

Research Article



Mutton Export Competitiveness of Pakistan

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Abstract | Pakistan is an agricultural based country and livestock has a key role to play in providing the employment and to feed the population of Pakistan by providing them the milk and meat. The demand of mutton is everywhere in the world and also in the domestically in Pakistan. The share of livestock in the national gross domestic product is about 11 %. Pakistan is at number twelve in exports of the mutton according to the estimation of 2015. Although Pakistan's meat industry is performing well however, there is more potential in the sector of livestock and hence for the exports of meat to all over the world. The study in hand is designed to explore the current performance and competitiveness of meat industry of Pakistan. Keeping the importance of the meat industry of Pakistan, the study in hand is conducted to explore the mutton exports from Pakistan and to figure out the potential markets for Pakistani mutton. For the purpose of a research conducted on mutton exports from Pakistan the secondary data were used. The major sources of the data used in the study were international trade center, Economics survey of Pakistan, statistical yearbook of Pakistan and Agricultural Price Institution, Islamabad, Pakistan. Nominal protection coefficient (NPC), revealed comparative advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA) were estimated for the export of mutton to all existing international markets. According to the finding of the current study under hand internal markets are categorized into three categories of with high potential markets, low potential markets and markets with no potential. First Category of markets with no potential include Afghanistan, Oman, Kuwait, Qatar, Vietnam and Malaysia. Second Category of markets for low potential includes Saudi Arabia. Third category for high potential markets in current circumstances includes Bahrain, UAE, Iran, and Thailand. Future potential markets are placed in fourth category which includes Switzerland, Sweden, Denmark, Austria, Finland, United States of America, Germany, Belgium, Netherlands, Canada, Japan, Norway, Thailand, Poland and Maldives.

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Introduction

The agriculture sector accounts for 19.5% of GDP and 42.3% of employment, the sector has strong backward and forward linkages. The agriculture sector has four sub-sectors including: crops, livestock, fisheries and forestry. Livestock share in the agriculture value addition stand at 58.33% while it is contribut-

ing 11.4 % to the GDP (GoP, 2017). Livestock consists of cattle, buffalos, sheep, goat, camel, horses, asses, mules and poultry and poultry products. Livestock sector meets the domestic demand of milk, meat and eggs. It also provides net source of foreign earnings. More than 8.0 million rural families are involved in raising livestock (GoP, 2015). It is central to the livelihood of the rural poor in the country and can play

an important role in poverty alleviation and can uplift the socioeconomic conditions of our rural masses. A total of 49.5 thousand tons of red meat was exported from July-March 2014-15 (GoP, 2015). The export of meat fetched US\$ 145.6 Million. This meat was exported from 29 private sector slaughterhouses. During same period export facilitation was also provided for livestock by- products like animal casing, bones, horns and hooves, gelatin. Efforts are on way to access new markets like Russia, China, South Africa, and Indonesia for export of our meat and meat products.

Pakistan is an agricultural based country and livestock has a key role to play in providing the employment and to feed the population of Pakistan by providing them the milk and meat. The demand of mutton is everywhere in the world and also in the domestically in Pakistan. The share of livestock in the national gross domestic product is about 11 %. Pakistan is at number twelve in exports of the mutton according to the estimation of 2015 (ITC, 2016). Although Pakistan's meat industry is performing well however, there is more potential in the sector of livestock and hence for the exports of meat to all over the world. The competitiveness of Pakistani mutton exports to international markets to find out the potential markets as target future markets there was need of study particularly for meat industry. Mahmood (2004) concluded that Pakistan's agricultural sector witnessed a competitive position of some of its sectors but these trends were not uniform across all sectors. Comparative advantages were measured by Batra and Khan (2005) for commodities groups sectors in 97 chapters of HS-1996 using RCA index for both India and China. Ghani et al. (2008) measured the revealed comparative advantage for footwear industry by the application of Balassa RCA in Pakistan. Akhtar et al. (2009) conducted a research about the global competitiveness of fruit exports of by using the revealed comparative advantage (RCA) approach. Riaz and Jansen (2012) Used RCA approach believed the opinion that Pakistan was underperforming as far as its potential of agricultural exports was concerned. Akhtar et al. (2013) examined Pakistan's competitiveness in export of selected horticultural commodities by employing set of revealed comparative advantage (RCA) and revealed competitive advantage indices with respect to global trade.

The study in hand is designed to explore the current performance and competitiveness of meat industry of

Pakistan. Keeping the importance of the meat industry of Pakistan, the study in hand is conducted to explore the mutton exports from Pakistan and to figure out the potential markets for Pakistani mutton. The results will be used to identify and to solve the problems in existing circumstances in meat exports.

Materials and Methods

For the purpose of a research conducted on mutton exports from Pakistan the secondary data was used. The major source of the data used in the study was international trade center, Economics survey of Pakistan and statistical yearbook of Pakistan. For estimating competitiveness of Pakistani mutton in international markets time series Data about prices of agricultural products is taken from statistical yearbooks of Pakistan and Agricultural Price Institution, Islamabad, Pakistan.

Competitiveness of mutton exports from Pakistan
 Nominal protection coefficient (NPC): Conceptually, competitiveness is defined as the ability of a country to offer products and services that meet local and international quality standards, worth domestic and global market prices, and provide adequate returns on the resources used in producing them. Competitiveness can also be defined as the ability to face and to be successful when facing competition (Latruffe, 2010). Nominal protection coefficient was estimated for the mutton export from Pakistan to international markets. Among numerous methods applied to estimate competitiveness, nominal protection coefficient (NPC) is widely used (Corden, 1971; Balassa and Achydlowsky, 1972; Gulati et al., 1990; Taylor and Philips, 1991; Chand, 1999; Kumar et al., 2001; Rakotoarisoa and Gulati, 2006). It is defined as the ratio of a commodity's domestic price to its international reference price and that is computed as per equation:

$$NPC_i = P_{id} / P_{ib} \times ER \dots\dots\dots (1)$$

Where, NPC_i is Nominal protection coefficient for the i^{th} commodity, P_{id} is Domestic price for the i^{th} commodity in domestic currency, P_{ib} is border price in foreign currency adjusted for the transportation, marketing and other costs and ER is the exchange rate.

Revealed comparative advantage (RCA) approach is used to estimate the comparative advantage of a country for a specific commodity. The idea to determine a country's strong sectors by investigating the actual ex-

port flow was pioneered by Liesner (1958). Since this procedure was polished and popularized by Balassa (1965, 1989). It is commonly known as Balassa Index. Alternatively, the actual export flows ‘reveal’ the country’s powerful sectors so it is known as RCA. Before describing the Balassa (1965), it is very important to note that before Balassa introduced this famous RCA index in 1965, Liesner (1958) had already contributed to the empirical work of RCA. To this end, Liesner (1958) can be argued to be first empirical study in the field of RCA. Following Leisner’s work, a complete or advanced measure of RCA was proposed and then presented by Balassa (1965). This latter measure was the widely accepted and modified measure of RCA in literature. The RCA was used for mutton exports from Pakistan to international markets. The RCA index, thus, categorizes industries according to ability to compete in a specific market.

RCA for a country *i* in industry *a*, (RCA_{*i*})_{*a*}, can be described as:

$$(RCA_i)_a = (X_{ia} / X_{wa}) / (X_{it} / X_{wt}) \dots\dots\dots(2)$$

Where, X_{ia} is export value of commodity a by country *i*, X_{it} is total value of exports by country *i*, X_{wa} is world exports value of commodity *a* and X_{wt} is total world exports value.

Accordingly, country *i* exhibits revealed comparative advantage or will have a greater specialization in export of the product *a*, than world as whole, if (RCA_{*i*})_{*a*} is more than one. In common, the higher the RCA index of a specific product, the greater a country’s comparative advantage in that specific product line. The RCA measure according to Nwachuku et al. (2010) could be made symmetric by obtaining an index called “Revealed Symmetric Comparative Advantage (RSCA)”. This is computed as (RCA-1/RCA+1) and it varies from -1 to +1. The closer the value is to +1, the higher the competitiveness of a country in the commodity of interest. These two measures of RCA and RSCA were estimated for the exports of mutton from Pakistan to the international markets.

Results and Discussion

Mutton export value from Pakistan is 58293 thousand USD for the year of 2015. This export of mutton is only for the total 11 markets. Saudi Arabia is the 1st major market for Pakistani mutton followed by UAE and Bahrain. More than 50 % of total mutton export

is sent to only market of Saudi Arabia. The growth of exports were decreasing every year and it reached at highest during the year of 2012 which is 86949 thousand USD and then dropped and remained below than 60000 thousand USD throw-out the three consecutive years from 2013-2015 as shown in the diagram given below. The main reason of huge increase in export value from Pakistan in 2011 and 2012 was the Iran market. But from 2013 onwards the export of mutton was not went to Iran which cause again a decrease in the total export volume of mutton from Pakistan. Oman, Kuwait and Qatar are thee markets where about 11 % of total mutton exports is done by Pakistan. Pakistan in recent years entered into some new markets but in these markets the share of Pakistani mutton was below than 2 %. These new markets are Vietnam, Malaysia, Thailand, Afghanistan and Iran. The detail about these all markets are given in the Supplementary Table S1. The demand of the mutton is all over the world but the following countries are the top most numbered countries who import the mutton from all over the world (Supplementary Table S2). For instance, United States of America is the top first importer of the mutton with about 12.5 % share in the total import quantity of the world. China is at number two with about 11.5 % share in the world’s imports value. UK imports are the 9.5 % of total mutton imports from the world. Pakistani exporters do not export the mutton to the world’s fours top importers which are USA, China, UK, and France. Although these markets have lot of potential for Pakistan’s meat market and Pakistan also got the status of most favored nations (MFN) from European Union, then what are the factors that Pakistan could not target these markets? Is Pakistan not capable to compete in these four world’s top markets? Is there any difference in the quality demand in these top markets? Is there any different price behavior in these markets? There is need to fully explore the matter.

Similarly, the world’s top mutton exporting countries with export value as shown in Supplementary Table S3. For instance, New Zealand is the top first exporter of mutton followed by Australia. New Zealand and Australia both has a 68 % contribution in the total mutton exports of the world. Pakistan stands on number twelve in the list of top world exporters of the mutton. The share of Pakistan in the total world mutton exports is only 0.9 %. United Kingdom is the 3rd number at the same time in exporting as well as in importing the mutton. There is need to explore the

study the supply and demand of mutton from the UK. There may be some different product segmentations in the supply and demand of the mutton in the UK. These are following markets where mutton is exported from Pakistan. Pakistani mutton is only exported to 11 countries in the previous year 2015 as shown in the [Supplementary Table S1](#). The share of Saudi Arabia is 57 % in total Pakistani exports of mutton while UAE is the 2nd market of Pakistani mutton with 18.2 % share. UAE, Bahrain and Iran are the most attractive markets for Pakistani exporters because of high prices as shown in [Supplementary Table S4](#).

Pakistan is currently exporting the mutton to eleven world markets and for those markets Pakistan is facing a major completion with Australia, New Zealand and India while minor competition with Netherland, Kenia, Saudi Arabia, USA, UAE, Sudan, Argentina, Turkey, Jordan, Ethiopia and South Africa as shown in the [Figure 1](#).

Mutton exports of Pakistan to Saudi Arabia

Saudi Arabia is the world’s seventh largest importer of mutton. About 57 % mutton exports of Pakistan go to the only Saudi Arabia which makes Saudi Arabia a major market of Pakistani mutton. The export value of mutton from Pakistan to Saudi Arabia has been increasing every year. Pakistan’s performance in this market was very good in especially 2012, 2014 and 2015 when Pakistan exported mutton more than the value of 30,000 thousand USD ([Supplementary Figure S1](#)). Major competitors of Pakistan for this market are Australia, New Zealand and India. The current research underhand determines the Pakistan’s mutton export to the Saudi Arabia by using the revealed comparative advantage and nominal protection coefficient of Pakistani mutton to this market. Pakistan has a great revealed comparative advantage for market of Saudi Arabia as shown in [Table 1](#).

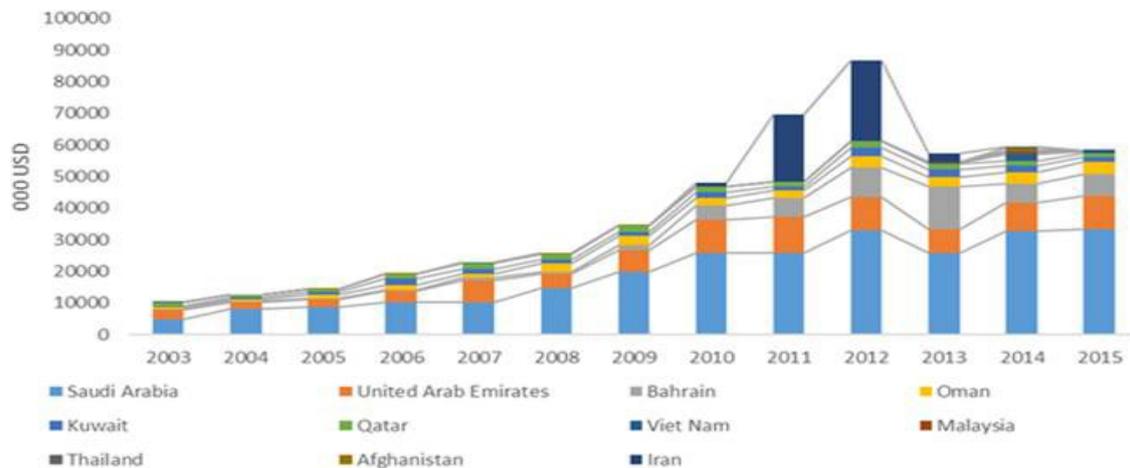


Figure 1: Mutton exports from Pakistan. *Source:* International trading center.

Table 1: Mutton export performance to the major markets.

Year	Saudi Arabia			UAE			Bahrain		
	NPC	RCA	RSCA	NPC	RCA	RSCA	NPC	RCA	RSCA
2005	0.73	27.49	0.92	0.89	1.95	0.32	1.08	13.55	0.86
2006	0.67	29.32	0.93	0.83	2.42	0.41	0.92	10.71	0.82
2007	0.65	26.85	0.92	0.71	2.57	0.44	0.77	7.526	0.76
2008	0.51	26.21	0.92	0.68	1.75	0.27	0.83	7.99	0.77
2009	0.73	23.71	0.91	0.72	2.32	0.39	0.78	10.57	0.82
2010	0.71	28.09	0.93	0.76	2.53	0.43	0.77	27.20	0.92
2011	0.85	22.22	0.91	0.87	2.16	0.36	0.84	29.32	0.93
2012	0.80	20.46	0.90	0.88	1.03	0.01	0.82	38.45	0.94
2013	0.81	22.71	0.91	0.83	1.84	0.29	0.76	62.69	0.96
2014	0.88	26.65	0.92	0.95	2.86	0.48	0.77	29.12	0.93
2015	0.86	29.19	0.93	0.81	4.47	0.63	0.81	38.54	0.94

Source: Author’s calculations.

The increasing values of NPC however show that Pakistan is losing its competitiveness in this market since 2011. The current study shows that for the recent time according to 2015 the competitiveness of Pakistani mutton in the market of UAE, Bahrain and Iran are more than Saudi Arabia. The competitiveness of Pakistani mutton in Saudi Arabia is good enough from all other export markets which include Qatar, Kuwait, Oman, Vietnam, Malaysia, Thailand and Afghanistan. The overall performance of Pakistani mutton supply is good in Saudi Arabia and there is need increase the further export volume of mutton to this market without losing its competitiveness. The increasing values of NPC of Pakistani mutton since few years in the market of Saudi Arabia, a recommendation is here for the exporters who are already exporting the mutton to Saudi Arabia should try to export to UAE, Bahrain and Iran because these are high value markets for Pakistan in existing circumstances as compared to Saudi Arabia.

Mutton exports of Pakistan to United Arab Emirates

United Arab Emirates is the world's 5th largest importer of mutton with a value of 392788 thousand USD in 2015. After Saudi Arabia the UAE is the 2nd largest market of Pakistani mutton. About 18 % of Pakistani mutton imports go to this market. Pakistan's performance in mutton exports to UAE is improving every year with some fluctuations but the highest amount of export value was in 2010, 2011, 2012 and 2015 which was more than 10,000 thousand USD (Supplementary Figure S1). Pakistan's major competitors for this market are Australia, India and Ethiopia. The study of RCA and NPC shows that Pakistan has both

comparative advantage and competitiveness for this market in mutton exports. The increasing values of RCA and fluctuating values of NPC for mutton exports revealed that Pakistani mutton export is gaining revealed comparative advantages with passage of time and Pakistan is also able to maintain its competitiveness in this market. The Pakistan's performance in mutton exports to this market is reasonable good as compared to Saudi Arabia. Although after having the look on 2015 export flow Saudi Arabia is three-time larger export market of Pakistani mutton as compared to UAE. Less value of NPC in 2015 in UAE market as compared to Saudi Arabia make the UAE more valued market with high rate of competitiveness of Pakistani mutton as compared to Saudi Arabia.

Mutton exports of Pakistan to Bahrain

Among the top importers of the mutton Bahrain comes at number eighteen with a total value of 74,555 thousand USD imports according to estimate of 2015. Bahrain is the third largest market of Pakistani mutton and about 12 % out of total mutton exports of Pakistan goes to this market. Pakistan's major competitor for this market is Australia. Because of only one major competitor for this market, there are more chances for Pakistan to improve the performance in mutton exports in this market. Pakistan exported about 7038 thousand USD mutton to Bahrain in 2015. Export value of mutton from Pakistan to Bahrain was highest in 2013 which was more 13,000 thousand USD (Supplementary Figure S1). The value of NPC shows that Pakistan has competitiveness in that market with increasing value of RCA indexes showing that Pakistan is improving its performance

Table 2: Mutton export performance to the minor markets.

Year	Oman			Kuwait			Qatar			Afghanistan		
	NPC	RCA	RSCA	NPC	RCA	RSCA	NPC	RCA	RSCA	NPC	RCA	RSCA
2005	1.08	21.42	0.91	1.17	15.68	0.88	1.08	23.04	0.91	1.17	0.01	-0.98
2006	0.99	21.54	0.91	1.04	24.16	0.92	0.88	26.16	0.92	0.82	0.01	-0.98
2007	0.71	10.13	0.82	0.80	12.02	0.84	0.77	16.01	0.88	-	-	-
2008	0.74	7.28	0.75	0.84	5.89	0.71	0.81	8.43	0.78	0.94	0.02	-0.94
2009	0.77	9.70	0.81	0.83	8.42	0.78	0.81	6.58	0.73	0.82	0.01	-0.99
2010	0.82	7.53	0.76	0.90	8.92	0.79	0.95	6.52	0.73	-	-	-
2011	0.96	4.23	0.61	1.01	4.99	0.66	1.02	5.31	0.68	1.00	0.001	-0.99
2012	0.95	7.30	0.75	1.03	8.93	0.79	0.92	7.14	0.75	0.93	0.001	-0.99
2013	0.79	6.71	0.74	0.92	11.33	0.83	0.87	9.27	0.80	-	-	-
2014	0.90	8.52	0.78	1.04	9.18	0.80	1.00	7.40	0.76	0.78	0.24	-0.60
2015	0.93	8.20	0.78	0.95	5.57	0.69	0.92	7.92	0.77	1.41	0.02	-0.96

Source: Author's calculations.

in both competitive and comparative advantages for this market. NPC value of 0.81 during 2015 shows that it has more competitive as compared top markets of Saudi Arabia and UAE. It is also a valued market with high prices of mutton as compared to UAE and Saudi Arabia. the comparison of NPC and RCA value of Bahrain with UAE revealed that Bahrain is has more future potential than UAE, because the NPC values shows a decreasing trend in Bahrain while in case of UAE it is maintained.

Mutton exports of Pakistan to Oman

Oman is at 23rd number in importing world's countries and Pakistan's major 4th market for mutton exports with a value of 5582 thousand USD in 2015. About 6.3 % value of total exported mutton of Pakistan goes to this market in 2015. Major competitors of Pakistan are this market are Australia, UAE, New Zealand, Kenya and India. The exports of mutton to this market increasing every year. The decline in export growth of mutton to this market was seen in 2007, 2010, 2011, 2013 and 2015. The highest increase in export growth was seen in 2008 and 2012. However for the year 2012, 2014 and 2015 was highest which was more than 3500 thousand USD as shown in [Supplementary Figure S2](#).

The calculated values of NPC and RCA during the current study under hand revealed that the performance of Pakistan is not good in this market. Increasing trend of NPC and decreasing RCA values overtime show that Pakistan is losing its competitiveness in this market. Though this market was an attractive market for Pakistani meat exporters especially for the year of 2007 to 2010 as shown by the NPC values. However this market has a high import demand of mutton. So there is need to improve the performance in this market. Anyhow the other markets where there in more competitiveness of Pakistani mutton as compared to Oman are Saudi Arabia, UAE, Bahrain and Iran. That's why if Pakistani exporters first should focus on these markets first and before going to export to the Oman.

Mutton exports of Pakistan to Kuwait

Pakistan's 4th largest market of mutton is Kuwait who comes on 20th number while in case of importing countries of meat from all over the world. From the total Pakistani mutton export value 2.5 % went to Kuwait according to the data of 2015. Pakistan's major competitor for mutton in this market are Aus-

tralia, New Zealand, Saudi Arabia, India, USA, UAE, Sudan, Argentina, Turkey, Jordan, South Africa, and Netherland. Eleven year trend of Pakistani mutton exports to this market shows high ups and down. However, the highest amount of export value to this market was seen in 2012 and 2013 which was more than 2500 thousand USD ([Supplementary Figure S2](#)). Pakistan export performance to this market is not satisfactory because the values of NPC are high throughout the time under consideration. The decisions to of not exporting to this market from some of Pakistani exporters are rational enough. Because it is not a high value market and also have a lot of competition in this market. The calculated NPC values throughout the time period under consideration show very poor performance of Pakistan to this market. More than one the value of NPC for the year 2005, 2006 2011, 2012 and 2014 show total irrational decision to export this market. This is low value market with high demand and may be Pakistani exporters exported low quality meat to this market in the selected years of under irrational decision of exports. The comparison of calculated NPC values shows that the mutton exports to the Saudi Arabia, UAE Bahrain, Kuwait and Iran have more competitiveness as compared the Kuwait. So the Government and the exporters should not focus in this market for future.

Mutton exports of Pakistan to Qatar

Qatar is the world's 13th importer of the mutton with a value of 144112 thousand USD during the year of 2015. Qatar is the 6th market for Pakistani mutton with a value of 1325 thousand USD in 2015. About 2.3 % export value of meat was imported into Qatar during 2015. Major competitors of Pakistan for this market are Australia, India, New Zealand, Sudan and USA. There is overall increasing trend in the mutton exports from Pakistan to Qatar. Pakistan exported more than 2500 thousand USD to Kuwait during 2008 and 2014 ([Supplementary Figure S2](#)). Qatar market is also a low value market with high demand same like the Kuwait. More high value of NPC is the cause in reduction in RCA value. For this market the case is same like the Kuwait. Decision of exports was seen irrational especially during the years of 2005, 2011 and 2014. The comparison of calculated values of NPC, RCA and RSCA revealed that market of Qatar is comparatively better Kuwait.

Mutton exports of Pakistan to Vietnam

Total value of import of mutton into Vietnam in

2015 was 13,596 thousand USD among which 467 thousand USD were imported from Pakistan. About 0.8 % out of total mutton export from Pakistan went to Vietnam in 2015. Only a small quantity from the exportable quantity of Pakistani mutton goes to this market. The export value of mutton to this market was seen highest during the year of 2014 which was about 2000 thousand USD (Supplementary Figure S3). This is a new emerging market. The major competitors of Pakistan for this Market are Australia, New Zealand and Austria. Due to having less demand of mutton in Vietnam as compared to other target markets, Pakistan is not performing well in this market. Irregular flow of mutton exports is shown without competitive advantage and comparative advantage for this market as shown in Table 3. The value of NPC shows the market not best for Pakistan as a potential market. So this is an inefficient market for the mutton export for Pakistan.

Mutton exports of Pakistan to Malaysia

Malaysia is a new emerging market. It has a high demand of mutton. It is at 15th number in world's top importing countries list with a value of 134,089 thousand USD according to 2015. The highest amount of mutton export was seen in 2014 which was 800 thousand USD as shown in Supplementary Figure S3. This market is new emerging market for Pakistani mutton. However the in three years lack of competitiveness and comparative advantages of Pakistani exports to Malaysia, Pakistan's performance is still poor in this market. There is further need to exports the reasons of poor performance in this market. Australia, new Zealand and India are the major competitors of Pakistan for this market. This is a low value market with high

demand and after three years of Export experience Pakistan's performance to this market is still poor. The calculated value of NPC shows irrational decisions of Pakistani exporter for the two years of total three year export experience. After reviewing the demand, value and competitions of mutton exports to the Malaysia, the current study underhand revealed that Malaysia is being a new emerging market, could be proved to be only a traditional market for Pakistani mutton.

Mutton exports of Pakistan to Thailand

Thailand is among one of the new markets for Pakistani mutton exports. Only about an export value of 134 thousand USD is exported to this market according to calculation of 2015. Only 0.2 % of total mutton export is directed toward this market. Australia and New Zealand are major competitors of Pakistan for this market. The Estimation of the NPC and RCA for Pakistani mutton to this new market shows that Pakistani cannot perform in this market. Pakistan's performance is poor yet in this market. Thailand is a high value market and an effort is needed to explore this market and to fulfilment there demand Pakistan should try to focus in this market in future to improve its competitiveness in this market. There is further need to explore the quality issues in this market and try to meet those quality standards regarding the Thailand. Pakistani exporters further should try to struggle in this market as high valued market and Government should also try to help out the exporters to compete in this market. There is need to improve the Pakistani mutton export share to this market and at the same time improve the competitiveness of Pakistani mutton in this market (Supplementary Figure S3).

Table 3: *Pakistan's performance in new emerging markets for mutton export.*

Year	Vietnam			Malaysia			Thailand			Iran		
	NPC	RCA	RSCA	NPC	RCA	RSCA	NPC	RCA	RSCA	NPC	RCA	RSCA
2005	-	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-	-
2007	1.25	1.34	0.14	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-	-
2010	1.11	0.01	-0.97	-	-	-	-	-	-	0.94	4.60	0.64
2011	-	-	-	-	-	-	0.89	0.05	-0.88	0.74	126	0.98
2012	0.73	0.10	-0.81	-	-	-	0.79	0.02	-0.94	0.73	171	0.98
2013	1.47	0.78	-0.12	0.91	0.56	-0.27	-	-	-	0.84	41.8	0.95
2014	1.32	3.18	0.52	1.30	1.43	0.17	1.41	1.33	0.14	1.06	1.40	0.16
2015	1.84	0.63	-0.21	1.52	0.38	-0.44	1.55	0.42	-0.40	0.63	0.40	-0.42

Source: Author's calculations.

Table 4: Potential of Pakistani mutton in international markets.

Markets	Competitiveness	Better markets with Low NPC according to final year of study which is 2015	RCA (Revealed comparative advantage)	Potential
Saudi Arabia	Yes, but decreasing	UAE, Bahrain and Iran	High, fluctuation and maintained	Yes, but limited
UAE	Yes. Fluctuating	Bahrain and Iran	High but less than Saudi Arab, increasing	Yes, More
Bahrain	Yes, increasing	Iran	yes, increasing	Yes, more potential for future
Oman	Yes, but decreasing	Saudi Arabia, UAE, Bahrain and Iran	Yes, but decreasing	Yes, But minor
Kuwait	No	Saudi Arabia, UAE, Bahrain, Iran, Oman, Qatar	Yes, But decreasing	No
Qatar	No	Saudi Arabia, UAE, Bahrain, Iran, Oman, Qatar	Yes, But Decreasing	No
Viet Nam	No	Saudi Arabia, UAE, Bahrain, Iran, Oman, Qatar	No	No
Malaysia	No	Saudi Arabia, UAE, Bahrain, Iran, Oman, Qatar, Afghanistan,	No	No
Thailand	Yet, No	Bahrain. No one is better than Thailand if Pakistan succeeds in improving the competitiveness	Yet, No	
Iran	Yes, Increasing	No one better than Iran	Yes, but decreasing	Yes, more

Source: Findings of the study under hand.

Mutton exports of Pakistan to Afghanistan

Being a neighbor of Pakistan, Afghanistan is a traditional market for Pakistani mutton with a 0.2 % share Pakistani mutton export. Due to the comparatively low import demand of mutton this market is not a value market for Pakistan. Further the study of NPC and RCA also showed that Pakistan is not performing well. There is no any competitor of Pakistan in mutton supply also. Behind this there is a solid reason of lack import demand and low prices. Only one advantage the Pakistan is exporting to this market is the lowest transportation cost in this market. There is no any future potential for Pakistani mutton in this market. The bad performance of any new supply market may be based on two reasons. One is that there is potential and the newly supplying market having some difficulties to maintain his competitiveness in that market and the 2nd that the market has no potential and all struggles in that markets are useless (Supplementary Figure S3).

Mutton exports of Pakistan to Iran

Iran is a new market for Pakistani mutton. The percentage of Pakistani mutton export to this market is no dough very low but there is potential for Pakistani mutton in the future because it is a high value market with a reasonable demand of mutton. Australia is the major competitor of Pakistan for this market in mutton export. The highest amount of mutton export to

this market was seen in 2012 which was about 25000 thousand USD (Supplementary Figure S1). The study of NPC RCA, and RSCA showed that Pakistan is performing well in this market and in future it is easy for Pakistan to explore this market to get competitiveness in this market. This market has an advantage of zero distance from Pakistan also. So this is the best market for which Pakistani can perform in this market. According to the NPC value of 2015 the Iran is the top market of Pakistani mutton where Pakistani mutton has lowest value of PNC which make Iran an attractive market in future. It shows that Pakistani mutton has highest competitiveness in this market. it was the same newly emerging market as Malaysia but opposite in competitiveness because Iran has highest competitiveness and Afghanistan has lowest competitiveness. If the NPC value decreases overtime it is assumed that RCA value will increase. But in case of Iran Instead of lower value of NPC why RCA is decreasing? There is something wrong in this market which is needed to solve (Supplementary Figure S1).

Conclusion

Currently Pakistan’s export markets are Saudi Arabia, UAE, Bahrain, Oman, Kuwait, Qatar, Vietnam, Malaysia, Thailand, Afghanistan and Iran. Among these markets Bahrain and UAE and Iran are attractive markets for the mutton exporters due to high prices.

There is need to explore the more potential markets for mutton to get high margin which are United States of America, Germany, Belgium, Netherlands, Canada, Japan, Switzerland, Bahrain, Sweden, Denmark, Austria, Finland, Norway, Thailand, Poland and Maldives. Through the study underhand it was found that there is more potential in meat and Pakistan can easily compete any of its competitor whether it is Australia or new Zeeland. There are different categories of international markets with high market prices where Pakistan can compete easily but there major factor of less performance of Pakistani mutton export is the less number of exporters. The government should try to increase the number of total exporters from Pakistan, only about 30 exporters are performing well in the huge internationally demand of meat, and for the exporters we would like to suggest that to focus on more to the markets where the competitiveness is more where the international prices are more to get the highest margin. No doubt for this there in need to improve our supply chain management on internationally regulations. The government should try to facilitate these exporters to the specific identified markets of the world. It is the quantitative study and to and for the identified markets the government should try to help the industries to improve qualitative aspects in the meat industry of Pakistan. According to the finding of the current study under hand by using NPC, RCA and RSCA the internal markets are categorized into three categories of with High potential markets, low potential markets and markets with no potential.

Table 5: *Categories of mutton markets.*

Category	Potential	Market
Category-1	No potential	Afghanistan, Oman, Kuwait, Qatar, Viet Nam, Malaysia
Category-2	Less potential	Saudi Arabia,
Category-3	High potential (explored)	Bahrain, UAE, Iran, Thailand
Category-4	High potential for future (unexplored)	Switzerland, , Sweden, Denmark, Austria, Finland, United States of America, Germany, Belgium, Netherlands, Canada, Japan, Norway, Thailand, Poland and Maldives

Source: *Findings of the study under hand.*

The study recommends that government and policy makers should facilitate the exporter for Bahrain, UAE, Iran, Thailand as Pakistan’s meat has a lot of potential in these markets.

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Authors’ Contribution

Iqbal Javed: Conceived the idea and Technical Input at every step.

Amar Razaq: Overall management of article and some minor revisions.

Mudassar Yasin: Introduction and some result and discussion.

Muhammad Ali Imran: Methodology and review of literature.

Haroon Javaid: Graphical presentations and justifications of results.

Iftikhar Nabi: Data collection.

Anum Sardar: Data entry and analysis.

Shahbaz Ahmad: References, editing and formatting.

Supplementary Material

There is supplementary material associated with this article. Access the material online at: <http://dx.doi.org/10.17582/journal.pjar/2018/31.4.313.322>

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