.1016/j.jhe.2020.101714.

[10.] Bilge Erten, Martina Metzger, 2019. The real exchange rate, structural change, and female labor force participation. World Development 117 (2019) 296–312. https://doi.org/10.1016/j.worlddev.2019.01.015.

[11.] Sadia Priyanka, 2020. Do female politicians matter for female labor market outcomes? Evidence from state legislative elections in India. Labour Economics 64 (2020) 101822. https://doi.org/10.1016/j.labeco.2020.101822.

[12.] Mohammad Reza Azizi, RashaAtlasi, ArashZiapour et a., 2021. Innovative human resource management strategies during the COVID-19 pandemic: A systematic narrative review approach. Heliyon 7 (2021) e07233.

[13.] Katelyn E. Mills, Daniel M. Weary, Marina A. G. von Keyserlingk, 2020. Graduate Student Literature Review: Challenges and opportunities for human resource management on dairy farms. J. Dairy Sci. 104:1192–1202. https://doi.org/10.3168/jds.2020-18455.

[14.] Ying He, Ming Li, 2021. Human resource management structure of communication enterprise based on microprocessor system and embedded network. Microprocessors and Microsystems. Volume 81, March 2021, 103749.

[15.] Sorin M.S.Krammer, 2021. Human resource policies and firm innovation: The moderating effects of economic and institutional context. Technovation. Available online 2 August 2021, 102366.

[16.] Stefan Gerlach, Moritz Hämmerle, Sven Schuler, 2019. Patterns for Analysis of Human Resource Flexibility in Manufacturing. Procedia Manufacturing 39 (2019) 947–955.

[17.] Samuel Ogbeibu, Jude Emelifeonwu, AbdelhakSenadjki et al., 2020. Technological turbulence and greening of team creativity, product innovation, and human resource management: Implications for sustainability. Journal of Cleaner Production. Volume 244, 20 January 2020, 118703.

[18.] Yong Joong Kim, Woo Gon Kim, Hyung-Min Choi et al., 2019. The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. International Journal of Hospitality Management. Volume 76, Part A, January 2019, Pages 83-93.