A COMPARATIVE STUDY ON HOUSEHOLD EDUCATIONAL EXPENDITURE IN PAKISTAN: A MESSAGE FORWARD

Hazrat Yousaf
Assistant Professor
Department of Economics, Lasbela University of Agriculture,
Water and Marine Sciences (LUAWMS), Uthal,
Balochistan, Pakistan
Email: dr.yousaf@luawms.edu.pk

Parvez Ahmed Shaikh
Research Scholar
Department of Economics, Lasbela University of Agriculture,
Water and Marine Sciences (LUAWMS), Uthal,
Balochistan, Pakistan
Email: ahmed.eco@luawms.edu.pk

Mahjabeen Zehri
Department of Economics, Lasbela University of Agriculture,
Water and Marine Sciences (LUAWMS), Uthal,
Balochistan, Pakistan
Email: mahjabeen.eco@luawms.edu.pk

ABSTRACT

This comparative study aims to examine household educational expenditure in Pakistan. The data was collected from Pakistan household budget surveys 2013-14, 2015-16 and 2018-19. To meet the objectives of study, descriptive, two sample t-test and Working-Leser model through econometric regression were performed for the confirmation of hypotheses. Results of the study show that educational expenditure increased from US$213.29 household^{-1} in 2013-14 to US$280.94 household^{-1} in 2015-16 and there is obtained slightly increased in educational expenditure (i.e., from US$280.94 household^{-1} to US$281.06 household^{-1}) from 2015-16 to 2018-19. A significant increase in household educational expenditure in Sindh and Khyber Pakhtunkhwa provinces obtained while educational expenditure of households belongs to Balochistan decreased (i.e., from US$211. 94 household^{-1} in 2015 to US$128.76 household^{-1} in 2018). There is obtained positive and statistically significant impact of logarithm income on budget shares of education. Education expenditure elasticity turns out greater than one, which advocates households treat education as expensive one. Findings of study reveals that expenditure on fees and books accounts for more than 80 per cent share of household total educational expenditure. Keeping in view the findings of study, some lucrative policies are recommended for educational development at household level in Pakistan.

KEYWORDS
Household, educational expenditure, Pakistan, Working-Leser model, Two-Sample t-test

INTRODUCTION

Educational development is considered a key component to enhancing productivity, it promotes new ideas and innovations, which consequently raises the efficiency of the workforce and boost up economic growth (Wongmonta & Glewwe, 2017; Yang et al., 2014). For sustained economic growth, investment towards human capital, particularly in education is unavoidable to combat inclusive and exclusive economic challenges faced by any country (Evidences, 2011; Gamlath & Lahiri, 2017). Provision of educational facilities has been ensured by the maximum number of countries, while facilities at a grass root level is still an unresolved question in much of the underdeveloped countries due to financial constraint, poor management, and less attention by federal and local authorities(Singh & Shastri, 2020).

Many developing and less-developed countries suffer from high levels of income inequality and poverty and it lead to greater variability in the allocation of educational resources across households(Abdelbaki, 2012; Basuki et al., 2019; Costa & Gartner, 2017). These factors aren't only shrinking the federal and local government's budget share of education in total budget, but also responsible for impeding household expenditure on education. Many other factors, for example, high level of inflation, gender inequalities, and regional differences in terms of job opportunities, unemployment, political instability and high fee in private sector educational institutions make variability in education expenditure (Afzal et al., 2012; Kuvat & Kizilgol, 2020; Pallegedara & Kumara, 2020)

Sustainable development goals are attached to educational development and particularly Goal 4 is posturing the promotion of educational development, both in terms of quality and quantity (Sial et al., 2020). Provision of quality education in the perspective of Pakistan, the Government of Pakistan has committed educational development as well as the accomplishment of United Nation 17 Sustainable Development Goals by 2030. In this regard education, related expenditure was seen to increase by 4.7 per cent in 2018-19. And an amount of Rs.4.8 billion for 11 on-going and 21 new development projects allocated in 2019-20 under the Federal, Pakistan Social Development Program (Government of Pakistan, 2019). Furthermore, an amount of Rs.29.047 billion has been allocated to the Higher Education Commission for 128 on-going and 10 new projects for public sector universities in the country.

Pakistan has been blessed with an opportunity that about 60 per cent of the total population lies between the ages of 15-64 years. If serious attention in terms of human capital may be given to this group, it can play a pivotal role in higher economic growth. Pakistan has the 9th largest labor force in the world, and it is the 2nd largest manpower/ labor exporting country in South Asia. The foreign remittance contributed from the exporting of manpower/labor was US$ 21.73 billion in 2018-19 (Government of Pakistan, 2019). The foreign remittances play a positive role in economic stability and strengthen the well-being of the household sector. Educational development of the household member is one of the key factors for occupying a better station in the world labor market (Suhaimi & Ghani, 2020). The world labor market demands workers which are sound in terms of technical know-how because it is one of the factors for boosting productivity, efficiency, and economic growth(Acemoglu, 2009; Barro & Lee, 2013; Tsaurai, 2018; Yun & Yusoff, 2019). Investment in human capital development particularly education and health leads a positive contribution to economic growth and

alleviating poverty(Akca et al., 2017; Bischoff & Prasetyia, 2019; Hooda, 2015; Pallegedara & Sisira, Kumara, 2020). As an important component of education investment, the household budget allocation has a larger influence on children education and human capital accumulation(Song & Zhou, 2019). Inequality in household education expenditure leads to create a larger inequality in children's education outcomes(Amankwah et al., 2018; Aslam & Kingdon, 2008; Chi & Qian, 2016). It has been obtained crowed out the effect of a larger investment in children's education on other types of household consumptions which may reduce living standard of household and expand social inequality within a region(Chi & Qian, 2016; Sarma & Pais, 2008). This study covers a comparative study on household educational expenditure for overall Pakistan and provinces of Pakistan while utilizing a household budget survey dataset.

LITERATURE REVIEW
Many empirical studies in developed and developing countries have been investigated in household expenditure on education in connection to socioeconomic, political, and geographical factors. Various models with diverse data sets have been used in pursuing the objectives of studies. For this study first, we summarize the most cited readings in the light of international literature and then will summarize the literature on the prescribed topic in the case of Pakistan.

Askarov & Doucouliagos (2020) examine the effect of remittances on household education expenditure. The finding confirms that foreign remittances have been found a larger source of the increase in educational expenditure at the household level with contrast to domestic remittances. Households treat equally males and females in terms of education expenditure.

Kuvat & Ayvaz (2020) analyze the data set of the Turkey household budget survey 2017 to examine the out-of-pocket households' expenditure on education. The findings confirm that income, household head educational level, and the personal house is the vital determinants for education expenditure while the factors impact is positive on household education expenditure. Household size enlargements and lower access to education are co-related to reduce the out-of-pocket expenditure of the household.

Khalili et al., (2020) examine the effect of drought on small farm household education expenditure for province Fars, Iran. The negative relationship obtains between small farm household education expenditure and income. The less proportional effects of income on education expenditure obtains. There is no bias obtains in boys' and girls' school-level educational expenditure, but at university level education expenditure, it obtains. The households are likely to halt females while encouraging males for higher degree educational attainment.

Acerenza & Gandelman (2019) estimate Latin America and the Caribbean households' education expenditure by using the micro data for the year 2013. Findings confirm that highest ratio of household education spending utilizes in Bahamas, Chile, and Mexico and the lowest in Bolivia, Brazil, and Paraguay. The households with female heads and income earners are likely to spend more on education and vice-versa. Urban households spend more than rural households on education. Education is a luxury for Latin American and Caribbean households while it turns necessity for households belong to United States.

Jenkins et al., (2019) investigate the core issue of family decision making on educational expenditure. The findings confirm that age, household head education, income, and residence status of the family have a significant impact on education expenditure. Family decision making on educational expenditure is more sensitive with income changes. Lower educational level of household heads, income, and residency in rural areas has a stronger negative effect of inequality of opportunity on education expenditure. The negative impact of inequality of opportunity on education expenditure obtains.

Song & Zhou (2019) use the Panel data of China to examine the relationship between household education expenditure and inequality of opportunity. It confirms that lower educational level of household heads, income, and residency in rural areas has a stronger negative effect of inequality of opportunity on education expenditure. A negative effect of inequality of opportunity on education expenditure obtains.

Abbam(2018) examines the relationship of variables income, poverty, female with household head, and locality / area with the education expenditure for Ghana households. Results confirms a negative impact of poverty on education expenditure. Households with female heads are likely to spend more on education and locality also plays a fundamental role in the determinant for educational expenditure.

Iddrisu et al., (2018) analyze the Living Standards Survey 2012-13 for the state of Ghana to examine household education expenditure. Households are likely spent on education for boys and girls at the same proportion at primary level education. Ghana households are unlikely to spend more on a female at higher-level education. Ebaidalla (2018) uses the dataset of the National baseline household survey 2009, Sudan. The findings confirm that household income, head education level, head age, household size, number of school-age children, and residence status are the key determinants for education expenditure. Urban households are keener to invest in educational expenditure than rural households. Similarly, the positive effect of head education and urban residence status on education expenditure obtains.

Acar et al.,(2016) investigate the determinants of household education expenditure in Turkey. The findings compile by using 2003, 2007, and 2012 household budget surveys and the Engel curve. Findings suggest that the elasticity of education expenditure for all income groups increases over time. Bayar & Yanik(2016) examine the determinants of household education expenditures in Turkey. Households with higher income groups spend more on education as compared to the poor ones. Education expenditures of poor households are more sensitive to income changes.

Chi & Qian(2016) used the China household education surveys, 2007 and 2011 to examine household education expenditure. The disproportional relationship between educational expenditure and income obtains. The income-wise comparison shows that the poor allocate more budget than the richer. Besides, an increasing trend has been accomplished in overall households' educational expenditure. Kenayathulla(2016) examines gender differential in intra-households' educational expenditure for Malaysia. The finding confirms little biasness in-household educational expenditure for boys' and girls' educational attainment. There are no intra-households' differences in educational expenditure. As such, an increase in income and household size leads to an increase in

educational expenditure at the household level because these factors have a positive and statistically significant effect on education expenditure at the household level.

A very recent study by Sial et al., (2020) investigate the household sector education expenditure determinants into four provinces of Pakistan. The data set used in the study is the household budget survey 2013-14 and the lognormal hurdle model is applied for the results. They found a disparity in income spending impact in four provinces. The positive impact of educational awareness and number of school-going children on household expenditure on education obtains. Households whose heads are female spend more on their children's education than male heads households. Urban households are likely to spend more than rural households on education. Similarly, household's education expenditure is less sensitive to income changes.

Sarwar et al., (2019) utilize the Pakistan Social and Living Standards Measurements survey for the data set 2013-14 to estimate various factors impact on investment in education at the household level. An inverted U-relationship between investment in education and household total income obtains. In addition, household head education level, number of school children, age, and residence of households are the key factors for determining investment in the education sector in Pakistan.

Devi & Devi (2014) investigate determinants of school enrolment in Pakistan, using PSLM 2010/11 data set and binary model. An inverted U-shaped relationship between school enrolment and the age of children. The effect of remittances and land ownership is much positive on female school enrolment. Distance from home to school and income poverty are responsible for reducing female school enrolment. Educated households are spent on education as compared to uneducated households.

Ahmed & Amjad(2014) use the Privatization in Education Economics Initiative school choice dataset 2007 and 2011. This data survey was compiled by the Lahore School of Economics in collaboration with the Punjab Bureau of Statistics. It confirms that parents' perception plays a significant role in school choice for children. Households with higher income levels have easy access to private schools as compared to poor income level households.

The review of the above-discussed literature shows that a comparative study on household educational expenditure has not been subjected to empirical investigation. This study expands existing literature by analyzing household educational expenditure using descriptive statistics, a two-sample t-test, and the Working-Leser model, respectively. This study will provide some policy suggestions for educational development at the household level in Pakistan.

RESEARCH OBJECTIVE
1. To investigate households' expenditure on components of education in Pakistan and four provinces of Pakistan.
2. To estimate mean education expenditure between provinces of Pakistan.
3. To estimate the impact of income on budget share of education in Pakistan.

RESEARCH QUESTIONS

1. What is the scenario of household expenditure on components of education over time in Pakistan?
2. Is there significant difference in mean education expenditure between provinces of Pakistan?
3. What is the impact of income on household educational budget share in Pakistan?

RESEARCH METHODOLOGY

The data of Pakistan household budget surveys of the years 2013-14, 2015-16, and 2018-19 were used. The Pakistan household budget survey is compiled by Pakistan Bauru of Statistics, where information related to household budget allocation to food and non-food, education and health, information related to household demographic characteristics, occupation, employment status of household members are collected.

To perform a comparative study on household education expenditure in the case of Pakistan, the three steps procedures are used. To check variability in household education expenditure overtime, the descriptive statistics in terms of the percentage of households' expenditure on components of education as well as the mean value of education expenditure are performed at the first step. The two-sample t-test is performed in the second step to test the hypothesis that there is no significant difference in mean education expenditure between households of provinces. The two-sample t-test according to George & Mallery(2018) is expressed as follow:

$$t = \frac{(\overline{x_i} - \overline{x_j})}{\sqrt{var_i + var_j}}$$

Where, $\overline{x_i}$ and $\overline{x_j}$ are the mean budget shares of education of province i and j, respectively. The denominator terms in square root var_i and var_j are the variances of budget share of education of province i and j, respectively.

In the third step, the econometric regression analysis is performed while using the Working-Leser model for the impact of logarithm income on the budget share of education. Thus, the Working-Leser model in term of using the budget share of education as the dependent variable is expressed as follow:

$$w_{household\ education} = \beta_0 + \beta_1\ log(m) + \varepsilon$$

Where, $w_{household\ education}$ is household budget share of education; m is total income/expenditure of household and ε is the error term. The β_0 and β_1 are parameters whose values estimate from the data of household budget share of education and logarithm income. In case of the Working-Leser model, $\beta_1 > 0$ shows an increase in logarithm income increases household budget share of education and $\beta_1 < 0$ shows an increase in logarithm income reduces household budget share of education (Khanal et al., 2018). Total expenditure instead of total income uses, this is because total expenditure is a reliable proxy for permanent income(Gibson & Kim, 2013; Siddique et al., 2019). The separate regressions perform for overall Pakistan and each province while considers households having positive education expenditure. The separate regressions estimate to see differences in results in terms of income effect on education expenditure. In addition, using the methods of Castaldo & Reilly (2007) and Ulubasoglu et al., (2010), the expenditure elasticity and marginal effect of a household permanent income on education expenditure are computed as follow:

$$\eta_i = 1 + \frac{\beta_1}{w_{household\ education}}$$
$$\text{margial effect}_i = w_{household\ education} + \beta_1$$

The marginal effect provides the response of unit change of income on education expenditure, and total expenditure elasticity provides a household response, that is, either education is a normal or an inferior commodity for a household(Devi & Purnomosidi, 2019; Vu, 2020). As, $\eta > 0$ shows that the household considers education as normal while $\eta < 0$ shows that the household treats education as an inferior commodity. The expenditure elasticity $\eta > 1$ shows that education expenditure is more sensitive to income changes and $\eta < 0$ shows that education expenditure is less sensitive to income changes at the household level.

FINDINGS & DISCUSSION

Table 1: *Components of household education expenditure (share per cent)*

	Types of Expenditure				
	School / college / university fee	Books	Hostel	Transportation (for pick and drop)	Others (stationary, uniform etc)
Pakistan					
2013-14	46.08	43.31	0.96	5.42	4.22
2015-16	44.05	36.88	0.93	4.21	13.83
2018-19	54.75	26.93	1.18	5.43	11.70
Punjab					
2013-14	56.50	35.46	0.78	5.12	2.12
2015-16	48.06	36.93	0.74	3.90	10.37
2018-19	54.43	28.50	0.77	5.61	10.66
Sindh					
2013-14	34.35	53.53	0.42	7.35	4.02
2015-16	41.99	38.07	0.27	4.12	15.54
2018-19	62.33	21.77	1.75	5.80	8.32
Khyber Pakhtunkhwa					
2013-14	37.80	47.16	1.68	5.04	8.31
2015-16	41.07	32.88	1.52	5.47	19.03
2018-19	50.01	27.01	1.72	5.73	15.50
Balochistan					
2013-14	41.75	49.08	1.45	2.75	4.96
2015-16	37.30	44.86	1.76	2.52	13.53
2018-19	48.73	30.82	0.55	2.13	17.74

Source: Authors estimation based on Pakistan household budget surveys 2013-14, 2015-16 and 2018-19

As Table 1 illustrates that in overall Pakistan the largest share of educational expenditures for years 2013-14 and 2018-19 belongs to school/college/university fee. However, the share of this component decreased from 46.08 per cent in 2013-14 to 44.05 per cent in 2015-16. One possible reason could be that households belong to Punjab and Balochistan decreased their expenditure on this component in the year 2015-16. The component of books shows a decreasing trend as households' expenditure on this component was 43.31 per cent in the year 2013-14 and decreased to 26.93 per cent in the year 2018-19. One possible reason could be that households belong to Sindh, Khyber Pakhtunkhwa and Balochistan decreased expenditures on this component. The components other than school/college/university fee and books show variability. For example, the share of hostel expenditure decreased from 0.96 per cent in 2013-14 to 0.93 per cent in 2015-16 and increased to 1.18 per cent in 2018-19. The share of transportation for schooling pick and drop decreased from 5.42 per cent to 4.21 per cent and increased to 5.43 per cent. The share of others (stationary, uniform, etc.) increased from 4.22 per cent to 13.83 per cent and then decreased to 11.70 per cent in corresponding years.

In the case of Punjab, the largest share of educational expenditure belongs to the fee component. However, the share of this component decreased from 56.50 per cent in 2013-14 to 48.06 percent in 2015-16 and increased to 54.43 per cent in 2018-19. The second larger educational expenditure belongs to the books component. The share of this component increased from 35.06 per cent to 36.93 per cent and then reduced to 28.50 per cent in 2018-19. The hostel component of educational expenditure shows a minor variability as the share of this component decreased from 0.78 per cent to 0.74 per cent and increased to 0.77 per cent. A similar pattern was obtained in the share of the transportation component of educational expenditure. The share of others (stationary, uniform, etc.) follows an increasing trend over time.

In the case of Sindh, the fee component illustrates an increasing trend in overtime. The share of this component increased from 34.35 per cent in 2013-14 to 62.33 per cent in 2018-19. Educational expenditure shows a decreasing trend that belongs to the component of books. The share of this component decreased from 53.53 per cent in 2013-14 to 21.77 per cent in 2018-19. Both hostel and transportation illustrate variability as the shares of these components first reduced and then increased in terms of expenditure. However, households' educational expenditure on transportation for schooling pick and drop is more compared to hostel one. The share of educational expenditure belongs to others (stationary, uniform, etc.) component increased from 4.02 per cent in 2013-14 to 15.54 per cent in 2018-19 and then reduced to 8.32 per cent in 2018-19.

The descriptive statistic in Table 1 of Khyber Pakhtunkhwa illustrates that educational expenditures belong to fee and transportation components follow an increasing trend in the years under investigation. The share of fee educational expenditure increased from 37.40 per cent in 2013-14 to 50.01 per cent in 2018-19. The share of educational expenditure belongs to transportation for schooling pick and drop increased from 5.04 per cent in 2013-14 to 5.73 per cent in 2018-19. The educational components belong to books; hostel and others show variability overtime. As the shares of book and hostel components first reduced and then increased while the share of educational expenditure belongs to others (stationary, uniform, etc.) component first increased and then reduced.

The descriptive statistic in Table 1 of Balochistan illustrates that educational expenditure belongs to books follows a decreasing trend and share of others (stationary, uniform, etc.) educational expenditure component follows an increasing trend. The shares of fee, hostel, and transportation for schooling pick and drop at household level follow variability overtime. The share of books component decreased from 49.08 per cent in 2013-14 to 30.82 per cent in 2018-19. The educational expenditure belongs to others (stationary, uniform, etc.) increased from 4.96 per cent in 2013-14 and 17.74 per cent in 2018-19, respectively.

Amongst components of educational expenditure, the share of fee and book components is more than 80 per cent for the years under investigation. One possible reason could be that households give significant importance to male and female educational development.

Table 2: *Households with zero and positive education expenditure (%)*

	Households with zero education expenditure (%)			Households with positive education expenditure (%)		
	2013-14	2015-16	2018-19	2013-14	2015-16	2018-19
Pakistan	40.20	34.00	37.00	59.80	66.00	63.00
Punjab	33.90	31.90	33.30	66.10	68.10	66.70
Sindh	54.70	44.70	46.90	45.30	55.30	53.10
Khyber Pakhtunkhwa	27.30	23.80	24.60	72.70	76.20	75.40
Balochistan	50.70	38.30	47.50	49.30	61.70	52.50

Source: Authors estimation based on Pakistan household budget surveys 2013-14, 2015-16 and 2018-19

The households with zero and positive education expenditures display in Table 2 for overall Pakistan and provinces. The result illustrates that more than 50 per cent households have positive education expenditure. The households with positive education expenditure increased from 59.80 per cent in 2013-14 to 66 per cent in 2015-16 and drop to 63 per cent in 2018-19. Households with positive education expenditure in case of Sindh and Balochistan have shown a significant increase in year 2015-16 compared to households with positive education expenditure in year 2013-14. Households with positive education expenditure in four provinces of Pakistan decreased in year 2018-19 compared to households with positive education expenditure in year 2015-16. And a significant decrease obtained in case of Balochistan, where households with positive education expenditure decreased from 61.70 per cent in year 2015-16 to 52.50 per cent in year 2018-19.

Table 3: *Education expenditure (US$ household^{-1} year^{-1})*

	Household Budget Survey		
	2013-14	2015-16	2018-19
Pakistan	213.29	280.94	281.06
Punjab	251.51	307.29	304.20
Sindh	136.09	258.86	272.30

Khyber Pakhtunkhwa	238.56	277.62	285.62
Balochistan	122.25	211.94	128.76

Source: Authors estimation based on Pakistan household budget surveys 2013-14, 2015-16 and 2018-19

Note: the education expenditure was recoded in Pakistan currency (Rs.) and converted into US$ while using the average conversion rates from https://www.exchangerates.org.uk/USD-PKR-exchange-rate-history.html

Table 3 displays yearly household education expenditure for Pakistan and provinces of Pakistan. The findings show an increasing trend in education expenditure in case of Pakistan, Sindh, and Khyber Pakhtunkhwa province, while there is a variability obtained in households education expenditure belong to Punjab and Balochistan in the years under investigation.

Table 4: *Mean Difference test results for education expenditure*

2013-14 Groups	**Mean Differences in education expenditure (US$household^{-1} year^{-1})**	**Two-Samples t-statistic**
Punjab-Sindh	115.42	11.85*
Punjab-Khyber Pakhtunkhwa	12.95	.93
Punjab-Balochistan	129.26	11.32*
Sindh- Khyber Pakhtunkhwa	-102.01	-7.98**
Sindh-Balochistan	13.83	1.22
Khyber Pakhtunkhwa – Balochistan	116.31	5.37**
2015-16 Groups	**Mean Difference in education expenditure (US$household^{-1} year^{-1})**	**Two-Samples t-statistic**
Punjab-Sindh	48.43	3.65**
Punjab-Khyber Pakhtunkhwa	29.67	2.36***
Punjab-Balochistan	95.34	6.88**
Sindh- Khyber Pakhtunkhwa	-18.78	-1.30
Sindh-Balochistan	46.91	3.02**
Khyber Pakhtunkhwa - Balochistan	66.67	4.43**
2018-19		

Groups	Mean Difference in education expenditure (US$household⁻¹ year⁻¹)	Two-Samples t-statistic
Punjab-Sindh	31.91	2.50***
Punjab-Khyber Pakhtunkhwa	18.58	1.47
Punjab-Balochistan	175.44	15.70*
Sindh- Khyber Pakhtunkhwa	-13.32	-.92
Sindh-Balochistan	143.53	10.93*
Khyber Pakhtunkhwa - Balochistan	156.86	12.07*

Source: Authors estimation based on Pakistan household budget surveys 2013-14, 2015-16 and 2018-19

Note: *<0.01, **<0.05 and ***<0.1; the education expenditure was recoded in Pakistan currency (Rs.) and converted into US$ while using the average conversion rates from https://www.exchangerates.org.uk/USD-PKR-exchange-rate-history.html

The result of the two-sample t-test is presented in Table 4 to examine the mean difference of education expenditure between provinces for the years 2013-14, 2015-16, and 2018-19, respectively. In the year 2013-14, the mean difference of education expenditure between Punjab and Sindh is US$115.42 household⁻¹ and this difference is statistically significant at 1 per cent level. The positive mean difference expenditure on education illustrates that household belongs to Punjab has more mean education expenditure than household belongs to Sindh province. The t-value in the case of expenditure on education between Punjab and Khyber Pakhtunkhwa is statistically insignificant and confirms that there is no significant difference in mean education expenditure of households either belongs to Punjab or Khyber Pakhtunkhwa. The t-value in the case of expenditure on education is statistically significant at 1 percent level in the case of Punjab and Balochistan. The mean difference value of education expenditure is US$129.26 household⁻¹, which confirms that household belongs to Punjab has more education expenditure than household belongs to Balochistan province. The t-value in the case of mean education expenditure between Sindh and Khyber Pakhtunkhwa is statistically significant at 5 per cent level and the mean difference in education expenditure is –US$102.01 household⁻¹. The negative sign associated with mean difference shows that household belongs to Sindh has less mean education expenditure than household belongs to Khyber Pakhtunkhwa. The result associated with the mean difference in education expenditure between Sindh and Balochistan shows that there is no significant difference in mean expenditure on education. The result associated with Khyber Pakhtunkhwa and Balochistan illustrates that household belongs to Khyber Pakhtunkhwa has more mean education expenditure than household belongs to Balochistan. The mean difference in education expenditure is US$116.31 household⁻¹. It is concluded from this discussion that the highest and statistically significant mean difference in education expenditure is US$129.26 household⁻¹ which is between Punjab and Balochistan for the year 2013-14.

The result for the year 2015-16 is more interesting in the sense that the majority of t-vales associated with groups' comparison in terms of mean difference in education

expenditure are statistically significant. The mean difference in education expenditure between Punjab and Sindh decreased from US$115.42 household[-1] in 2013-14 to US$48.43 household[-1] in 2015-16. This is because that in Table ---the mean education expenditure of Punjab increased from US$ 251.51 household[-1] to US$307.29 household[-1] (i.e., US$307.29-251.51=22) and the mean education expenditure of Sindh increased from US$136.09 household[-1] to US$258.86 household[-1] (i.e., US$ 258.86-136.09=123) which is more from Punjab. The mean difference in education expenditure between Punjab and Khyber Pakhtunkhwa is US$29.67 household[-1] and statistically significant at the 10 per cent level while the statistically insignificant was obtained for the year 2013-14. The statistically significant mean difference in education expenditure shows that Khyber Pakhtunkhwa education expenditure increased from US$238.56 household[-1] in 2013-14 to US$272.62 household[-1] in 2015-16 (i.e., US$272.62-238.56=39). The mean difference in education expenditure between Punjab and Balochistan decreased from US$129.26 household[-1] in 2013-14 to US$95.34 household[-1] in 2015-16. The possible reason could be that increases in Balochistan education expenditure are US$90 household[-1] which is more than from increases in mean Punjab education expenditure in the year 2015-16. The insignificant statistical mean difference in education expenditure between Sindh and Khyber Pakhtunkhwa confirms that increases in Sindh mean education expenditure is US$123 household[-1] and increase in Khyber Pakhtunkhwa education expenditure is US$39 household[-1]. There is a statistically significant difference in mean education expenditure between Sindh and Balochistan and this is because increases in Sindh's mean education expenditure is US$123 household[-1] while an increase in Balochistan's mean education expenditure is US$90 household[-1]. The mean difference in education expenditure between Khyber Pakhtunkhwa and Balochistan decreased from US$116.31 household[-1] in 2013-14 to US$66.67 household[-1] in 2015-16. The reason is that increases in mean Balochistan education expenditure greater than the increase in mean Khyber Pakhtunkhwa education expenditure.

The result of the year 2018-19 confirms that there is a statistically significant mean difference in education expenditure between Punjab and Sindh. However, this difference decreased from US$48.43 household[-1] in the year 2015-16 to US$31.91 household[-1] in the year 2018-19. The reason is that the education expenditure of Punjab decreased from US$307.29household[-1] to US$304.20 household[-1] and the education expenditure of Sindh increased from US$258.86 household[-1] to US$272.30 household[-1]. There is obtained statistically insignificant mean difference in education expenditure between Punjab and Khyber Pakhtunkhwa. This is because the mean household education expenditure in Punjab decreases as mentioned above while the mean Khyber Pakhtunkhwa education expenditure increased from US$277.62 household[-1] in 2015-16 to US$285.62 household[-1] in 2018-19. The mean difference in education expenditure between Punjab and Balochistan is statistically significant, and this difference increased from US$95.34 household[-1] in 2015-16 to US$175.44 household[-1] in 2018-19. The reason is that decreases (i.e.US$3.09) in Punjab mean education expenditure is much smaller than decreases (i.e. US$83.18) in Balochistan. The mean difference in education expenditure between Sindh and Khyber Pakhtunkhwa turns out statistically insignificant. There is obtained statistically significant mean difference in Sindh and Balochistan education expenditure. This difference increased from US$46.91 household[-1] in 2015-16 to US$143.53 household[-1] in 2018-19. This is because the increases (US$13.44) in Sindh mean education expenditure is much smaller than

decreases (US$83.18) in Balochistan mean education expenditure. The mean difference in education expenditure between Khyber Pakthunkhwa is obtained statistically significant and this difference increased from US$66.67 household[-1] in 2015-16 to US$156.86 household[-1] in 2018-19. The reason is that decreases in Balochistan education expenditure are much larger than increases in Khyber Pakhtunkhwa mean education expenditure.

Table 5: *Econometric results of education expenditure from Working-Leser Model*

2013-14

	Pakistan	Punjab	Sindh	Khyber Pakhtunkhwa	Balochistan
Constant	-.322*	-.262*	-.241**	-.450*	-.170***
	(.017)	(.026)	(.041)	(.028)	(.083)
log (total expenditure)	.048*	.042*	.037**	.063*	.026***
	(.002)	(.003)	(.005)	(.003)	(.010)
R^2	.14	.11	.12	.20	.10

2015-16

	Pakistan	Punjab	Sindh	Khyber Pakhtunkhwa	Balochistan
Constant	-.290*	-.283**	-.277***	-.316*	-.307***
	(.016)	(.024)	(.047)	(.023)	(.078)
log (total expenditure)	.043*	.044**	.041***	.045*	.044***
	(.002)	(.003)	(.006)	(.003)	(.009)
R^2	.12	.11	.14	.15	.12

2018-19

	Pakistan	Punjab	Sindh	Khyber Pakhtunkhwa	Balochistan
Constant	-.354*	-.394*	-.360*	-.408*	-.219**
	(.010)	(.011)	(.015)	(.019)	(.025)
log (total expenditure)	.054*	.060*	.053*	.059*	.031**
	(.002)	(.001)	(.002	(.002)	(.003)
R^2	.15	.17	.19	.16	.09

Source: Authors estimation based on Working-Leser model and Pakistan Household Budget Surveys 2013-14, 2015-16 and 2018-19
        Note: *<0.01, **<0.05 and ***<0.1

The estimation results of the Working-Leser model of household educational expenditure for years 2013-14, 2015-16, and 2018-19 display in Table 5 while targeting the sample of overall Pakistan and four provinces' households of Pakistan. The budget share of educational expenditure is used as a dependent variable and the logarithm

income is included as an independent variable with aim of testing the hypothesis that logarithm income is positively related to the budget share of educational expenditure while holing other factors effect constant.

The econometric results for the year 2013-14 confirm the positive effect of logarithm income on the household budget share of educational expenditure. However, there is obtained difference in scale effect, for example, in the case of overall Pakistan, the coefficient associated with logarithm income is .048 and statistically significant at 1 per cent level. It implies that increases in logarithm income by 1 per cent lead to an increased household budget share of educational expenditure by .048 per cent units. In the case of Punjab, the effect of 1 per cent logarithm income on educational budget share is .042 per cent units. The coefficient associated with logarithm income in the case of Sindh is .037 and statistically significant at the 5 per cent level. It implies that the 1 per cent increase in logarithm income leads to increases in educational budget share by .037 per cent units. In the case of Khyber Pakhtunkhwa, the coefficient associated with logarithm income implies that increases in logarithm income by 1 per cent lead to increases in educational budget share by .063 per cent units. In the case of Balochistan, the impact of logarithm income on educational budget share is the lowest. Increases in logarithm income by 1 per cent lead to increases in household budget share on educational expenditure by .026 per cent units. From the discussion of the results, it can illustrate that the Khyber Pakhtunkhwa households' educational budget share is more sensitive to income changes, followed by Punjab, Sindh, and Balochistan, respectively. The econometric results for the year 2015-16 also confirm the positive and statistically significant effect of logarithm income on household educational budget share. In the case of overall Pakistan, increases in logarithm income by 1 per cent lead to increases in educational budget share by .043 per cent units. The resulting concern with Punjab implies that 1 per cent increases in logarithm income lead to increases by .044 per cent units. In the case of Sindh, the coefficient associated with logarithm income is .041. It implies that increases in logarithm income by 1 per cent lead to increases educational budget share by .041 per cent units. The result of Khyber Pakhtunkhwa associated with logarithm income confirms that 1 per cent increases in logarithm income lead to increases budget share of educational expenditure by .045 per cent units. In the case of Balochistan, the coefficient associated with logarithm income implies that increases in logarithm income by 1 per cent lead to increases in educational budget share by .044 per cent points. It can illustrate from the discussion of the results that there is obtained similarity in scale effect of logarithm income on the household budget share of educational expenditure in provinces of Pakistan.

The parameter estimates for the household logarithm income variable for the year 2018-19 in the case of overall Pakistan and four provinces of Pakistan are positive and statistically significant. However, there is obtained a scale difference in the effect of logarithm income on educational budget share. For example, in overall Pakistan, the coefficient associated with logarithm income implies that 1 per cent increases in logarithm income lead to an increased household budget share of education by .054 per cent units. In the case of Punjab, the 1 per cent increase in logarithm income leads to an increase of .060 per cent unit educational budget share. The 1 per cent effect of logarithm income in the case of Sindh on educational budget share is .053 per cent units. After Punjab, the second larger positive scale effect of logarithm income on education budget share is obtained for Khyber Pakhtunkhwa and the lowest is obtained for

Balochistan. It can illustrate from the result discussion households' budget shares of education in the case of Punjab and Khyber Pakhtunkhwa is more sensitive to income changes.

The findings of this study are consistent with Sial et al.,(2020) for Pakistan, Pallegedara & Kumara(2020) for Sri Lanka, Kuvat & Kizilgol,(2020) for Turkey, Acerenza & Gandelman(2019) for United and Caribbean countries, Acar et al.,(2016) for Turkey, Qian & Smyth(2011) China, Sulaiman et al.,(2012) for Malaysia.

Table 6: *Marginal effects and expenditure elasticity from results of Working-Leser Model*

	2013-14		2015-16		2018-19	
	Marginal effect	**elasticity**	**Marginal effect**	**elasticity**	**Marginal effect**	**Elasticity**
Pakistan	0.1070	1.8136	0.1020	1.7288	0.2040	1.3600
Punjab	0.1120	1.6000	0.1150	1.6197	0.2300	1.3529
Sindh	0.0760	1.9487	0.0970	1.7321	0.2430	1.2789
Khyber Pakhtunkhwa	0.1130	2.2600	0.0940	1.9184	0.2190	1.3688
Balochistan	0.0610	1.7429	0.0970	1.8302	0.1210	1.3444

Source: Authors estimation based on Working-Leser model and Pakistan Household Budget Surveys 2013-14, 2015-16 and 2018-19

Table 6 displays the marginal effect and expenditure elasticity of household educational expenditure for years 2013-14, 2015-16, and 2018-19 while considering the sample of overall Pakistan and provinces of Pakistan. The marginal effect in the case of Pakistan shows variability in the per-unit impact of a permanent income on household educational expenditure. The expenditure elasticity of education for Pakistan and provinces of Pakistan turns out greater than unity which confirms that household treats education as a luxury item. However, in the case of Pakistan, the elasticity shows a decreasing trend in the years under investigation. It implies that educational expenditure is becoming less sensitive to income changes. In the case of Punjab and Balochistan, there is obtained variability in percentage changes in educational expenditure as suggests the magnitude of expenditure elasticity. There is obtained a decreasing trend in elasticity in the case of Sindh and Khyber Pakhtunkhwa overtime. Households belong to the provinces of Pakistan treat education as a luxury item for the years under consideration and it is parallel Himaz (2010) for Sri Lanka, Acerenza & Gandelman(2019) for the United States and Caribbean countries, Jenkins et al., (2019) for Nigeria, Zhou et al., (2019) for China,. However, this study expenditure elasticity is not supported the findings of Sial et al.,(2020) for Pakistan, Khalili et al.,(2020) for Iran, Acar et al.,(2016) for Turkey, Chi & Qian(2016) for China, Ogundari & Abdulai(2014) for Nigeria who reported that education is a necessity item.

CONCLUSION

The purpose of this study was to conduct a comparative analysis of household

educational expenditures in Pakistan. According to the findings of the survey, a bigger portion of a household's educational expenditure is spent on fees and books. Furthermore, most provinces show statistically significant variances in average educational expenditures across households, with the largest disparity estimated between Punjab and Balochistan in 2018-19. Permanent household income is a crucial positive factor in boosting the budget share allocated to education.

RECOMMENDATIONS
National prosperity and individual wellbeing are linked with the sophisticated educational system. An improvement in educational outcomes is the foremost objective of developing nations and international donors. The present study contributes to the literature by investigating a comparative study of educational expenditure of Pakistan and provinces in Pakistan by applying a household budget survey for the three different periods from 2013-14, 2015-16, and 2018-19.

In pursuing the hypotheses of the study there are find no differences in components of household educational expenditures and total educational expenditure in the first hypothesis. The second hypothesis shows that there are find no differences in average educational expenditures. However, the third hypothesis indicates that logarithm income is positively related to the budget share of educational expenditure while holding other factors effect constantly.

To test the hypothesis descriptive statistic, independent sample t-test, and the Working-Leser model through econometric regression has been used respectively. To check changes in educational expenditure from income changes, the marginal effect and expenditure elasticity performed in this study.

Results of descriptive statistics show that among components of education expenditure, the share of fees and books cover more than 80 per cent of educational expenditure of households. Households with positive educational expenditure show less variability over time. Similarly, Households' educational expenditure has significantly increased in the year 2015-16. One possible reason for increased significance is the household's importance to the attachment to educational development.

Results from the independent sample t-test show that the majority of provinces have statistically significant differences in average educational expenditures. Educational expenditure of households belongs to Balochistan has significantly decreased in the year 2018-19. Furthermore, the highest difference in average educational expenditure is found between Punjab and Balochistan in the year 2018-19 and lowest in the case of Punjab and Khyber Pakhtunkhwa in the year 2013-14.

The econometric results of the study confirm that the household permanent income is a key factor for the budget share of education as obtained the positive and statistically significant effect of logarithm income on household educational budget shares. Education in Pakistan is treated as a luxury item by the households because the expenditure elasticity of education is found greater than unity. Marginal effects suggest that there is a positive relationship between changes in educational expenditure and per unit change in households' permanent income.

Considering the findings of the current study, some relevant and lucrative policies are recommended, for example, designing policies to reduce household educational expenditures on books and fees are essential. First, this can be well done by implementing a uniform educational policy in terms of curriculums, where no charge may be levied, and free books may be provided to students of public and private institutions. Second, introducing fees concession voucher programs for poor and distinction performer students at school/college/university level can be a policy measure. This policy measure will not only be helpful to reduce household educational expenditure but also will promote attraction to households to enroll their children in academic institutions. As the government of Pakistan is already working on an education policy named "Single National Curriculum". Considering the findings of this study, it is suggested that the inclusion of the above-mentioned policies and their implications would enhance the significance of such programs, initiated by the present government. Third, the results of this study offer some evidence that education is a luxury item. Therefore, creating job opportunities in sectors of agricultural, industrial, and services as paid workers will probably increase households' budget share of education in Pakistan.

REFERENCES

Abbam, A. (2018). Household and Contextual Factors Influencing Payment of Education by Households in Ghana. *European Scientific Journal, ESJ*, *14*(1), 258. https://doi.org/10.19044/esj.2018.v14n1p258

Abdelbaki, H. H. (2012). An Analysis of Income Inequality and Education Inequality in Bahrain. *Modern Economy*, *03*(05), 675–685. https://doi.org/10.4236/me.2012.35087

Acar, E. Ö., Günalp, B., & Cilasun, S. M. (2016). An empirical analysis of household education expenditures in Turkey. *International Journal of Educational Development*, *51*, 23–35. https://doi.org/10.1016/j.ijedudev.2016.03.007

Acemoglu, D. (2009). *Introduction to Modern Economic Growth*. Princeton University Press.

Acerenza, S., & Gandelman, N. (2019). Household Education Spending in Latin America and the Caribbean: Evidence from Income and Expenditure Surveys. *Education Finance and Policy*, *14*(1), 61–87. https://doi.org/10.1162/edfp_a_00241

Afzal, M., Malik, M., Begum, I., Sarwar, K., & Fatima, H. (2012). Relationship among education, poverty and economic growth in Pakistan: an econometric analysis. *Journal of Elementary Education*, *22*(1), 23–45.

Ahmed, H., & Amjad Sheikh, S. (2014). Determinants of School Choice: Evidence from Rural Punjab, Pakistan. *The Lahore Journal Of Economics*, *19*(1), 1–30. https://doi.org/10.35536/lje.2014.v19.i1.a1

Akca, N., Sönmez, S., & Yılmaz, A. (2017). Determinants of health expenditure in OECD countries: A decision tree model. *Pakistan Journal of Medical Sciences*, *33*(6), 2–6. https://doi.org/10.12669/pjms.336.13300

Amankwah, A., Legault, E., Rakotonarivo, A., & Mcgee, K. (2018). Measuring Household Expenditure on Education: A Guidebook for Designing Household Survey Questionnaires. *Measuring Household Expenditure on Education: A Guidebook for Designing Household Survey Questionnaires*, *December*. https://doi.org/10.15220/978-92-9189-234-1-en

Askarov, Z., & Doucouliagos, H. (2020). A meta-analysis of the effects of remittances on household education expenditure. *World Development*, *129*, 104860. https://doi.org/10.1016/j.worlddev.2019.104860

Aslam, M., & Kingdon, G. G. (2008). Gender and household education expenditure in Pakistan.

Applied Economics, *40*(20), 2573–2591. https://doi.org/10.1080/00036840600970252

Barro, R. J., & Lee, J. W. (2013). A new data set of educational attainment in the world, 1950–2010. *Journal of Development Economics*, *104*, 184–198. https://doi.org/10.1016/j.jdeveco.2012.10.001

Basuki, A. T., Purwaningsih, Y., Mulyanto, & Susilo, A. M. (2019). The role of local government expenditure on economic growth: A review of panel data in Indonesia. *Humanities and Social Sciences Reviews*, *7*(5), 1293–1303. https://doi.org/10.18510/hssr.2019.75168

Bayar, A. A., & Yanik Ilhan, B. (2016). Determinants of Household Education Expenditures : Do Poor Spend Less on Education? *Topics in Middle Eastern and African Economies*, *18*(1), 83–111.

Bischoff, I., & Prasetyia, F. (2019). Determinants of local public expenditures on education: empirical evidence on Indonesian municipalities between 2005 and 2012. *International Journal of Education Economics and Development*, *10*(2), 115. https://doi.org/10.1504/IJEED.2019.098683

Castaldo, A., & Reilly, B. (2007). *DO Migrant Remittances Affect The Consumption Patterns of Albanian Households? 1*(May 2006), 25–54.

Chi, W., & Qian, X. (2016). Human capital investment in children: An empirical study of household child education expenditure in China, 2007 and 2011. *China Economic Review*, *37*, 52–65. https://doi.org/10.1016/j.chieco.2015.11.008

Costa, G. P. C. L. da, & Gartner, I. R. (2017). The effect of allocation function in budgeting to reduce income inequality in Brazil: an analysis of spending on education and health from 1995 to 2012. *Revista de Administração Pública*, *51*(2), 264–293. https://doi.org/10.1590/0034-7612155194

Devi, L. Y., & Purnomosidi, R. Y. K. H. (2019). Estimation of Demand Elasticity for Food Commodities in Java Island. *Jejak*, *12*(1), 54–67. https://doi.org/10.15294/jejak.v12i1.18430

Devi, S., & Devi, A. (2014). Determinants of School Enrolment in Pakistan. *Journal of Education and Practice*, *5*(17), 74–83.

Ebaidalla, E. (2018). Understanding Household Education Expenditure in Sudan: Do Poor and Rural Households Spend Less on Education? *African Journal of Economic Review*, *6*(1), 160–178.

Evidences, E. (2011). Nexus between Government Expenditure on Education and Economic Growth: Empirical Evidences from India. *Revista Romaneasca Pentru Educatie Multidimensionala*, *3*(6), 73–85.

Gamlath, S., & Lahiri, R. (2017). Public and private education expenditures , variable elasticity of substitution and economic growth. *Economic Modelling*, *November 2016*, 1–14. https://doi.org/10.1016/j.econmod.2017.10.007

George, D., & Mallery, P. (2018). IBM SPSS Statistics 25 Step by Step. In *IBM SPSS Statistics 25 Step by Step*. Routledge. https://doi.org/10.4324/9781351033909

Gibson, J., & Kim, B. (2013). How reliable are household expenditures as a proxy for permanent income? Implications for the income-nutrition relationship. *Economics Letters*, *118*(1), 23–25. https://doi.org/10.1016/j.econlet.2012.09.016

H. Sial, M., Sarwar, G., & ul Hassan, N. (2020). Regional Disparities in Demand for Education: A Microeconometric Analysis for Pakistan. *Journal of Education & Social Sciences*, *8*(1), 121–132. https://doi.org/10.20547/jess0812008108

Himaz, R. (2010). Intrahousehold Allocation of Education Expenditure: The Case of Sri Lanka. *Economic Development and Cultural Change*, *58*(2), 231–258. https://doi.org/10.1086/648187

Hooda, S. K. (2015). Determinants of public expenditure on health in India: The Panel Data Estimates. In *Institute for Studies in Industrial Development* (Issue January). http://isid.org.in/pdf/WP177.pdf

Iddrisu, A. M., Danquah, M., Quartey, P., & Ohemeng, W. (2018). Gender bias in households'

educational expenditures: Does the stage of schooling matter? *World Development Perspectives*, *10–12*(May), 15–23. https://doi.org/10.1016/j.wdp.2018.09.001

Jenkins, G. P., Amala Anyabolu, H., & Bahramian, P. (2019). Family decision-making for educational expenditure: new evidence from survey data for Nigeria. *Applied Economics*, *51*(52), 5663–5673. https://doi.org/10.1080/00036846.2019.1616075

Kenayathulla, H. B. (2016). Gender differences in intra-household educational expenditures in Malaysia. *International Journal of Educational Development*, *46*(2016), 59–73. https://doi.org/10.1016/j.ijedudev.2015.10.007

Khalili, N., Arshad, M., Farajzadeh, Z., Kächele, H., & Müller, K. (2020). Effect of drought on smallholder education expenditures in rural Iran: Implications for policy. *Journal of Environmental Management*, *260*(May 2019). https://doi.org/10.1016/j.jenvman.2020.110136

Khanal, B., Banskota, K., & Giri, D. (2018). Comparative Analysis of Food Expenditure Pattern of Nepalese Households Using Engel Curves. *Journal of Business and Social Sciences Research*, *2*(1–2), 27. https://doi.org/10.3126/jbssr.v2i1-2.20956

Kuvat, O., & Ayvaz, Kizilgol, O. (2020). An Analysis of out of Pocket Education Expenditures in Turkey: Logit and Tobit Models. *Ege Akademik Bakis (Ege Academic Review)*, 231–244. https://doi.org/10.21121/eab.795986

Ogundari, K., & Abdulai, A. (2014). Determinants of Household's Education and Healthcare Spending in Nigeria: Evidence from Survey Data. *African Development Review*, *26*(1), 1–14. https://doi.org/10.1111/1467-8268.12060

Pallegedara, A., & Sisira, Kumara, A. (2020). Spending privately for education despite having a free public education policy: evidence from Sri Lankan household surveys. *International Journal of Social Economics*, *47*(5), 561–580. https://doi.org/10.1108/IJSE-07-2019-0445

Qian, J. X., & Smyth, R. (2011). Educational expenditure in urban China: income effects, family characteristics and the demand for domestic and overseas education. *Applied Economics*, *43*(24), 3379–3394. https://doi.org/10.1080/00036841003636292

Sarma, M., & Pais, J. (2008). Financial Inclusion and Development: A Cross Country Analysis. *In Annual Conference of the Human Development and Capability Association, New Delhi*, *168*(10–13), 1–30. https://doi.org/10.1002/jid

Sarwar, G., Sial, M. H., & Muhammad, M. S. (2019). Determinants of Household Investment in Education in Pakistan. *Journal of Education & Social Sciences*, *7*(2), 67–78. https://doi.org/10.20547/jess0721907204

Siddique, K., Ali, G., Ullah, I., Shah, A. U., & Fayaz, M. (2019). An Estimation of Expenditure, Own and Cross Price Elasticities of Meat in Pakistan. *Sarhad Journal of Agriculture*, *35*(2), 623–629. https://doi.org/10.17582/journal.sja/2019/35.2.623.629

Singh, D., & Shastri, S. (2020). Public expenditure on education, educational attainment and unemployment nexus in India: an empirical investigation. *International Journal of Social Economics*, *47*(5), 663–674. https://doi.org/10.1108/IJSE-06-2019-0396

Song, Y., & Zhou, G. (2019). Inequality of opportunity and household education expenditures: Evidence from panel data in China. *China Economic Review*, *55*(June 2018), 85–98. https://doi.org/10.1016/j.chieco.2019.03.002

Suhaimi Nahar, H., & K Ghani, E. (2020). Asian Education for the World Labor Market: A Malaysian Survey of Migration Propensity. *Humanities & Social Sciences Reviews*, *8*(2), 985–992. https://doi.org/10.18510/hssr.2020.82109

Sulaiman, N., Ismail, R., Othman, N., & Tin, P. B. (2012). The Determinants of Demand for Education among Households in Malaysia. *International Business Management*, *6*(5), 558–567. https://doi.org/10.3923/ibm.2012.558.567

Tsaurai, K. (2018). Investigating the determinants of human capital development in emerging markets. *International Journal of Education Economics and Development*, *9*(2), 172. https://doi.org/10.1504/IJEED.2018.092200

Ulubasoglu, M., Mallick, D., & Haszler, H. (2010). Food Demand Elasticities for Australia

Mokhtarul Wadud, Phillip Hone Food Demand Elasticities in Australia. *Economic Series/Scholl Working Paper*, *17*, 1–31.

Vu, L. H. (2020). Estimation and Analysis of Food Demand Patterns in Vietnam. *Economies*, *8*(1), 11. https://doi.org/10.3390/economies8010011

Wongmonta, S., & Glewwe, P. (2017). An analysis of gender differences in household education expenditure: the case of Thailand. *Education Economics*, *25*(2), 183–204. https://doi.org/10.1080/09645292.2016.1168363

Yang, J., SICULAR, T., & LAI, D. (2014). The changing determinants of high school attainment in rural China. *China Economic Review*, *30*, 551–566. https://doi.org/10.1016/j.chieco.2013.10.001

Yun, W. S., & Yusoff, R. (2019). Determinants of Public Education Expenditure : A Review. *Southeast Asian Journal of Economics*, *7*(2), 127–142.

Zhou, Z., Wu, Y., & Province, J. (2019). *Understanding china ' s urban consumption patterns: new estimates and implications*. *64*(4), 961–981. https://doi.org/10.1142/S0217590817450096