International Journal of Advanced Research in Biological Sciences
ISSN: 2348-8069
www.ijarbs.com
DOI: 10.22192/ijarbs Coden: IJARQG(USA) Volume 4, Issue 5 - 2017

Research Article

DOI: http://dx.doi.org/10.22192/ijarbs.2017.04.05.017

Marketing channel, net marketing margin of eggs, their problems with suggestive measures in some selected areas at Narsingdi district in Bangladesh

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Abstract

The study was undertaken to analyze the existing egg marketing system of commercially produced eggs in some selected areas of Narsingdi district to estimate cost and margin of egg traders and to identify problems and suggested measures to improve the existing marketing system of eggs. Seventy (70) farmers were selected as total sample size where 22 and 48 were egg traders. Farmers were selected conveniently where traders were selected both randomly and purposively. Five different channels were identified according to present egg marketing system. The average gross return of aratdars-cum-wholesaler, retailers, and suppliers for 100 eggs are found Tk. 42.50, Tk. 42.50 and Tk. 43.75 respectively. The average cost of aratders-cum-wholesaler, retailers, and suppliers for 100 eggs were found Tk. 9.41, Tk. 7.51 and Tk. 10.74 respectively. The net margin of 100 eggs were calculated and found Tk. 33.09, Tk. 34.99 and Tk. 33.01 respectively for aratdars-cum-wholesaler, retailers, and suppliers. So development of this enterprise is helpful in employment generation and poverty alleviation. Some problems were identified associated with the marketing of commercially produced eggs and their remedial measures for improving the existing marketing system were also suggested.

Keywords: Commercial eggs, Farm owners, Retailers, suppliers, Consumers

Introduction

Bangladesh is an overpopulated country. The population of Bangladesh is increasing day by day. Though our economy is an agriculture based, so most of the people of our country depended on agriculture. The livelihood about eighty-five percent of the people depends on agriculture based profession (Omar *et al*., 2013). Livestock is an important sub-sector of Bangladesh's agriculture, of which the contribution of poultry sector has an important avenue and reduces the malnutrition of the people of our country (Silva and Rankin, 2014). This sector accounts for 14% of the total value of livestock output and is increasing rapidly (Raihan and Mahmud, 2008). Poultry production associated with poultry related industry contributes

20.65 % of the total livestock contribution (Khan and Roy, 2006). It is found that, poultry meat alone contributes 37% of the total meat production in Bangladesh (Hamid *et al*., 2017). Poultry meet up the demand of about 22-27% of the total animal protein in Bangladesh (Prabakaran, 2003). Eggs are not only a delicious food item but also a source of protein and nutrients which are frequently served as the main dish in the meal (DLS. 2009). Consumption of eggs and meats are 20 gram per human per day and 30 per human per day respectively (FAO. 2013; Mostafa and Rob, 2014). Poultry farming on commercial and scientific line was started at 1970 in Bangladesh. About 77880 total registered private poultry farms established in Bangladesh (DLS. 2014).

Poultry industry is the most vital for its contributions to national economy also in the spheres of generating employment more than six million people (Hamid *et al*., 2017), creating additional income and improving the nutritional level of this country and egg is one of the main products of poultry farming (Omar *et al*., 2013). About 23.5 million poultry eggs are produced per day in Bangladesh (Hamid *et al*., 2017). Layer farming in commercial level is not only a good source of employment, income, and food but also act as a strong socio-cultural linkage in a country like Bangladesh. Now about 18222 registered commercial layer farms are available in Bangladesh (Hamid *et al*., 2017). The demand for the egg is increasing rapidly with the increasing of the population. To meet up the demand efficiently, egg marketing system is necessary. But it is difficult to run a fruitful business without the proper and organized marketing system. Thus marketing is an important factor for egg as a commercial product.

The main objectives of this study were to analyze the existing marketing system of commercially produced eggs, to estimate the marketing costs and margins of different market participants and to identify the problems of marketing of commercially produced eggs and to suggest some measures for their improvements.

Materials and Methods

Selection of the study area

The areas that provide maximum information regarding commercially produced egg marketing channels were selected. The selection of the study area was depended on the objectives of the research.

The layer farm owners and market intermediaries or participants of eggs were the populations for this study. On the basis of available information, egg producing areas were Raipura, Shibpur and Belabo Upazila of Narsingdi district was chosen for the selection of layer farm owners. These three Upazilas had the maximum potentiality for egg production. The various sizes (small, medium and large) of the layer and broiler cum layer farms were developed in these areas. The highest numbers of eggs in the country were supplied from these areas.

Narsingdi district town for had the maximum potential in egg marketing was selected as the study area for collecting information on the marketing aspect of eggs. Narsingdi town was considered as the largest consumption center of eggs like others District in the country because there were a number of institutional buyers such as hotels and restaurants, hospitals, bakeries, students, hostel and ultimate consumers in Narsingdi town. The ultimate demand for eggs came mainly from them. So for the purpose of the study Narsingdi Town was selected as consuming center of marketing.

Sampling techniques

The samples of the relevant population were selected in such a way that the data fulfill the objectives of this study**.** In a complete enumeration, the required information was collected from each and every element of the population. In a sample survey, a subset of all population was first selected and required information was collected from these selected elements only. In this study convenience, purposive and random sampling techniques were adopted due to advantages of over complete enumeration few in terms of cost, time and labor.

Selection of Sample and farms

The layer farms of the selected areas and egg traders in the selected markets were considered as the population of this study. The total sample size were 70 in which 22 farms, 17 aratdar- cum- wholesaler, 24 retailers and 7 suppliers of the institutional buyers were selected for an interview. In this study 22 number of layer farm was selected conveniently from three Upazila of Narsingdi district to examine their system.

Selection of aratdar- cum-wholesalers and retailers

The 'arats' of eggs are situated in Narsindi town at two important marketplaces namely ' Bottoli and Brahmondi Bazar. The aratdars of these two places were also involved in wholesaling of eggs. 7 aratdars-

cum- wholesalers from Battoli bazaar and 10 aratdar-cum-wholesaler from Brahmandi Bazar were selected randomly. About six (6) retail markets were selected purposively for eggs marketing channels in Narsingdi District. These were Jhosor Bazar, Poradia Bazar, Belabo bazaar, Hatirdia bazar, Potia Bazar, Shibpur Bazar and Monohordi bazar. There were many established retailers of eggs in those markets out of the 24 retailers were selected randomly from five markets.

Selection of suppliers of institutional buyers

There were many institutional buyers like hospitals, hotels, restaurants, hostels bakeries which were situated in Narsingdi District. The suppliers were known as contractors and were involved in supplying eggs to these institutional buyers. Out of them 5 supplier's were selected purposively.

Preparation of interview schedule

For this study, survey method was followed to collect data. Two sets of close-cum-open type interview schedules were prepared and pre-tested as well as made correction.

Method and Period of Data collection

The data were collected from both primary and secondary sources for the study. For the present study, the primary data were collected during the month of June to December of 2016.

Preparation of data for analysis

The filled up interview schedules were scrutinized and collected data were carefully edited in order to remove ambiguities and internal inconsistency. Then the collected data were transferred to master sheets from the interview schedules and finally prepared a report finding. Data were analyzed through simple statistical analysis such as Percentages, mean and variance etc.

Results and Discussion

Marketing channels of eggs

The main aim of the establishment of layer farm is to earn a profit by the disposal of eggs to the consumers. For this reasons, several intermediaries' channels are followed to reach the eggs from farm owners to consumers.

The marketing channel that were followed in the study areas is showed in figure 1

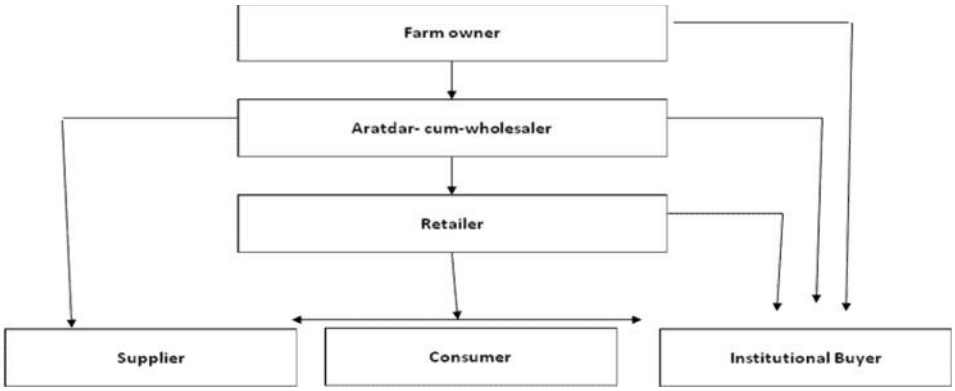

Figure 1: Marketing Channels of Eggs

On the basis of Figure 1, the following channels were identified for egg marketing system in the study areas
Channel -1: Farm Owner → Aratdar- cum- wholesaler→ Retailer → Consumer.
Channel -2: Farm Owner→Aratdar - cum- wholesaler → Supplier→Institutional Buyer.
Channel - 3: Farm Owner → Aratdar - cum - wholesaler → Institutional Buyer.
Channel -4: From Owner →Aratdar-cum- wholesaler → Retailer → Institutional Buyer.
Channel -5: L Farm Owners → Institutional Buyer.

Marketing functions performed by layer farm owners

Grading

Grading of eggs was performed according to standard size and color. The following table 1 revealed that among the farm owners' about18.18 percent of them graded eggs on the basis of size, 27.27 percent on the basis of color and 54.55 percent on the basis of both size and color.

Table 1: Distribution of farm owners grading

Basis of grading	Numbers of farm owner	Percent
Size	4	18.18
Color	6	27.27
Size + color	12	54.55
Total	**22**	**100.00**

Source: Field Survey, 2016.

Storage

The following table 2 revealed that among the farm owners about 64.29 and 35.71 percent were stored eggs one to three days and four to seven days respectively.

Table 2: Distribution of farm owners in period of storage

Period	Numbers of farm owners	Percent
One to three days	9	64.29
Four of seven days	5	35.71
Total	14	100.00

Method of price determination

The prices of eggs were determined by the interaction of the forces of demand and supply in a more or less competitive market situation. When effective market demand was high and supply was limited then the price became high and vice-versa.

Transportation

In the study area own pick-up, hired truck and rickshaw-van were used as transporters, the following table 3 revealed that among the farm owners about 36.35 percent were used own pick-up, 45 percent were used hired truck and 18 percent were used rickshaw-van.

Table 3: Distribution of farm owners by mode of transport.

Mode of transport	Numbers of farm owners	Percent
Pick-up	8	36.35
Truck	10	45.46
Rickshaw-Van	14	18.18
Total	**22**	**100.00**

Source: Field Survey, 2016

Selling

The following table 4 revealed that about 81.82 percent of sample farm owners sold eggs to Arats and 18.18 of them brought eggs at own sale centers for sale which situated in Narsingdi District.

Table 4: Distribution of farm owners by place of sale.

Place of sale	Numbers of farm owners	Percent
Arats	18	81.82
Own sale center	4	18.18
Total	22	100.00

Source: Field Survey, 2016.

Mode of sale

The eggs were sold by the sample farm owners mainly in three forms i.e. 40.91 percent in cash, 9.09 percent on credit and 50 percent in both cash and credit (Table 5).

Table 5: Distribution of farm owners by Mode of sale.

Mode of sale	Numbers of farm owners	Percent
Cash	9	40.91
Credit	2	9.09
Cash + credit	11	50.00
Total	**22**	**100.00**

Source: Field Survey, 2016.

Interval of sale

The following table 6 revealed that the eggs were sold about 36 percent daily, 41 percent were sold within one to three days and the rest 22.73 percent were sold within four to seven days.

Table 6: Distribution of farm owners by interval of sale

Interval sale	Numbers of farm owners	Percent
Daily	8	36.36
One to three day after	9	40.91
Four to seven day after	5	22.73
Total	22	100.00

Source: Field Survey, 2016.

Volume of sale

The following table 7 showed that there was a huge difference of volume of sells in peak season from a lean season and were highest sells in the month of December and lowest sells in the month of July. It was due to production loss for rainy seasons and others natural calamities.

$$\text{Seasonal index} = \frac{\text{Monthly volume}}{\text{12 month average}} \times 100$$

Table 7: Average volume of sale in different periods of the studied farms (n=22)

Months	Number of eggs	Percent	Seasonal indices
January	170778	9.41	109.72
February	159383	8.53	102.40
March	155480	8.32	99.40
April	139456	8.00	96.89
May	135272	7.25	86.91
June	118108	6.32	75.88
July	116448	6.23	74.81
August	139180	7.45	89.42
September	155217	8.31	99.76
October	178510	9.57	114.68
November	190502	10.20	122.39
December	199452	10.68	128.14
Total	1867847	100.00	
Average	**155653.91**	--	**100.00**

Source: Field Survey, 2016.

Marketing function performed by the egg traders:

Buying and selling of eggs:

Buying and selling are the functions of exchange and both have their primary objectives of negotiating favorable terms of exchange.

Buying of eggs:

Buying function is related with the seeking out the sources of supply, assembling the products and the activities associated with the purchase but here the traders particularly seeking out the sources of supply of eggs. It was the farm owners who supply eggs at the aratdars stores retailers and suppliers of the institutional buyers purchased entire volume of eggs from Aratdar-cum-wholesalers. Mode of payment and quality determination of eggs are discussed below.

Mode of payment and purchase:

The egg traders in Narsingdi District use three forms of payment of buying eggs i.e. 100 percent in cash and 100 percent on credit and partly in cash and partly on credit it appeared from the available data that about 24, 33 and 154 percent of Aratdar- cum-wholesalers, retailers, and suppliers respectively but the majority of Aratdar-cum- wholesalers (about 59 percent), retailers (50 percent) and suppliers (57 percent) used to purchase eggs partly in cash and partly on credit (Table 8).

Table 8: Mode of payment by egg traders

Mode of Payment	Aratdar-cum-wholesaler		Retailer		Supplier	
	Number	Percent	Number	Percent	Number	Percent
Cash	4	23.53	8	33.33	1	14.28
Credit	3	17.65	4	16.67	2	28.57
Cash + Credit	10	58.82	12	50	4	57.15
Total	**17**	**100.00**	**24**	**100.00**	**7**	**100**

Source: Field Survey, 2016.

Quality determination at the time of purchase:

The quality of eggs was determined by the traders on the basis of yolk condition, movement of internal components and cleanness of shell of the eggs. The following table 9 revealed that eye estimation against the light was used to determine the condition of yolks of eggs by about 58.50 and 28.57 percent of Aratdar-cum-wholesalers and suppliers respectively. About 41 percent of Aratdar-cum-wholesalers and 29 percent of retailers applied the method of shaking to determine the quality of eggs. If any sound of movement felt from inside the eggs by shaking then the quality of egg was considered lower. Perhaps this method was unscientific because it affects good eggs to become rotten. About 21 percent of retailers and 71 percent of suppliers determined the quality of eggs on the basis of cleanness of the shell of eggs.

Table 9: Method of quality determination by the egg traders

Method	Aratdar-cum-wholesaler		Retailer		Supplier	
	Number	Percent	Number	Percent	Number	Percent
Eye estimation (by placing eggs against light	10 7	58.82 41.18	12 7	50.00 29.17	2 -	28.57 -
Observing cleanness of shell	--	--	5	20.83	5	71.43
Total	**17**	**100.00**	**24**	**100.00**	**7**	**100.00**

Source: Field Survey, 2016.

Method of price fixation at the time of purchase:

It was revealed from the field survey that the traders in Narsingdi town fix up the price of eggs while they purchase mainly on the basis of three forms via bargaining, accepting prevailing market price and both bargaining and the prevailing market price. Table 10 revealed that about 29 percent of aratdar-cum-wholesalers and 29 percent of retailers adopted the method of bargaining of fix up the price of eggs whenever they purchased. About 21 percent of retailers and 18 percent of aratdar-cum - wholesalers fixed up the price of eggs on the basis of prevailing market price while about 53 percent of aratdar-cum-wholesalers, 50 percent of retailers and 100 percent of suppliers settled the purchase price of eggs by using the combination of bargaining and prevailing market price.

Table 10: Method of price fixation at the time of purchase

Method	Aratdar-cum-wholesaler		Retailer		Supplier	
	Number	Percent	Number	Percent	Number	Percent
Bargaining	5	29.41	7	29.17	--	--
Prevailing market price	3	17.65	5	20.83	--	--
Both bargaining & Prevailing market price	9	52.94	12	50.00	7	100
Total=	**17**	**100.00**	**24**	**100.00**	**7**	**100.00**

Source: Field Survey, 2016.

Selling of eggs:

The aratdar-cum-wholesalers in Narsingdi District sells a major portion of their eggs (60 percent) to the retailers, 25 percent of the suppliers of institutional buyers and 15 percent directly to the institutional buyers. The retailers sold most of their eggs (75 percent) directly to the consumers and 25 percent of the institutional buyers. On the other hand, suppliers delivered predetermined volume of eggs to their selected institutional buyers (Table 11).

Table 11: Volume of transaction by eggs traders

Method	Aratdar-cum-wholesaler		Retailer		Supplier	
	Number	Percent	Number	Percent	Number	Percent
Aratdar-cum-wholesaler	100	--	60	25	15	--
Retailer	--	100	--	--	25	75
Supplier	--	100	--	--	100	

Source: Field Survey, 2016.

Mode of sale:

Mainly three forms viz. 100 percent of case, 100 percent on credit and partly in cash and partly on credit are used in Narsingdi district by the traders of eggs as the mode of sale. The following table revealed that 29 percent of aratdar- cum- wholesalers and 33 percent of retailers sold eggs in cash. Eggs were sold on credit by 18, 21 and 100 percent of aratdar- cum-wholesalers, retailers and suppliers respectively. About 53 percent of aratdar- cum wholesalers and 46 percent of retailers sold eggs partly in cash and partly on credit (Table 12).

Table 12: Mode of sale used by traders

Method of sale	Aratdar-cum-wholesaler		Retailer		Supplier	
	Number	Percent	Number	Percent	Number	Percent
Cash	5	29.41	8	33.33	--	--
Credit	3	17.65	6	20.83	7	100
Cash + credit	9	52.94	11	45.84	--	--
Total	**17**	**100.00**	**24**	**100.00**	**7**	**100.00**

Source: Field Survey, 2016.

Method of price fixation at the time of sell:

From the available data of field survey it was known that the traders of Narsingdi District fix up their selling price mainly in five ways viz. i) Bargaining, ii) Accepting prevailing market price, iii) Both bargaining and prevailing market price, iv) a mark upon purchase price and v) on the basis of tender (Table 13).

Table 13: Method of price fixation at the time of sell.

Method	Aratdar-cum-wholesaler		Retailer		Supplier	
	Number	Percent	Number	Percent	Number	Percent
Bargaining	2	11.76	2	8.33	--	--
Prevailiag market price	3	17.64	5	20.83	--	--
Both bargaining and pervailing market price	9	52.94	7	29.17	--	--
A " Mark-up" on purchase price	2	11.76	10	41.67	7	100.00
On the basis of trnder	--	--	--	--	7	100.00
Total	**17**	**100.00**	**24**	**100.00**	**7**	**100.00**

Source: Field Survey, 2016.

It was revealed from above table that about 12 percent of Aratdar- cum- wholesalers and 8 percent of retailers used bargaining to set the selling price. About 21 percent of retailers and 18 percent of Aratdar-cum-wholesalers considered prevailing market price as the basis of setting the selling price while the combination of bargaining and a prevailing market price was used by 53 percent of aratdar- cum- wholesalers and 29 percent of retailers in deciding their selling price. A markup method was used by the large portion (about 42 percent) of retailers and 12 percent of aratdar- cum-wholesalers.

Transportation:

The following table 14 revealed that about 59 percent of aratdar- cum- wholesalers used truck for the transportation of eggs. About 41 percent of aratdar-cum- wholesalers and 71 percent of suppliers used pick- up for transportation of eggs. Rickshaws were used by the majority (about 57.17 percent) of retailers as a mode of transportation and about 46 percent of retailers and 29 percent of suppliers used rickshaw-van to carry eggs.

Table 14: Mode of transportation used by the egg traders

Method of Transportation	Aratdar-cum-wholesaler		Retailer		Supplier	
	Number	Percent	Number	Percent	Number	Percent
Truck	10	58.82	--	--	--	--
Pick-up	7	41.18	--	5	5	--
Rickshaw-van	--	--	11	45.83	2	28.57
Total	**17**	**100.00**	**24**	**100.00**	**7**	**100.00**

Source: Field Survey, 2016.

Storage:

The following table 15 revealed that 53 percent of aratdar-cum- wholesalers and 54 percent of retailers stored eggs for four to seven days at a shop in a plastic cage. Eggs were stored at shop in bamboo made basket by about 29 percent of Aratdar- cum-wholesalers and by 29 percent of retailers for one to that days but only about 18 percent of Aratdar- cum-wholesalers and 17 percent of retailers stored eggs in cold storage for one month and above to reach the benefit of price.

Table 15: Place, method and period of storage

Place, method and period	Aratdar-cum- wholesaler		Retailer	
	Number	Percent	Number	Percent
At shop in basket for one to three days	5	29.41	7	29.17
At shop in case for four to seven days	9	52.94	13	54.17
In cold storage in one month & above	3	17.65	4	16.66
Total	**17**	**100.00**	**24**	**100.00**

Source: Field Survey, 2016.

Market information:

The following table 16 revealed that about 41% of aratder-cum-wholesalers and 62.50% of retailers received market information from fellow traders. About 59% of aratdar-cum- whole sellers, 27.5% of retailers and 100% of suppliers reported that they had collected market information by market visit and personal observation.

Table 16: Source of market information

Source	Aratdar-cum-wholesaler		Retailer		Supplier	
	Number	Percent	Number	Percent	Number	Percent
Fellow traders	7	41.18	15	62.50	--	--
Market visit & Personal observation	10	58.82	9	27.50	7	100.00
Total	**17**	**100.00**	**24**	**100.00**	**7**	**100.00**

Source: Field Survey, 2016.

Marketing cost and margin of eggs

The following table 17 revealed that the average gross return of aratdars-cum-wholesaler, retailers and suppliers for 100 eggs are found TK. 42.50, TK.42.50 and TK.43.75 respectively. The average cost of aratders-cum-wholesaler, retailers and suppliers for 100 eggs were found TK.9.41, TK.7.51 and TK.10.74 respectively. The net margin of 100 eggs were calculated and found tk. 33.09, tk. 34.99 and tk. 33.01, respectively for aratdars-cum-wholesaler, retailers, and suppliers.

Table 17: Average marketing margin and profit of aratdar- cum- wholesaler, retailer and supplier (Taka per 100 eggs).

Market participants	Purchase	Sells price	Marketing Margin	Marketing cost	Net margin (Profit)
Aratdar- cum-wholesaler	762.5	805	42.5	9.41	33.09
Retailer	805	847.5	42.5	7.51	34.90
Supplier	804.58	848.33	43.75	10.74	33.01

Common problems faced by egg traders and their suggested measures are discussed.

Farm owners	
Problems	**Common measures suggested**
High demand of eggs from native birds	Establishment of Hatchery
Fluctuation of demand	Strong monitoring
Breakage of eggs in transit	Used eggs tray carefully
High transportation cost	Used effective vehicles system
Strike, flood and natural calamities	Stopped political unrest
High cost of storage	Developed storage system
Lack of adequate supply of vaccine	Provision of Adequate Supply of Vaccine
Lack of Effective Extension facilities	Provision of Effective Extension Service
Poor transportation	Development of Transportation System

Egg traders	
Problems	**Common measures suggested**
Lack of operating capital	Operated adequate capital investment
Spoilage of eggs	Developed adequate storage facilities
Absence of storage facilities	Established new storage facilities
Lack of adequate and suitable transportation system	Improvement of transportation and communication facilities
Breakage of eggs in transit	Used enriched vehicles system
Inadequate space in the market	Developed marketing policy

Conclusion

The result emerged from the study clearly indicated that Egg marketing system is a profitable business. From the above study, the finding result identified five different channels in present egg marketing system. So the development of this enterprise is helpful in employment generation and poverty alleviation which are now the concern of the planners of the country.

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	Website: www.ijarbs.com
Quick Response Code	Subject: Veterinary and Animal Sciences
DOI:10.22192/ijarbs.2017.04.05.017	

How to cite this article:
Jotan Kar, Shankar Biswas, Arup Sen, Sabuj Kanti Nath, Sumana Nath. (2017). Marketing channel, net marketing margin of eggs, their problems with suggestive measures in some selected areas at Narsingdi district in Bangladesh. Int. J. Adv. Res. Biol. Sci. 4(5): 154-165.
DOI: http://dx.doi.org/10.22192/ijarbs.2017.04.05.017