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FACTORS AFFECTING THE PERFORMANCE OF NEW AGRICULTURAL CO-OPERATIVE IN HAU GIANG PROVINCE

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ABSTRACT

The study was conducted to determine the factors that affect the performance of new agricultural co-operatives in Hau Giang Province. Data of this study were collected from 40 new agricultural co-operatives in Chau Thanh, Chau Thanh A and Phung Hiep Districts of Hau Giang Province. Applying PLS-SEM method, the study has proved that capital source, management ability, and co-operatives' members positively affect the operation result of new agricultural co-operatives. Some recommendations have been proposed to improve the performance of new agricultural co-operatives in Hau Giang Province.

KeyWords: New agricultural co-operative, capital source, management ability, co-operative member, performance result

1. PROBLEM STATEMENT

Co-operatives play an intermediate role, supporting input and output sources for farmers. Co-operatives are places where science and technology are transferred and applied to the production process in agriculture, as well as where farmers access and filter sources of information easily (Abdulquadri and Mohammed, 2012). Co-operatives help connect households and make income for members participating in co-operatives (Virendra et al, 2015). In addition to generating income for participants, co-operatives play a role of empowering and promoting women's rights (Aregawi and Haileslasie, 2013). Agricultural co-operatives play an important role in developing agriculture, which is reflected in the activities of providing capital support and training for co-operatives' members; acquiring and applying scientific and technical achievements; consulting agricultural services for members and farmers; supporting input and output sources for members (Adefila and Madaki, 2014).

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Hau Giang Province was established in 2004 and it is one of the rice production centers of the Southwest region with an interlaced network of rivers that is associated with the agriculture development. In 2018, the whole province had 155 co-operatives. New agricultural co-operative models have been converted under the Co-operative Law since 2012, which brought practical economic efficiency and created links among value chains from production to consumption. New agricultural co-operatives have actively supported farmers to access science and technology in agricultural production, access capital sources and output markets for agricultural products, which brings economic efficiency for members. However, there are still new agricultural co-operatives operating ineffectively and passively to the market change, accessing poorly to policies, which result in poor operational efficiency and the reduction in members' belief. Therefore, the study "Factors affecting the performance of new agricultural co-operative in Hau Giang Province" is essential, providing the scientific basis for local government in order to improve the performance of new agricultural co-operatives in the future.

2. RESEARCH MODEL

2.1 Capital source affects the performance of new agricultural co-operatives

Capital sources show the financial potential of co-operatives. There are co-operatives that have not been able to access capital sources for investment and have not promoted the production process to create the best profit (Pham Bao Duong and Le Thi Phuong, 2016). According to Mai Van Nam (2005), the capital source is an important factor affecting the performance of co-operatives. The contribution of co-operatives' members helps maintain the stability of co-operatives' operation result (Von and John, 2004). Therefore, the hypothesis H1 is proposed as follows: The capital source positively affects the performance of new agricultural co-operatives.

2.2 Management ability affects the performance of new agricultural co-operatives

According to Mai Van Nam (2005), Duong Ngoc Thanh et al. (2018), the educational background of the Co-operative Management Board affects the performance of co-operatives' activities. The higher the educational level of the Co-operative Management Board is, the more benefit the co-operatives can get. Similarly, John and Thomas (2001) have demonstrated that, if the Cooperative Management Board has a high level of education and good management skills, the co-operatives' operation result will be improved. The restriction in management skills and educational background of co-operatives' leaders are important factors, greatly affecting their performance (Amini and Ramezani, 2008). If the Co-operative Management Board is ignorant in developing the co-operative's strategies and budget, it will negatively affect its performance (Augustine, 2016). Therefore, the hypothesis H2 is proposed as follows: Management ability positively affects the performance of new agricultural co-operatives.

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2.3 Co-operatives' members affect the performance of new agricultural co-operatives

Co-operatives' members are important factors in activities, movements of the co-operatives and especially their feedback will contribute to improving the operational efficiency for the cooperatives (Mahazril et al, 2012). Members are the ones who decide the success or failure of the cooperatives (Azmah et al, 2012). Tran Quoc Nhan et al (2012) pointed out that co-operatives have not shown a clear role in improving income for their members but participating in co-operatives helps improve members' income better. When members have proper awareness about their cooperatives, it helps the co-operatives develop and operate effectively by connecting and acquiring science and technology (Pathak and Kumar, 2008). According to Msimango and Oladele (2013), the better the land resources the farmers have, the better the ability to participate in and develop the co-operatives. Therefore, the hypothesis H3 is proposed as follows: Co-operatives' members positively affect the performance of new agricultural co-operatives.

From the information above, the research model of factors affecting the performance of new agricultural co-operatives in Hau Giang province is proposed as follows:

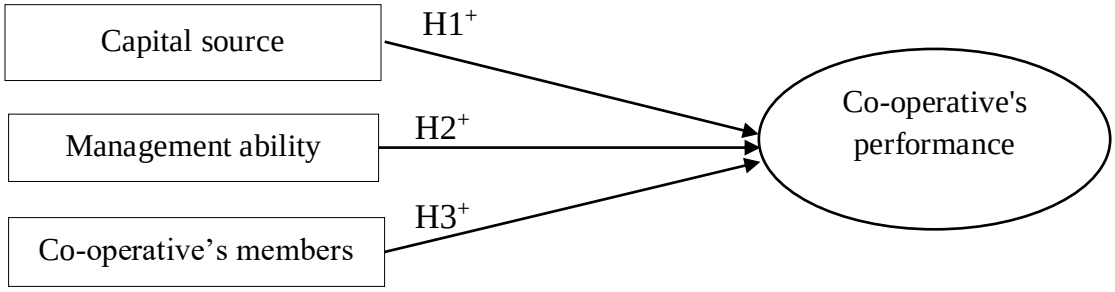

Figure 1: The proposed research model
Source: Author's proposal, 2018

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Table 1: Interpretation of observed variables in the research model

Factors	Observed variables	Sign	Scale	Reference sources
Capital source	Co-operative's capital mobilization is flexible and simple	CS1	Likert 1-5	Von and John (2004), Mai Van Nam (2005), Pham Bao Duong và Le Thi Phuong (2016)
	Co-operative's members contribute the capital to develop co-operative's activities	CS2	Likert 1-5	
	The capital contributed by co-operative's members plays an important role in the co-operative's performance	CS3	Likert 1-5	
	Co-operative is able to access capital credit source	CS4	Likert 1-5	
	Co-operative's capital always ensures the good working condition for the cooperative	CS5	Likert 1-5	
	Co-operative always uses the capital appropriately and effectively	CS6	Likert 1-5	
Management ability	The Co-operative Management Board has an educational level that meets the requirements	MA1	Likert 1-5	John et al (2001), Mai Van Nam (2005), Amini and Ramezani (2008), Augustine (2016), Duong Ngoc Thanh et al (2018)
	The Co-operative Management Board encourages members to participate in co-operative's activities	MA2	Likert 1-5	
	The Co-operative Management Board is able to arrange work rationally	MA3	Likert 1-5	
	The Co-operative Management Board understand deeply about the agricultural production process and the product's output market	MA4	Likert 1-5	
	The Co-operative Management Board has a good reputation and social relationships	MA5	Likert 1-5	
Co-operative's members	The members always agreed with new policies	CM1	Likert 1-5	Pathak and Kumar (2008), Mahazril et al (2012), Azmah et al (2012), Tran Quoc Nhan et al (2012), Msimango and Oladele (2013)
	Members always contribute and support the activities	CM2	Likert 1-5	
	Members have good production skill and market knowledge	CM3	Likert 1-5	
	Members always share with the common difficulties	CM4	Likert 1-5	

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	Members always contribute properties and materials to develop the cooperative	CM5	Likert 1-5	
	Members always give feedbacks and comments in the co-operative's activities	CM6	Likert 1-5	
Performance result	Co-operative's activities are profitable	PR1	Likert 1-5	Ajay et al (2014), Zelhuda et al (2017)
	Co-operative's scale is expanding	PR2	Likert 1-5	
	Co-operative's reputation is improved more and more in the market	PR3	Likert 1-5	
	Co-operative always creates a stable income for its members	PR4	Likert 1-5	
	Co-operative's performance result always reach annual goals	PR5	Likert 1-5	

Source: Author's proposal, 2018

3. RESEARCH METHODOLOGY

3.1 Analysis method

Linear structure model and partial least squares estimation method (PLS-SEM) are applied to test the proposed model and hypotheses. There are three main reasons PLS-SEM method is used: (1). To avoid problems related to small sample sizes, non-standard distribution data; (2). To estimate complex research models with intermediate, latent and observed variables, especially structural models; (3). To be suitable for prediction-oriented researches (Henseler et al., 2010).

3.2 Data collection method

Currently, the number of new agricultural co-operatives in Hau Giang Province is limited. However, this study has surveyed 40 new agricultural co-operatives using the direct interview method. The survey area includes Chau Thanh Districts (14 co-operatives), Chau Thanh A District (14 co-operatives) and Phung Hiep District (12 co-operatives). They are districts that have the largest number of new agricultural co-operatives in the province. Because of the limited sample size, the PLS-SEM is the most appropriate method (Wong, 2013).

4 RESEARCH RESULTS

4.1 New agricultural co-operatives' activities

Based on Figure 2, new agricultural co-operatives' production, trade, and service activities are diverse, including Breeding and seed supply, agricultural material supply and product consumption, harvesting, irrigation, and credit services,... Of which, 77.5% of new agricultural co-operatives have offered breeding and seed supply service. This is the main activity of most of

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the new agricultural co-operatives in Hau Giang Province because good seed sources demand of members is high. At the same time, agricultural material supply and agricultural product consumption are also concerned. There are 42.5% of new agricultural co-operatives participating in these two commercial activities. These are necessary activities in order to provide members with qualified and affordable input materials and ensure a stable output market for them. In addition, a few new agricultural co-operatives (25%) provide harvesting and irrigation services that meet the need of each member. These services are suitable for co-operatives' members participating in rice cultivation with large scales.

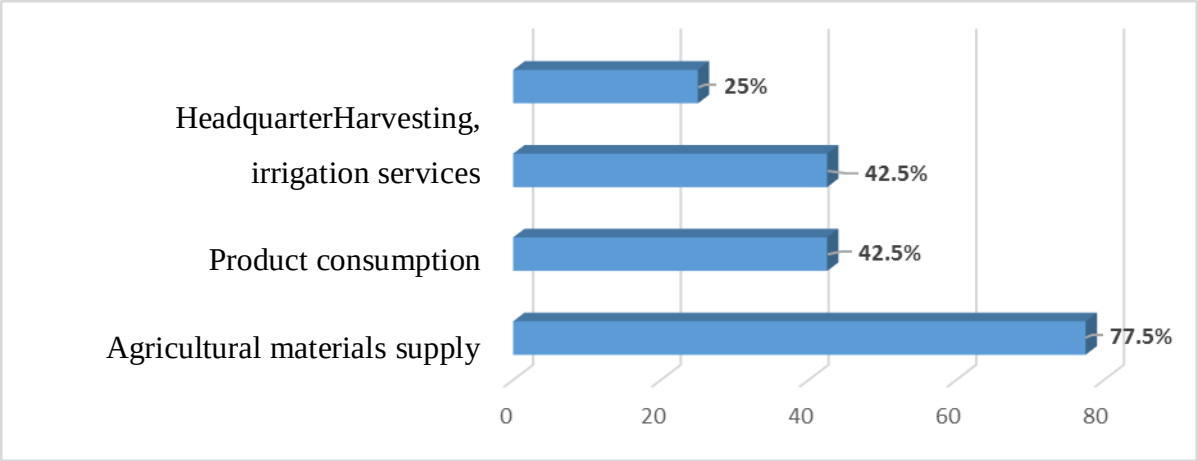

Figure 2: New agricultural co-operatives' activities
Source: Survey data, 2018

4.2 Profit by new agricultural co-operatives' activities

Based on the survey results in Table 2, the main activity of new agricultural co-operatives in Hau Giang Province is seed breeding and supply. These are the most effective activities (profit achieved is about 26.41 million VND/month). The profit rate for these activities is 56.4%. In addition, agricultural material supply also brings about 10 million VND/month, playing an important role in co-operatives' performance results. At the same time, product consumption contributed 5.8 million VND/month to the total profit. Although the efficiency from this activity is not high, it ensures the output market for members and helps maintain their belief in co-operatives. Finally, new agricultural co-operatives' services are small and seasonal, so the profits are not as high as other activities. They bring 5.26 million VND on average every month. In general, most new agricultural co-operatives' production, trade and service activities achieved good results. Beside profit targets, developing new agricultural co-operatives' activities is always associated with sharing and supporting members.

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Table 2: Average profitability of new agricultural co-operatives' services

Services	Revenue			Expenditure			Profitability		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
Breeding and seed supply	800,0	15,0	63,85	650,0	2,5	46,82	180,0	4,0	26,41
Agricultural material supply	1000,0	7,0	40,05	800,0	5,5	30,59	200,0	1,5	9,86
Product consumption	100,0	25,0	22,65	76,0	3,0	16,80	22,0	5,0	5,80
Harvesting, irrigation services	150,0	8,0	12,58	100,0	4,0	7,32	50,0	4,0	5,26

Source: Survey data, 2018

4.3 New agricultural co-operatives' difficulties

According to the survey results in Figure 3, the biggest difficulty of most new agricultural co-operatives is operation headquarters. Currently, the majority of new agricultural co-operatives do not have their own independent headquarters. The headquarter is usually located in the private house of one member in the Co-operative Management Board. This causes difficulties in organizing and arranging records, machinery, and equipment. Besides, new agricultural co-operatives are facing with small capital sources. Although members enthusiastically contributed to expanding co-operatives' scale, the capital source still did not meet co-operatives' needs. Next is difficulties in the output market and this is the difficulty of both co-operatives and members. Agricultural market's unusual fluctuations have caused unstable agricultural product consumption. Activities associated with the value chain production are in the formation phase, so have not been effective. Another difficulty that co-operatives are facing is the constraint in equipment and production technique. These are difficulties of most co-operatives in Hau Giang Province in particular and the Mekong Delta in general.

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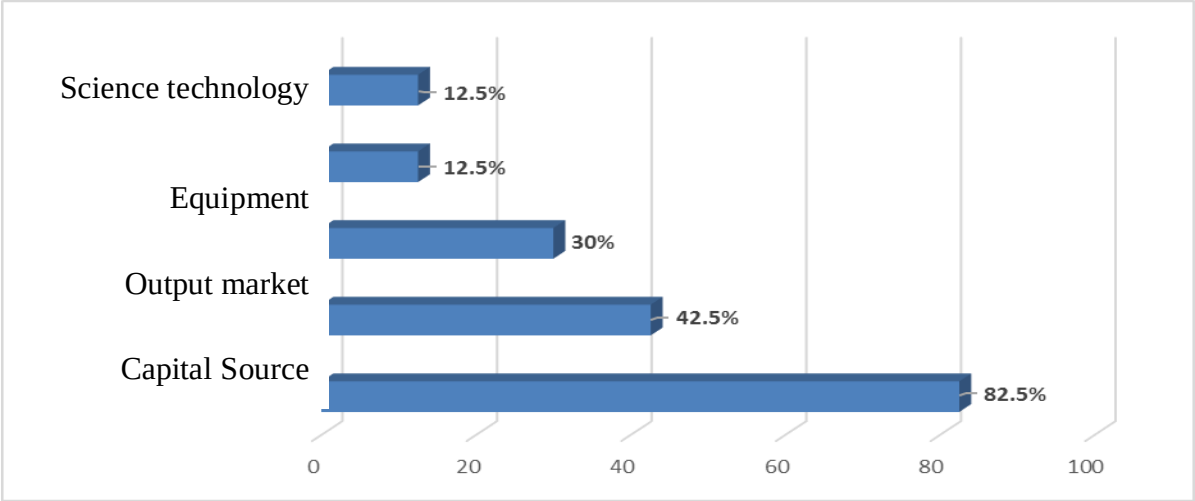

Figure 3: New agricultural co-operatives' difficulties
Source: Survey data, 2018

4.4 Factors affecting the performance of new agricultural co-operatives'

Cronbach's Alpha analysis

The result of Cronbach's Alpha analysis of 22 observed variables in 4 factors is good (greater than 0.7). This provides that all variables ensure credibility. In addition, all observed variables have an item-total correlation coefficient greater than 0.3 (Peterson, 1994). Therefore, 22 observed variables are all used for exploratory factor analysis.

Table 3: Cronbach's Alpha analysis result

No	Factors	Number of variables	Cronbach's Alpha	Corrected Item-Total Correlation
1	Capital source	6	0,744	0,420
2	Management ability	5	0,764	0,475
3	Co-operative's members	6	0,852	0,562
4	Performance result	5	0,853	0,584

Source: Survey data, 2018

Exploratory Factor Analysis (EFA)

EFA analysis used for independent variables achieved the following values: (1) Reliability of observed variables (Factor loading> 0.5); (2) Research model's suitability test (0.5 <KMO = 0.596 <1.0); (3) Bartlett test on correlation of observed variables (Sig. = 0.00 <0.05); (4) Total variance extracted = 54.57%> 50% (Hair et al, 1998). Observed variables achieve discriminant value and convergence. Thereby, 3 independent factors are formed from 17 observed variables. There is no disturbance of components, so factor names have still remained. Similarly, the results

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of EFA analysis for the "performance result" factor are as follow: (1) Reliability of observed variables (Factor loading> 0.5); (2) Research model's suitability test (0.5 <KMO = 0.828 <1.0); (3) Bartlett test on correlation of observed variables (Sig. = 0.00 <0.05); (4) average variance extracted (AVE) = 64.47%> 50% (Hair et al, 1998). Thus, the factor "performance result" is formed from 5 observed variables. There is no disturbance of components so the factor name has still remained.

Table 4: Factors formed from Exploratory Factor Analysis

No	Variables	Factors
1	6 variables: CS1, CS2, CS3, CS4, CS5, CS6	Capital source
2	5 variables: MA1, MA2, MA3, MA4, MA5	Management ability
3	6 variables: CM1, CM2, CM3, CM4, CM5, CM6	Co-operative's members
4	5 variables: PR1, PR2, PR3, PR4, PR5	Performance result

Source: Survey data, 2018

Structural Equation Analysis

The study uses composite reliability factor (CR), average variance extracted (AVE) and outer loading factor to evaluate the scale's reliability in accordance with the PLS-SEM method. In particular, the composite reliability factor must be greater than 0.7, and the outer loading factor must be greater than 0.4 (Hair et al., 2014). In addition, according to Fornell and Larcker (1981), average variance extracted that is greater than 0.5 will confirm the reliability and convergence value of the scale. Calculation results of composite reliability factor, outer loading factor and average variance extracted show that scales of all factors meet the requirements about reliability and convergence value.

Table 5: Scales' reliability and convergence value

Factors	Composite reliability	Convergence value
Capital source	0,792	0,602
Management ability	0,825	0,550
Co-operative's members	0,894	0,586
Performance result	0,898	0,644

Source: Survey data, 2018

To further analyze the discriminant validity, this study assesses the validity in SEM classification based on variance. HTMT standard is used (based on a comparison of heterotrait - heteromethod and monorail - heteromethod) to determine discriminant validity. If HTMT <0.85, it can be distinguished (Henseler et al., 2015). In this study, the coefficients are all smaller than 0.85, so the discriminant validity is established. In addition, collinearity is a potential problem in the

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structural model and the VIF value of 5 or more can indicate that problem (Hair et al., 2014). The VIF result shows that no VIF value is greater than 5, so there is no collinearity problem in this study.

After analyzing, all concepts meet the reliability and convergence value. The structural model is applied to test 3 hypotheses. The result shows that all 3/3 hypotheses are accepted. The H1 and H2 hypotheses are accepted at 1% significance level. Otherwise, the H3 hypothesis is accepted with a 5% significance level.

Table 6: Hypotheses analysis

Hypotheses	Relationship	T-test	Impact level	Result
H1	Capital source → Performance result	3,698	0,001*	Accept
H2	Management ability → Performance result	2,709	0,007*	Accept
H3	Co-operative's members → Performance result	1,974	0,032**	Accept

Source: Survey data, 2018 Note: *: significance level = 1%, **: significance level = 5%

Hypothesis H1: The result of PLS-SEM analysis shows that capital source positively affects the performance result of co-operatives, this is expressed by coefficient β = 0.001; t-value = 3,698> 2,56 and the value p = 0.000. This result is similar to researches of Von and John (2004), Mai Van Nam (2005), Pham Bao Duong and Le Thi Phuong (2016). This represents important roles of capital mobilization, members' contribution, the ability to access capital sources, the guarantee of capital sources for operating co-operatives' activities, and the efficient use of capital sources. If new agricultural co-operatives focus on these criteria, the performance result will be improved.

Hypothesis H2: The ability to manage positively affects new agricultural co-operatives' the performance results. This hypothesis is accepted after considering coefficients with β = 0.007; t-value = 2,709> 2,56 and p = 0,000. That means, there is a positive relationship between management ability and new agricultural co-operatives' performance result. John et al (2001), Mai Van Nam (2005), Amini and Ramezani (2008), Augustine (2016), Duong Ngoc Thanh and et al (2018) have the same result. This proves that, if the Co-operative Management Board has an educational level that meets work requirements, motivates members to participate in activities; assigns jobs in a suitable way; is knowledgable and understanding about agricultural product production and output market; has good social relationships and reputation, the performance results will be better. This is the reason for the Co-operative Management Board to acquire and supplement unfinished standards to improve management ability and performance result.

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Hypothesis H3: Members positively impact new agricultural co-operatives' performance result. The analysis results achieved following values: β = 0.032; t - value = 1,974> 1.96 with 95% confidence. Therefore, hypothesis H3 is accepted. Pathak and Kumar (2008), Mahazril et al (2012), Azmah et al (2012), Tran Quoc Nhan et al (2012), Msimango and Oladele (2013) have the same results. This proves an important role of members in co-operatives' performance result. When members have good production techniques and market knowledge; always support, respond to new policies; always contribute, comment in activities; contribute resources and materials to develop co-operatives; always share with common difficulties, new agricultural co-operatives' performance result will be further enhanced.

5. CONCLUSIONS AND RECOMMENDATIONS

In general, new agricultural co-operatives in Hau Giang Province operate relatively effectively. However, new agricultural co-operatives are still facing difficulties and challenges. Research has shown that the factors that positively affect new agricultural co-operatives' performance result are capital sources, management ability, and members. Therefore, the study proposes three recommendations to improve new agricultural co-operatives' performance result in Hau Giang Province.

Firstly, maximizing the role of co-operatives' members. Research has demonstrated that the active participation of members helps improve the performance result. At the same time, with difficulties in headquarter's location and capital source, maximizing the role of co-operatives' members is essential. The Co-operative Management Board needs to take advantage of members' support and response to build programs and plans to mobilize resources from members; as well as improve financial and material capabilities, build its own headquarter to ensure co-operatives operate smoothly and effectively.

Secondly, improving management ability. Management ability plays a significant role, positively influences new agricultural co-operatives' performance result. Therefore, the Co-operative Management Board should participate in training programs on management, business planning, advanced techniques, market information access. At the same time, building good relationships with socio-economic organizations should also be concerned by Co-operative Management Board to enhance the reputation.

Thirdly, enhancing financial capacity. The capital source is an essential factor, promoting the development of new agricultural co-operatives. However, new co-operatives are still facing difficulties with capital sources. The Co-operative Management Board should be more flexibility in capital mobilization. In addition to financial mobilization from the members, Co-operative Management Board needs to pay attention and take advantage of official credit sources through the Government's special credit programs.

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