

Research Article

An Assessment for PPP Adoption as an Alternative Government Approach to Finance Suspended Infrastructure Projects in Iraq

Jinan Kata'a Hassan* and Sedqi Esmaeel Rezouki

Civil Department, University of Baghdad, Baghdad, Iraq

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Abstract

Due to the decline in oil prices in 2014 and the years after, Iraqi government encouraged governmental institutions to engage private sector in financing infrastructure projects that have been suspended due the financial crisis through public- private sector partnership (PPP) as alternative source of funding. However, the participation of the private sector in filling that gap was unpromising. Therefore, this research is conducted to identify the reasons behind that in regard the projects of the Ministry of Construction and Housing and Public Municipalities (MoCHPW). 17 interviews were conducted as preliminary step of data collection where 13 major impediments have been identified and organized within a questionnaire that conducted with a participation of 98 respondents from public, private institutions and academics. Means comparison was used to rank impediments also nonparametric tests were used to assess the agreement level of survey sample groups' respondents towards. Findings indicated that the poor ability to conduct PPP projects feasibility studies by government organizations came the first on the top five impediments as ranked by overall respondents, followed by inability of government to set timetables for payments due to the lack of future vision of Iraqi cash status as it is influenced by the fluctuation in oil prices. The Lack of political commitment came at the third place and the lack of clear selection criteria for private partner at the fourth place and lack of private funding came at the fifth place. The overall findings indicated that government must more decisive in dealing with and resolving these impediments to ensure the success of PPP in Iraq.

Keywords: Suspended infrastructure projects, PPP, impediments, Iraq

1. Introduction

PPP defined as long-term contractual agreement between a public agency and a partner or consortium of companies from private sector to carryout the design, implementation, financing, operating and management of the infrastructure" (Araujo & Sutherland, 2010). In the partnership the responsibility of financing, constructing, asset management and maintenance, and service provision will be on the private partner; in return the private partner will obtain payments from the government and/or from user fees (Araujo & Sutherland, 2010.). As PPP agreements depend on private funding it will be an efficient tool for delivering infrastructure and filling the gap between required capital cost and government limited financial resources in addition to cost-effectiveness (Saussier, 2013). A proper risk sharing assumes to transfer risk to the party that best able to control. Accordingly government should not transfer risks that private sector will not be able to control and manage (Araujo & Sutherland, 2010). PPP have been

used worldwide in industrialized, industrializing, and developing countries. The purpose of PPPs adoption varies greatly from country to another, in industrialized countries like UK and Germany; PPP adopted in public service provision.

Meanwhile industrializing countries, with tremendous needs for basic infrastructure like China and India, PPPs used to sustain rapid economic growth it's usually seen in power, water or road sectors. (Hans Alfen *et al*, 2009) In developing countries PPP adopted to overcome the shortage in the governments' financial resources (Cheung *et al*. 2009) or to fulfill conditions imposed by International Organizations to provide loans. (Jamali, 2004; Thomas *et al*. 2006; Appuhami *et al*, 2011) In the case of Iraq as developing country, Government of Iraq (GOI) faced a severe shortage in funding due the decline in oil prices in 2014, which made GOI suspend near 2700 under-construction infrastructure projects funded under the government capital budget projects (Ministry of Planning budget execution report, 2017). As a solution to prevent destruction of the projects that had reached high percent of completion and to fulfill the shortage in basic services by new project too. The study aims to explore viability and applicability of PPP in financing in

*Corresponding author's ORCID ID: 0000-0002-6135-2830
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MoCHPW's infrastructure projects and to indicate impediments that hinder the use of PPP using quantitative methods.

The paper consists of the following sections; section 2 discuss government actions to support the use of PPP, section 3 discuss the conditions for successful PPPs, section 4 provides details about the applied research approach, section 5 highlighted Results discussions, and finally, section 6 summarizes overall conclusions of this paper

2. Government actions to support the use of PPP for infrastructure development

Through the past 15 years the existing PPP Projects were procured based on different laws including act No. 22 enacted in 1997 for public, the act of firms No. 21 enacted in 1997, Investment act No. 13 of 2006. There is no designated PPP law enacted to be the legal base for PPP projects agreement in Iraq. It can be noticed that these laws are not targeting infrastructure projects. To encourage the participation of the private sector in infrastructure development, GOI took the following actions (Ministry of Planning budget execution report, 2017):

- 1) Issuing the Council of Ministers' decision No. 340 of 2015, which authorize the governmental institutions to negotiate with the contractors for the completion of the projects by them or through a second financier to complete the remaining works of the projects that have high percent of completion with an interest rate not exceeding 10%.
- 2) Provide a legal cover to PPP projects in the State Budget Law of 2015, 2016, and 2017 through the provisions of articles 16, 15 and 14 respectively.
- 3) Forming PPP steering committee in the prime minister office
- 4) Issuing the guidelines and regulation of PPP projects implementation for new and suspended under-construction projects which prepared by the Ministry of Planning (MoP) and the steering committee.
- 5) Issuing Council of Ministers' decision no.239 of 2015 by which a package of procedures and policies to support the private sector have been approved,

Despite these actions the progress in the use of PPP to finance and complete the suspended under-construction infrastructure or the new projects was very poor. Moreover, for political reasons the Parliament disapproved the inclusion of PPP article in the State Budget Law of 2018 and 2019 which have a highly impact in hindering the use of PPP.

3. Conditions for successful PPPs

Although PPP considered being a promising approach for infrastructure development and the provision of

services in the different countries around the world, PPP could be inadvisable for some government and for some projects. Accordingly, lessons learned from international best practices have identified conditions that should be fulfilled to increase the possibility of a successful PPP implementation. (Lammam, *et al* , 2013).

3.1 Committed political leadership

The transition in infrastructure's procurement from traditional public procurement to PPP is an approach adopted by political leadership and be obligated to by the top of governmental hierarchical. If PPP be committed at that level the mobilization of resources needed for PPP success will be guaranteed (OCED, 2015).

3.2 Project is suited to PPP model

Project that best suits the PPP model should have a number of the following features (Murphy, 2008; Ross, 2008; Eggers and Startup,2006): 1) adequate number private companies a proper qualification to ensure competitive bidding ; 2) Innovation possibilities ; 3) project is self-financed ; 4) provide loop of feedback starting from price setting to a provision of service; 5) possibility of tasks bundling; 6) Possibility of proper risk transfer to private partner; 7) the need to obtain private sector specialization that public sector is lacking to; 8) Project outputs' specifications can be well defined and measured ; 9) Large strategic projects to obtain a possibility of spreading out the capital cost of along the contract term; 10) An adequate preparation time to ensure the contract will be negotiated properly.

3.3 Institutional Structures and Legal/Regulatory Framework

There are fundamental principles for PPP implementation at the program level which they are (AbdelAziz, 2007): 1) The availability of PPP institutional legal framework and Policy; 2) Implementation of PPP units; 3) Perception of PPP objectives; 4) Performance and method specifications. Enabling environment is an essential element to PPP success this may include: 1) A systematic assessment and revision of current legislation and regulations and the need for development of new ones; 2) The establishment of a standardized approval's processes and a sound interagency coordination to avoid and eliminate any institutional and/or regulatory barriers to PPP implementation, this may implemented on both levels local and national (OECD, 2012). 3) To ensure that all the needed approvals can be provided without delay the practice of the one-stop-shop can be suitable solution to PPPs projects, where the PPP units or the contracting organization can handle the provision of these approvals (OCED,2015).

3.4 The proper risks sharing

Allocating anticipated risks to the party that best able to manage and control it is the only way to achieve value for money. Furthermore, the lack of transferring enough risk to the private partner, will lead to the lack of motivations to achieve PPP expected objectives (Scribner, 2011).

3.5 Law authority and the independence of judiciary system

One of the most attractive factors for investors to undertake PPP projects is the Law authority and the independence of judiciary system in protecting contractual and ownership rights (OECD, 2012). Another important factor is the clear and timely manner disputes' resolution procedures. Where government must set into place such procedures to ensure a good disputes resolution are available wherever disagreements arise throughout the agreement term (OECD, 2012).

3.6 Public sector ability

Government should work on three aspects to ensure a proper implementation of (Murphy, 2008): 1) Consensus building between the different stakeholders including society to ensure acceptance of PPP projects; 2) Sustain an efficient PPP contract management throughout PPP project lifecycle; 3) highly qualified staff legally, financially, and technically apart from political impact to ensure that PPP optimum features risks sharing, value for money, and PPP project monitoring is achieved.

4. Research approach

4.1 The used tools

Using of the same concept applied in (Li, B., et al, 2005), (Al-juboori, 2015) and (Babatunde, S.O., et al, 2016) studies, the study implemented based on a quantitative analysis. Interviews were conducted with 17 governmental officials, contractors, private companies and private banks to identify the essential reasons that hindered the use of PPP to finance the completion of suspended under-construction projects

followed by structured questionnaires to identify their standpoints on the theme of the research presented in this paper. The questionnaire divided into five parts. This paper is targeted to present the first two parts. Part 1 presents respondents' general data. Part 2 aims to identify respondent agreement on the identified impediments through the interviews using Likert 6 point scale , where; 1 = strongly disagree, 6 = strongly agree; 0= don't Know/ inapplicable. Table 1 presents thirteen reasons identified through the interviews and listed in the questionnaire that hinder the progress of the use of PPP.

4.2 Questionnaire distribution and data collection

150 questionnaires survey are distributed using separate questionnaire hard copies as well as an online questionnaire using google drive forms and distributed to public sector organizations work in the infrastructure projects development, private sector companies, private banks and academics. 116 questionnaires were returned which form (77%) of the total distribution. On the other hand 98 questionnaires are answered where 18 of the returned questionnaires deemed ineligible due to improper survey's respondent, blanked answers, ineligible, and multiple answers. The percent of questionnaire returned and valid (84%) is considered adequate for the purpose of analysis and reporting based (Miller, 1993).

4.3 Data analysis

The 98 returned valid questionnaires were analyzed using Statistical Package of Social Science (SPSS) version 25. Respondents' general information was analyzed using descriptive analysis and the mean comparison used to rank the thirteen identified impediments. As the Normality test have been checked and data set is not following a normal distribution, the Kendall's Coefficient of Concordance is used to test the internal agreement between the respondents within the same group; and Kruskal Wallis H test is conducted to test the agreement among respondents of the survey groups' on ranking impediments behind not using PPP in completing suspended infrastructure projects.

Table 1 Reasons hindering the PPP use progress

Category	Code	Reason
Regulatory and institutional	R1	Lack of a solid mechanism for PPP projects feasibility studies preparation in government organizations.
	R2	There is no competent office (PPP units) have been established in governmental organizations in both levels of national and local government, provided with the needed capacity building on PPP to run and manage the process.
	R3	Lack of clear selection criteria for private partner.
	R4	Lack of a clear and specific mechanism for negotiation, risk identification and better allocation of responsibilities between the two sectors in the different types of PPP.

	R5	Lack of political commitment to mobilize the needed resources and the establishment of supporting legal and regulatory framework to the success of PPP.
	R6	The issued PPP guidelines and regulations are complicated not easy to be understood by public sector organizations resulted in weak ability for implementation.
	R7	Lengthy approvals procedures as it related to higher authorities, which requires more time.
Legal	R8	PPP law hasn't been legislated yet to cover this type of contract.
	R9	The majority of suspended projects are related to obstacles and pending problems (including contractors' unpaid payments) that must be resolved first before setting PPP transition agreement.
Financial	R10	Private sector reluctance to submit for PPP infrastructure projects as they are not feasible if implemented as an investment opportunity unless being supported financially by government.
	R11	Some projects required additional costs as their previous feasibility study is not prepared in accordance to PPP from technical and economic aspects.
	R12	Government has no future vision of Iraqi Cash status, to set timetables for payments.
	R13	Lack of concessional funding (lack of private funding)

Table 2 The General information of respondents

S. No.	Respondents profile	Percentage of respondents in the survey sample			
		Overall	Public	Private	Academics
1.	Sector of work	100%	56.2%	26.5%	17.3%
2.	Years of Experience in work				
		Overall	Public	Private	Academics
	5 Years or less	1%		3.8%	
	6-10 Years	5%	9.1%		
	11-15 Years	14.3%	18.2%	11.5%	5.9%
	16-20 Years	29.6%	29.1%	26.9%	35.3%
	Over 21 year	50%	43.6%	57.7%	58.8%
3.	Years of experience in PPP projects implementation				
		Overall	Public	Private	Academics
	Non	44.9%	52.7%	30.8%	41.2%
	1-2 years or less	13.3%	14.5%	11.5%	11.8%
	3-5 years	21.4%	21.8%	23.1%	17.6%
	Over 6 years	20.4%	10.9%	34.6%	29.4%

5. Results discussions

5.1 Respondents general information and rate of response

Table 2 shows the general information of the respondents. Public sector respondents form 56. % of survey respondents, while private sector form 27% and academics form 17%. In regard the general work experience, respondents who have general work experience not less than 21 years form 50% of the whole respondent followed by those with general work experience of 16-20 years by 29.6% then those with general work experience of 11-15 years by 14.3% and those who have general work experience of 6-10 years by 5.3%. While those with general work experience of 5 years or less were only 1% . Findings show that those who have at least 21 years of general working experience form majority of public, private sectors and

academics respondents by 43.6%, 57.7%, and 58.8% respectively. Indicating that the target respondents have an adequate experience that to provide a balanced view and reliability for the research survey. In relation to the years of experience in PPP projects implementation, finding shows that 53% of respondents from the public sector are lacking the experience in PPP projects, forming the highest percent within the three groups of respondents, followed by academics respondents with 41.2%. Meanwhile the percentage of respondents from the private sector who have no previous experience is 30.8%. Furthermore, the lowest percentage is 10.9% of public sector's respondents, who have over 6 years' of experience. As the implementation of PPP projects is not conducted widely and limited to a few number projects in Iraq (PPI/WB, 2018), it is expected to find that more than one-half (53%) of respondents from the public sector have no previous experience in PPP.

Table 3 The reasons rating by the survey group's respondents

Code	Public			Private			Academic			All respondents		
	Mean Value	standard deviation	Mean ranking	Mean Value	standard deviation	Mean ranking	Mean Value	standard deviation	Mean ranking	Mean Value	standard deviation	Mean ranking
R1	5.64	0.649	2	5.62	0.571	13	5.47	0.717	4	5.6	0.638	1
R2	5.55	0.571	4	5.19	0.634	9	5.53	0.624	3	5.45	0.611	9
R3	5.56	0.739	3	5.54	0.647	8	5.41	0.795	5	5.53	0.721	4
R4	5.36	0.62	12	5.27	0.533	11	5.29	0.686	12	5.33	0.605	12
R5	5.64	0.557	1	5.35	0.745	4	5.59	0.618	1	5.55	0.628	3
R6	5.51	0.717	7	5.46	0.706	7	5.41	0.712	6	5.48	0.707	7
R7	5.42	0.567	11	5.15	0.732	12	5.35	0.606	10	5.34	0.625	11
R8	5.29	0.658	13	5.23	0.587	10	5.24	0.752	13	5.27	0.651	13
R9	5.47	0.634	8	5.69	0.549	3	5.35	0.702	9	5.51	0.630	6
R10	5.45	0.689	9	5.62	0.637	2	5.29	0.772	11	5.47	0.692	8
R11	5.44	0.788	10	5.46	0.647	6	5.35	0.786	8	5.43	0.746	10
R12	5.55	0.571	5	5.73	0.533	1	5.41	0.618	7	5.57	0.574	2
R13	5.53	0.716	6	5.5	0.583	5	5.53	0.624	2	5.52	0.662	5

5.2 Result on reasons hindering the use of PPP for the completion of suspended under-construction projects

Reasons hindering the use of PPP in completing suspended Infrastructure projects are rated by the survey overall respondents in table 3. The top five reasons ranked by overall respondents are:

- 1) The lack of a solid mechanism for PPP projects feasibility studies preparation in government organizations Government has no future vision of Iraqi Cash status to set timetables for payments.
- 2) Government has no future vision of Iraqi Cash status, to set timetables for payments
- 3) Lack of political commitment
- 4) Lack of a clear selection criteria for private partner
- 5) Lack of concessional funding (lack of private funding)

As the research used Likert scale from 1 to 6 as mentioned before, accordingly a value that's above 3.5 indicate that the reason is important. Findings show that all reasons are above a mean of 3.5.

It can be seen that the means values for these reasons as rated by the respondents from public sector are ranged from 5.29 to 5.64, which indicate a small variance in the responses by (0.35). The means values of private sector and academics respondents are from 5.15 to 5.73 and 5.24 to 5.59 respectively.

Means values differences are also small by (0.58) and (0.35) respectively. The small differences in means shown in the survey groups indicate that survey respondents have rated the reasons much more consistently.

The first reasons rank on the top of five reasons by both public sector and academics respondents is "Lack of political commitment to mobilize the needed resources and the establishment of supporting environment" Meanwhile private respondents ranked this reasons lower at fourth order. The respondents from both public sector and academic institutions ranked it at first order based on their perception for the challenges that may appear through the PPP

development which demand a decisiveness and prompt actions on the different levels of the government hierarchical (OECD, 2012).

The second reason ranked by public sector's respondents is "Lack of a solid mechanism for PPP projects feasibility studies preparation in government organizations" also it has been placed at the fourth order by academics. Which may reflect their awareness to the importance of knowledge area due to the complex nature of PPP projects required a comprehensive feasibility study that will verify if the commercial viability and the value for money of the PPP project will be achieved or not, and the importance of this step to gain the required appraisal to proceed into the next steps. On the other hand ranking this factor lower at thirteenth place by private sector

respondents, indicating that private sector may have better knowledge in this area taking into consideration the projects feasibility studies is fundamental element in construction business.

The third reason ranked by the respondents from public sector is "Lack of clear criteria for the best selection of private partner/consortium." Which is also have been placed at fifth order by academic respondents indicating the importance of choosing competent private partner and also the realistic fears of both public sector and academic respondents from the consequences if the private partner fail in fulfilling his obligations. Meanwhile respondents of private sector placed it lower at eighth place.

The fourth reason ranked by the public sector respondents is "There is no competent office (PPP units) have been established in governmental organizations in both levels of national and local government, provided with the needed capacity building on PPP to run and manage the process" which indicate the public sector concern regarding this new approach in infrastructure procurement. The academics have the same concern as the ranked it at the third place as this represent a main obstacle in implementing PPP projects public organizations have a big role in all PPP projects lifecycle different stages

accordingly a PPP units must be established and supported with the adequate capacity building programs to handle the management of this new approach. While private sector respondents ranked this reason at the ninth place.

The fifth reason ranked by the public sector respondents is "Government have no future vision of Iraqi Cash status, to set timetables for payments" which indicate the public sector concern regarding adopting the PPP approach will enable the government to accelerate the development of infrastructure in one year and will record less expenditure for the same year. Accordingly the government will be committed to pay annual payments that will increase the expenditures in the future. On the other hand, as oil represents the main resource of the government budget which always is affected by the fluctuation in the oil markets, the government ability to fulfill these obligations will be questioned. Private sector respondents ranked this reason in the first place indicating their major concern as PPP infrastructure projects are not feasible without government financial. While the academic respondents ranked it at the seventh place.

Table 4 illustrate Kendall's coefficient of concordance for survey groups where the zero supposition is $H_0: W=Zero$ and alternative supposition is $H_1: W \neq Zero$. As we tested 13 impediments which more than seven, the value of Chi-square will be used in identifying the group concordance instead of the value of Kendall's W . It can be seen from table 4 that the Chi-square critical value for each one of the three groups is 18.55 at a degree of freedom (df) = 12. As the calculated Chi-square values for the three groups of the survey, obtained by the outputs of SPSS are all larger than Chi-square critical value as shown in table 4, indicating an agreement between the respondents within the same group on impediments' ranking.

Table 4 Kendall's W test results on reasons ranking

Item	Public sector	Private sector	Academics
Respondents number	55	17	26
Kendall's W	0.096	.144	.299
df	63.659	29.400	93.439
Asymp. Sig.	12	12	12
Chi-Square	0.000	.003	.000
Critical value of Chi-square	18.55	18.55	18.55

The nonparametric statistical, Kruskal Wallis test is conducted to examine agreement level among all respondents in the three groups of the survey on impediments ranking. Where the Zero supposition is the significance value of median for an impediment is equal amongst the survey groups. Table 5 illustrate the results of the test, that have been obtained through the SPSS, where the value of Chi-square will represent H, while (Asymp Sig.) will represent P-value as the number of respondents in each of the three groups is greater than 5. This means a probability of obtaining a

certain H value equal to the parallel p-value to a Chi-square at degrees of freedom (df) equal to $n-1$. Results reveal that the P-value for all the 13 impediments is larger than 0.05 thus, zero supposition is accepted, indicating a concordance amongst the survey groups on impediments ranking without any significant difference.

Table 5 Kruskal Wallis test results for reasons hindering the use of PPP

Reasons for not using PPP in completing suspended infrastructure projects	Chi-Square	df	Asymp. Sig.
Lack of a solid mechanism for PPP projects feasibility studies preparation in government organizations.	1.101	2	0.58
There is no competent office (PPP units) have been established in governmental organizations in both levels of national and local government, provided with the needed capacity building on PPP to run and manage the process.	6.258	2	0.14
Lack of a clear selection criteria for private partner	0.813	2	0.67
Lack of a clear and specific mechanism for negotiation, risk identification and better allocation of responsibilities between the two sectors in the different types of PPP	0.668	2	0.72
Lack of political commitment to mobilize the needed resources and the establishment of supporting environment	3.075	2	0.22
The issued PPP guidelines and regulations are complicated not easy to be understood by public sector organizations resulted in weak ability for implementation	0.463	2	0.79
Lengthy approvals procedures as it related to higher authorities, which requires more time	2.372	2	0.31
PPP law hasn't been legislated yet to cover this type of contract	0.255	2	0.88
The majority of suspended projects are related to obstacles and pending problems (including contractors' unpaid payments) that must be resolved first before setting PPP transition agreement	0.362	2	0.84
Private sector reluctance to submit for PPP infrastructure projects as they are not feasible if implemented as an investment opportunity unless being supported financially by government	2.349	2	0.31
Some projects required additional costs as their previous feasibility study is not prepared in accordance to PPP from technical and economic aspects.	0.266	2	0.88
Government has no future vision of Iraqi Cash status, to set timetables for payments	4.014	2	0.13
Lack of concessional funding (lack of private funding)	3.597	2	0.17

Conclusion

The study is used identify the reasons that hampered the use of PPP in financing and completing the suspended infrastructure projects in Iraq which represent a serious impediment for the development of PPP, where the government took the decision to adopt this approach without any study or preparation to support its progress. According to the overall results the government should work intensively to deal with

and rectify these impediments to ensure successful application of PPP. The government should:

- 1) Legislating PPP law as soon as possible to cover this type of contract, in addition to the establishment PPP units, the development of a comprehensive regulatory framework combined with specific and clear selection criteria of the best private partner.
- 2) As the research indicated a weakness in the capacity of the public sector thus, improving the capacity of the public sector by intense and specialized capacity building programs in the areas of identifying PPP projects, feasibility studies and projects appraisal, risk identification and allocation, negotiation and contract design is a priority. The contracting with specialized agencies to support the public organization with the required expertises and provide in-job training to run the process is a favored option.
- 3) Government should provide the different types of support including issuing long term bonds to encourage the participation of the private banks and private sector.
- 4) Reforming and standardizing approvals procedures wherever possible, delegate the authorities wherever necessary, and improve the interagency condition to save time and support the application of PPP approach.
- 5) In order to apply the use of PPP to complete the suspended under-construction projects the bending problems should be solved and a settlement and agreement should be achieved between both sectors to guarantee the rights of both partners.

There are two limitation must be to be mentioned for a reasonable interpretation of the study findings. First, the majority of public sector respondents were form Ministry of Construction and Housing and Public Municipalities, in addition to minority from the National Investment Commission, Ministry of Planning, Ministry of Industry and Ministry of Electricity. Also the majority of private sector companies and contractors are specialized in executing the water and wastewater and roads projects which is the major theme of the Ministry of Construction and Housing and Public Municipalities works. Thus, the finding of this paper is based on their opinion; accordingly for future studies may consider cover other types of infrastructure. Second, As PPP is newly practiced in Iraq, and there is limited experience with. Thus the opinions of respondents presented in the study may subject to a bias despite the researcher efforts striving to ensure the participation of those who have experienced PPP or at least an awareness and knowledge on PPPs. Despite the limitations, this study has identified the impediments that government should deal with and solve to ensure the success of PPP for suspended under-construction projects as well as new projects.

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