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KIBS FOR PUBLIC NEEDS

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Knowledge intensive business services (KIBS) are a rapidly developing sector of modern economies. Numerous studies suggest that KIBS facilitate knowledge exchange between providers and consumers, and improve the innovativeness of the latter. However, because KIBS are strongly reliant on service co-production by the customer and provider working in partnership, intensive cooperation between the two parties is essential. Public procurement may offer supporting mechanisms for this sector, both directly (by purchasing services) and indirectly (by demonstrating the benefits of KIBS consumption, which may stimulate a demand for them from the private sector). Yet, legislative constraints on the types of admissible public procurement mechanisms may have an undesirable effect on the provider selection, meaning that services may not be purchased from the most efficient or the most suitable provider. Alongside this, public bodies are known to be managerially less efficient than private firms, partly due to their distorted system of incentives. These key differences between the public and private sectors motivated us to study the efficiency of publicly procuring KIBS. In particular, we find that consumers of KIBS in the public sector report lower satisfaction from KIBS and admit a lower level of co-production than the private sector. Our main recommendations refer to the optimal choice of procurement mechanisms and the system of incentives in public institutions.

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Introduction

Knowledge intensive [business] services (KIBS) are a rapidly developing sector in modern economies. KIBS facilitate innovation processes and foster technological development (see e.g. Antonelli, 1998; den Hertog, 2000; Haukness, 2000; Muller and Zenker, 2001; Tether, 2003; Koch and Stahlecker, 2006; Simmie and Strambach, 2006). One of their key properties is customization; the service is tailored to the individual needs of the particular customer and cannot be replicated (see discussion by Tether et al., 2001). This requires a high intensity of co-production (the involvement of customers in the provision of the service, see for example Marion, 1997, Spohrer and Maglio, 2008). Co-production generates a spillover of knowledge between the service provider and the customer (Doroshenko, 2012; Miles, 2012). This knowledge transfer distinguishes KIBS from other goods and services, and implies that the use of standard economic mechanisms for the selection of service providers might lead to inefficient outcomes. This is mainly due to the competitive nature of the most commonly used mechanisms, where competition is not well defined for heterogeneous (customized) products. The problem is most evident for public procurement procedures.

The role of public procurement is twofold. First, it is aimed at obtaining goods and services for public needs. Second, government purchases can be used to provide a stimulus via state intervention to support selected economic sectors (and the economy as a whole) through the multiplier effect.⁵ For example, Edler and Georghiou (2007) discuss the stimulating role of public procurement with regard to innovations. This effect, in turn, may be both direct, by purchasing the services from the KIBS sector, and indirect, by demonstrating the benefits of KIBS consumption to the private sector (the indirect effect is discussed in Doroshenko et al., 2012). Typically, private institutions fix small budgets for externally ordered services, but some priority areas may attract preferential public financing, thus becoming more attractive for customers. Science and the research and development of innovations are examples of sectors where public funding can stimulate private demand. In an international context, Uyarra et al. (2014) emphasize that public procurement mechanisms are associated with "the lack of interaction with procuring organizations, the use of over-specified tenders as opposed to outcome based specifications, low competences of procurers and a poor management of risk during the procurement process". These barriers result in the reduced ability of suppliers to innovate, and in less innovative products and services supplied to the public sector.

Previous research has studied the issue of efficiency of public procurement, particularly

⁵ E.g. the government may be interested in supporting domestic producers and thus tends to encourage purchases of goods and services from them.

in the Russian context, from various perspectives. For example, Ivanov (2012) indicates that although auctions are meant to be a competitive (and thus expected to be efficient) method of procurement, they rarely demonstrate price efficiency when used in public procurement in Russia. The author explains this by a high degree of corruption. Yakovlev et al. (2013) indicate numerous provisions in the legislation that allow purchasing authorities to avoid competitive procedures. At the same time, interestingly, they find that the strongest gains from competition in procurement become evident with just 2-3 potential suppliers taking part in the procurement procedures. Balsevich et al. (2012) analyze types of opportunistic behavior in public procurement, in order to explain inefficiencies in the latter. The vast majority of research interprets inefficiencies in procurement in terms of excessively high prices paid or insufficient savings generated by procurement procedures. A notable exception here is Balsevich et al. (2011) who focus on the degree of informational transparency in public procurement in Russia, which has implications for a broader class of (in-)efficiencies. In our paper, efficiency is linked to a whole range of (potentially unquantifiable) criteria that underlie the choice of the procurement method. As a benchmark for efficiency, we take the unconstrained choice by freely competitive firms, which we then compare with the procurement methods and the resulting levels of satisfaction of public institutions and government bodies, which are constrained by the procurement legislation.

Our main research question is whether the public sector can fully benefit from purchasing KIBS. We measure the efficiency of purchases by evaluating the ability of KIBS consumers to absorb services, and their satisfaction from the services ordered. Similar metrics for private customers of similar KIBS serve as benchmarks for comparison. We expect a lower efficiency of KIBS in the public sector for the following reasons: (1) legislative restrictions on the methods to be applied when choosing suppliers; (2) weaker incentives for the public sector to co-produce effectively; (3) the public sector possessing less experience due to legislative provisions that do not encourage long-term relationships with suppliers (anti-corruption provisions). We will now explore these three points in more detail.

Generally, public procurement is heavily regulated. Regulation aims to improve competitiveness in procurement by ensuring that more potential providers are involved in the procurement mechanism, which would lead to purchasing goods and services at lower prices and under better conditions, such as delivery terms. However, competition is associated mainly with highly homogeneous goods and services. For highly customized KIBS, true competition is not really possible due to their heterogeneity, and so a flexibility in choice among various procurement procedures is desirable. This is the reason why we suggest that private business may be more efficient at selecting the best providers of KIBS than the public sector.

Private businesses also have more incentives to be engaged in effective co-production with KIBS providers, for the sake of proper customization. The government and public institutions are usually non-profit, and numerous studies show internal managerial inefficiencies within them. A review of literature on the advantages of privatized businesses as compared to state-owned ones can be found in Megginson and Netter (2001). In a later work, Bartel and Harrison (2005) explicitly show that, in comparable conditions, the performance of public sector enterprises is below that of their private-sector peers, and privatization is thus deemed to improve performance. We also expect a lower degree and efficiency of co-production from public consumers of KIBS than from private business, due to better incentives and less constraints for private businesses. This implies that the knowledge transfer through co-production would not be so pronounced in the public sector, than in the private one. In this sense, our paper contributes to the old debate on the differences between public and private organizations (see e.g. a seminal review by Rainey et al., 1976; Lan and Rainey, 1992, particularly on managers' objectives in public and private enterprises).

Finally, existing procurement regulations either explicitly or implicitly forbid long-term customer relationships between procuring bodies and suppliers of goods and services. Although there are usually no direct restrictions on establishing long-term supplier-consumer relationships, legislation requires that standard competitive procedures are used for each contract, thereby making it likely that new contracts would be served by new suppliers. Moreover, legislation including the UNCITRAL Model Law, are very clear about the criteria that can be used to select suppliers, prohibiting preferential treatment of any of them. Establishing a long-term relationship with a supplier is therefore complicated. However, a partnership experience and trust in the particular KIBS provider may contribute significantly to a customer's absorptive capacity. Private businesses face no constraints in this regard, whilst public institutions do, and public institutions would have a poorer experience with KIBS and so be less efficient in KIBS consumption, than private businesses.

Data and methodology

Our study is based on survey data from Russia, which were collected within the annual monitoring of the KIBS sector, since 2007. The monitoring covered ten sectors: advertising, marketing, audit, IT-services, recruitment, engineering, financial advice, legal advice, property development services, and business design. This range includes most of the activities described as KIBS in the existing literature (see e.g. Doroshenko et al., 2014, for more details).

Specialized surveys covered about 600 producers of KIBS annually. Questionnaires included a set of questions that were asked each year and a set of specific questions that were asked only in particular year(s). The surveys were designed as semi-structured interviews with

executives who answered questions on their own company and on more general market developments. All surveys were anonymous. Some firms may participate in several surveys (not necessarily successive), but this does not imply generalised results because only 15-20% of respondents reported that they participated twice.

In 2007 and 2011, parallel surveys covered over 700 business consumers of KIBS. The survey design was similar to KIBS providers one, and the questionnaires were as similar as possible, i.e. they aimed to include the same questions as the questionnaires for providers, for comparability.

The 2007 survey also included public sector consumers (214 respondents) who answered the same questions as private ones, and these are the data that we use in this paper. Both business and private consumers were asked about their experiences with all KIBS sectors, and so we obtained over 2000 observations from private customers and over 300 observations from public ones. For the analysis, we used the data from the 2007 survey, as our focus is on the public-versus-private comparison. If examples (of general developments) from other surveys are given, this will be specifically mentioned.

Table 1 reports the scope of the survey in 2007. It was conducted in 13 cities from 9 regions. To obtain a more detailed picture, we divided respondents from the public sector into two groups: government/municipal bodies (149 respondents) and other public sector institutions, like public nurseries, public schools and libraries (65 respondents). For comparison, 781 respondents from the private sector were surveyed.

Table 1. Fractions of public sector and private sector organisations that used KIBS in the previous three years

		MKT	AD	ADT	IT	ENG	REC	DSGN	DVP	FIN	LEG	Total responses
Govt/municipal bodies (Number of respondents =149)	Number of responses	16	62	15	55	29	26	32	10	20	37	302
	% of respondents	10.7	41.61	10.1	36.9	19.5	17.5	21.5	6.7	13.4	24.8	
Public sector institutions (Number of respondents =65)	Number of responses	10	27	25	21	24	15	9	8	20	13	172
	% of respondents	15.4	41.54	38.5	32.3	36.9	23.1	13.9	12.3	30.8	20.0	
Private sector (Number of respondents =781)	Number of responses	610	266	395	338	340	214	204	323	232	382	3304
	% of respondents	78.1	34.06	50.6	43.3	43.5	27.4	26.1	41.4	29.7	48.9	

Notes:

1) AD = Advertising; MKT = Marketing services; ADT = Audit; IT = Information Technology services; REC = Recruitment services; ENG = Engineering services; FIN = Financial Advice

services; LEG = Legal Advice services; DVP = Property Development services; DSGN = Business Design

2) Percentage rows do not add up to 100 because every respondent answered questions about all consumed services, i.e. gave from 1 to 10 responses.

Source: ISSEK-ROMIR surveys, 2007.

Table 1 reveals an uneven structure of KIBS purchased by the public sector, with the majority of respondents having experience with advertising. Only a few of them used marketing or property development services. One of the main observations from this data is that the private sector is more homogeneous in terms of their experience with KIBS, whereas the public sector demonstrates excessive concentration in some areas (e.g. advertising and IT) and quite a limited experience with others (e.g. marketing). The data indicate that public sector institutions are more actively consuming KIBS, as compared with government bodies. The most frequently purchased services for both of them have been advertisement and IT. Public sector institutions have more frequently been provided with audit (38.5% against 10.1% for government bodies), engineering (36.9% against 19.5%) and financial services (30.8% against 13.4%).

Tab. 2. Types of KIBS purchased by the public sector (survey of 2007)

Percentage of responses to the question: "Did you purchase KIBS in the following sectors?"

	Avg	Sectors									
		MKT	AD	ADT	IT	ENG	REC	DSGN	DVP	FIN	LEG
Government bodies	20.2	10.7	41.6	10.1	36.9	19.5	17.4	21.5	6.7	13.4	24.8
Public institutions	26.2	12.3	41.5	38.5	32.3	36.9	23.1	13.9	12.3	30.8	20.0

Notes:

1) AD = Advertising; MKT = Marketing services; ADT = Audit; IT = Information Technology services; REC = Recruitment services; ENG = Engineering services; FIN = Financial Advice services; LEG = Legal Advice services; DVP = Property Development services; DSGN = Business Design

2) Percentage rows do not add up to 100 because every respondent answered questions about all consumed services, i.e. gave from 1 to 10 responses.

Source: ISSEK-ROMIR surveys, 2007.

Table 2 shows the percentages of respondents in the public sector that reported having purchased KIBS in their respective sectors (respondents from the private sector were not asked

this question). Although it is theoretically possible that some services are used without being actually purchased (e.g. sponsorship, donorship or access to the service that had been purchased by a different institutional structure, which is possible in the public sector), a comparison of Tables 1 and 2 reveals that the amounts of purchases and amounts of usage are highly correlated. This allows us to relate the usage-related features (like levels of satisfaction or absorption of services) to the method of procurement used.

On average, in 2007 in each of the 10 KIBS sectors, 70% of respondents from government bodies reported expenditures on KIBS under 1m roubles (appr. £20 000), whereas 9% of them spent between 1m and 5mroubles (appr. £20 000 – £100 000). For public institutions, these figures were 59% and 18%, respectively, whereas for the private sector they were noticeably lower; 44% of respondents reported expenditures under 500 000 roubles (£10 000) and 16% - expenditures between 500 000 and 1mRUR (£10 000 – 20 000). The private sector is therefore more likely to spend large amounts on KIBS purchases (40% against 21-23% in the public sector).

In the observed period, public procurement in Russia was regulated by Federal Law No. 94-FZ “On placing orders to supply goods, perform work or provide services for state and municipal needs”, dated 21 July 2005, which limited purchasing mechanisms to mainly tenders and auctions. These provisions were not unique to Russia, although the UNCITRAL Model Law on Public Procurement suggested a variety of methods which all aimed to promote competition and transparency of procurement procedures (see UNCITRAL, 2011), and they created obstacles for the proper selection of KIBS providers. In particular, 57% of public institutions reported that they were not satisfied with their providers, where 40% of providers reported losses from projects with public customers.

Among the main reasons for dissatisfaction, 60% of public institutions referred to missed deadlines, and 76% were unable to absorb the service properly. That figure indicates insufficient co-production between public customers and KIBS providers, and the following lack of proper knowledge transfer. On the one hand, legislative restrictions forbid any pre-contracting communication between the tenderer and its potential providers, though our analysis proves that it is exactly at this stage that the need for co-production is greatest. On the other hand, public bodies have insufficient incentives for proper co-production, given that understaffing is a common problem, and purchases of services are typically considered as full outsourcing. Below we focus on these issues in more detail.

Customer satisfaction and procurement methods

The main difference between procurements of KIBS in the private and public sectors is the method of procurement. The private sector is free of any constraints either on the choice of service provider or on the selection criteria. The public sector complies with legislation that determines the feasible procurement methods and specifies the selection criteria. This is a reason to analyze the degree of satisfaction from KIBS consumption, bearing in mind the selection procedures. The main procurement procedures are (1) tendering, (2) request for quotations, (3) request of proposals, (4) negotiations, (5) electronic reverse auctions, and (6) single-source procurement (see, e.g. UNCITRAL, 2011). Our most important result is that the highest level of satisfaction is achieved when the single-source procurement is chosen. The lowest level of satisfaction is achieved when procurement is implemented through tender procedures.

The methods of procurement as reported by the respondents are shown in Tables 3a, 3b and 3c.

Table 3a. Methods of KIBS procurement reported by government bodies

Percentage of responses to the question: “How do you select providers of KIBS when purchasing their services?”

Percentage of responses	Avg	Sectors									
		MKT	AD	ADT	IT	ENG	REC	DSGN	DVP	FIN	LEG
We usually work with 1-2 reliable suppliers	67.5	66.7	40.0	78.6	58.8	50.0	82.8	52.9	75.8	90.0	100.0
We choose from offers of 3-4 firms with good reputations	14.1	14.0	20.0	7.1	15.7	27.8	–	41.2	12.1	–	–
Tendering, including unknown firms	16.9	17.5	40.0	14.3	21.6	22.2	17.2	5.9	9.1	10.0	–
None of the above/not sure	1.6	1.8	–	–	3.9	–	–	–	3.0	–	–
Total number of responses	302	16	62	15	55	29	26	32	10	20	37

Note: AD = Advertising; MKT = Marketing services; ADT = Audit; IT = Information Technology services; REC = Recruitment services; ENG = Engineering services; FIN = Financial Advice services; LEG = Legal Advice services; DVP = Property Development services; DSGN = Business Design

Table 3b. Methods of KIBS procurement reported by public institutions

Percentage of responses to the question: “How do you select providers of KIBS when purchasing their services?”

Percentage of responses	Avg	Sectors									
		MKT	AD	ADT	IT	ENG	REC	DSGN	DVP	FIN	LEG
We usually work with 1-2 reliable suppliers	69.6	20.0	58.3	78.3	65.0	59.1	76.9	100.0	100.0	84.2	69.2
We choose from offers of 3-4 firms with good reputations	18.2	60.0	29.2	8.7	25.0	9.1	15.4	–	–	10.5	30.8
Tendering, including unknown firms	10.1	20.0	12.5	8.7	10.0	22.7	7.7	–	-	5.3	-
None of the above/not sure	12.0	–	-	4.3	-	9.1	–	–	–	–	-
Total number of responses (sample size)	148	8	27	25	21	24	15	9	8	20	13

Note: AD = Advertising; MKT = Marketing services; ADT = Audit; IT = Information Technology services; REC = Recruitment services; ENG = Engineering services; FIN = Financial Advice services; LEG = Legal Advice services; DVP = Property Development services; DSGN = Business Design

The range of options suggested as responses to the question in Tables 3a and 3b were elaborated and validated during structured personal interviews with industry experts, rather than taken from legislative acts. This was because the survey mainly addressed private businesses, which also explains the relatively small sample of public sector enterprises. Therefore, the results presented in Tables 3a and 3b aim to show which methods of *those commonly used in the private sector* are also popular in the public sector. The number of “None of the above/not sure” responses is almost negligible. From this, we may conclude that the question itself was comfortable for respondents, and the list of procurement methods, whilst not exhaustive from the legislative or theoretical point of view, still encompassed the vast majority of practical methods. Therefore, we may concentrate on these three general methods of procurement which are especially convenient for further quantitative comparisons.⁶ In general, the public sector tends to use the same methods as the private sector (see Table 3c).

⁶ Otherwise, relatively small size of the sample being spread over a larger number of possible procurement options would result in a low number of respondents in each of them. This would be harmful for the reliability of results.

Table 3c. Methods of KIBS procurement reported by private sector

Percentage of responses to the question: “How do you select providers of KIBS when purchasing their services?”

Percentage of responses	Avg	Sectors									
		MKT	AD	ADT	IT	ENG	REC	DSGN	DVP	FIN	LEG
We usually work with 1-2 reliable suppliers	48.8	40.1	35.4	52.5	49.2	46.7	48.0	49.1	42.7	57.6	48.8
We choose from offers of 3-4 firms with good reputations	29.6	24.3	38.0	31.5	30.8	34.1	33.9	28.3	35.2	31.5	29.6
Tendering, including unknown firms	12.8	10.5	23.6	13.9	13.7	14.8	14.0	16.4	19.0	7.1	12.8
None of the above/not sure	8.7	7.2	3.1	2.2	6.2	4.4	4.1	6.1	3.1	3.8	8.7
Total number of responses (sample size)	2 770	229	591	321	270	171	293	321	184	151	239

Note: AD = Advertising; MKT = Marketing services; ADT = Audit; IT = Information Technology services; REC = Recruitment services; ENG = Engineering services; FIN = Financial Advice services; LEG = Legal Advice services; DVP = Property Development services; DSGN = Business Design

Strikingly, the private sector on average used single source procurement less frequently. Either tendering or choosing from 3-4 reliable providers were used more frequently. Both (tendering or selection from 3-4 reliable providers) belong to rather competitive methods of procurement, compared to the single source method. There are two possible explanations for this. The first one underlies public procurement legislation, where corruption forces public entities to use undesirable and inefficient methods of procurement. The second one is suggested in this paper; that existing legislative constraints and prescriptions on various forms of procurement do not leave enough space for their effective practical application. We prove that it is flexibility which makes tenders attractive to private businesses, while rigidities make this procedure inappropriate for KIBS procurement by the public sector. UNCITRAL (2011) promotes the flexibility of procurement procedures, particularly in tendering. EBRD (2011) indicated the rigidity of Russian procurement legislation at the time. We show that, in that period, tendering for KIBS actually generated lower customer satisfaction in the public sector, which was incompatible with the corruption view on the choice of procurement methods. Excessively constrained tendering was therefore indeed a less efficient mechanism than single-source procurement.

The relationship between the method of procurement and the level of satisfaction (as reported by the respondents) is not straightforward (see Fig. 1a for government bodies and Fig. 1b for public institutions). Both figures highlight that the number of highly satisfied customers remarkably increases when moving from tenders towards single source procurement, whereas dissatisfaction increases in the opposite direction. The majority of customers in the public sector achieve the highest level of satisfaction when KIBS are purchased from 1-2 reliable suppliers.

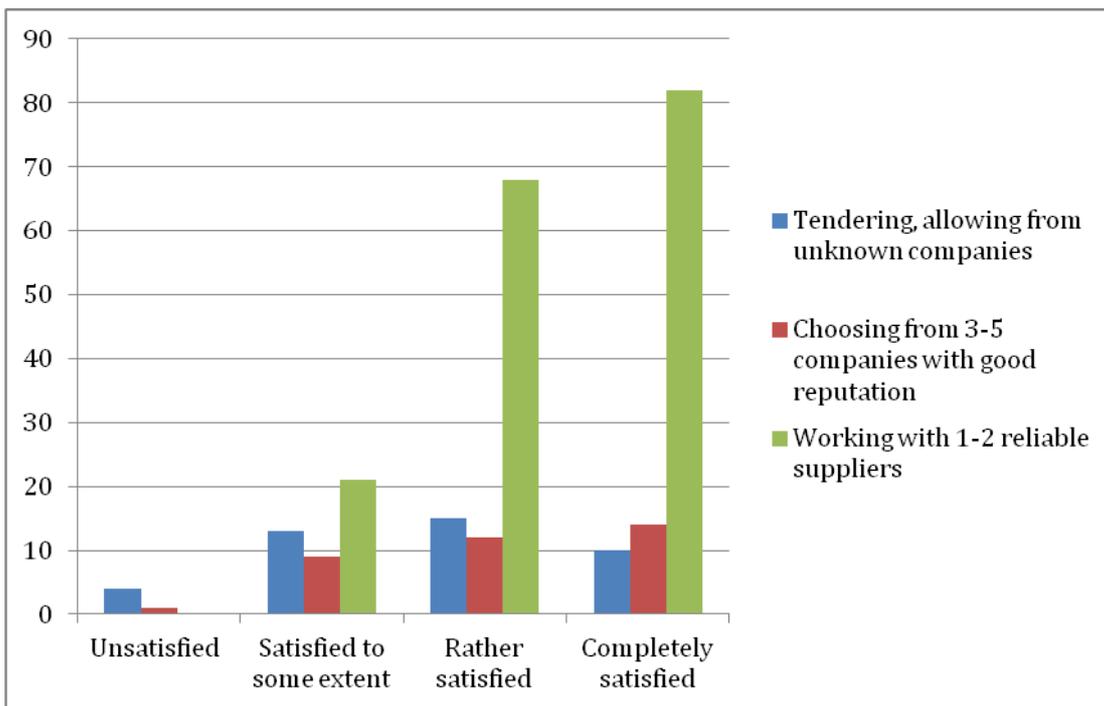


Figure 1a. Joint distribution of responses to the questions "How do you purchase KIBS?" and "Estimate the level of your satisfaction with rendered KIBS ": government bodies

The survey contained three questions about satisfaction, one defining satisfaction as «services delivered on time and without complications», another one – as “quality of servicing” (punctuality, politeness, etc.)», and the third one – as the «fulfilment of obligations». Here we use the first definition. The results presented here remain qualitatively unchanged, independent of the criterion used to define “satisfaction”.

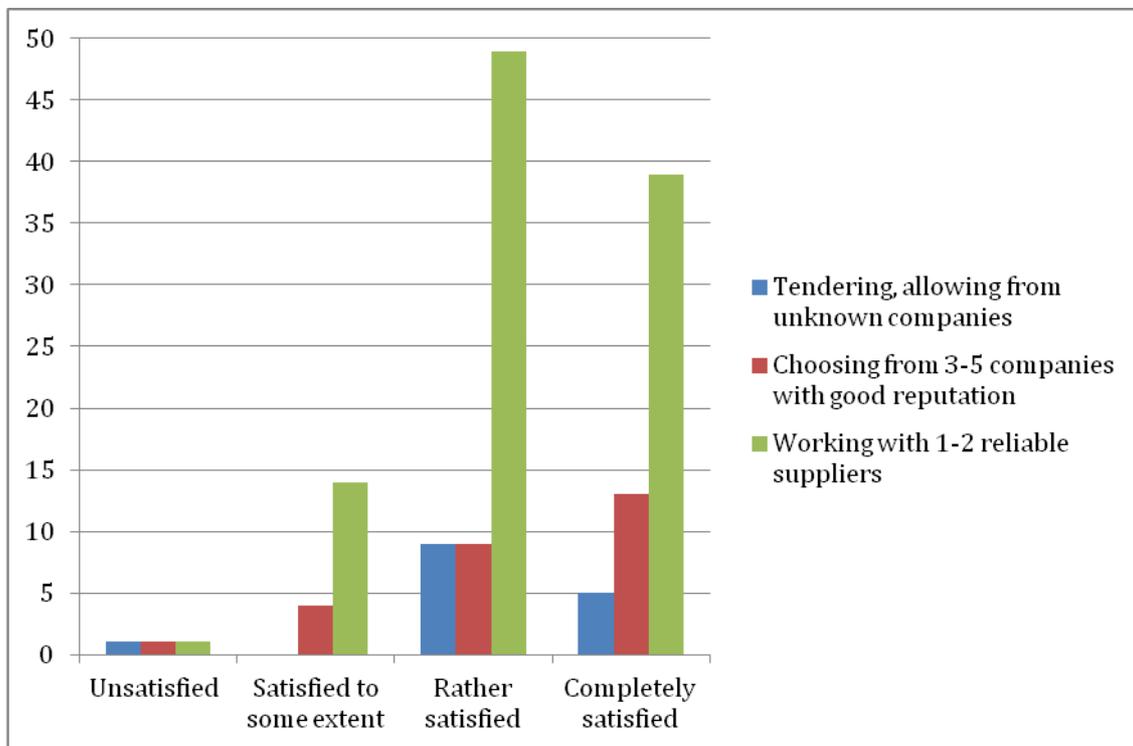


Figure 1b. Joint distribution of answers to the questions "How do you purchase KIBS" and "Estimate the level of your satisfaction with rendered KIBS ": public institutions

It should be emphasized here that public procurement legislation encourages neither long-term relationships with suppliers, nor purchasing from a limited number of suppliers. A certain discrepancy therefore arises between the legislative objective and its actual effects; the number of absolutely satisfied respondents is relatively low for those who use tender procedures (23.8% in the private and 33.3% in the public sector). The share of satisfied private sector respondents who use single source procurement is almost twofold: 47.9% reported absolute satisfaction. Therefore, we can observe the advantages of single source procurement in the free business environment, while in the public sector, the share of complete satisfaction from single source procurement remains low (37.8%). The public sector derives the highest level of satisfaction (48.1%) from requests of quotations from 3-4 suppliers with good reputations (vs. 38.9% in private sector). Both public and private sectors prefer to cooperate with a limited number of KIBS suppliers, yet the amount of completely satisfied respondents in the public sector is remarkably smaller. From this, public procurement is rather less efficient

Respondents were also asked about the criteria that they use when they choose service suppliers. For government bodies, the most important criteria are the timeline of the service delivery (24.5% of responses), quality (23%) and the supplier's experience (11.9%). The least important criterion is the supplier's membership in professional associations. For public institutions, the results are similar: quality (24.9%), the timeline of service provision (18.8%) and experience (11.1%) are the most important, whereas membership in associations is not

important at all. Other factors like the price of services, qualification of the service provider, personal contacts and advice of peers are of medium importance (see Tables 4a and 4b).

Table 4a. Selection criteria for KIBS suppliers by government bodies

Percentage of responses to the question: "How do you select KIBS providers when purchasing their services?" The colour scheme highlights cells with low (green) and high (red) values.

	Avg	MKT	AD	ADT	IT	ENG	REC	DSGN	DVP	FIN	LEG
Timeline	25.0	18.0	34.0	14.3	18.0	27.0	24.4	30.0	12.0	26.2	28.0
Quality	23.0	31.0	26.1	23.0	21.0	22.0	27.0	23.3	16.0	29.0	16.0
Low price	9.0	10.3	10.1	11.4	10.0	11.0	5.0	13.3	0.0	7.1	7.0
High qualifications	11.1	18.0	4.2	17.1	12.1	7.0	15.0	7.0	8.0	10.0	20.0
Customer-oriented approach	6.0	3.0	3.0	9.0	10.0	4.1	5.0	3.3	4.0	7.1	9.3
Extensive experience: History	12.0	13.0	13.0	14.3	14.0	14.0	15.0	7.0	12.0	7.1	7.0
Well-known in the market: Brand	4.3	3.0	4.2	3.0	7.0	5.4	2.4	7.0	16.0	0.0	0.0
Recommendations of peers/colleagues	6.0	3.0	4.2	3.0	7.3	4.1	5.0	3.3	12.0	7.1	8.0
Personal knowledge	3.0	3.0	1.0	6.0	1.0	5.4	2.4	7.0	12.0	5.0	1.3
Membership in professional association	1.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	8.0	0.0	0.0
N/A	1.2	0.0	1.0	0.0	1.6	0.0	0.0	0.0	0.0	2.4	4.0
Total number of responses	604	39	119	35	124	74	41	30	25	42	75

Note: AD = Advertising; MKT = Marketing services; ADT = Audit; IT = Information Technology services; REC = Recruitment services; ENG = Engineering services; FIN = Financial Advice services; LEG = Legal Advice services; DVP = Property Development services; DSGN = Business Design

A comparison of Tables 4a and 4b shows that the quality of service is the prime criterion for the private sector, while government bodies are mostly focused on the timeline of the service delivery. A possible explanation is that private sector businesses are results-oriented, and they

are prepared to wait longer for the sake of perfect quality. For government bodies, reportability is more important, therefore rendering the timeframe of service delivery one of the key selection criteria.

Another observation from Tables 4a and 4b is that the private sector and government bodies indicate the qualifications of the supplier's personnel as a selection criterion more frequently than the low price. This effect might be insignificant due to the limited number of observations, yet it is worth mentioning. For the remainder of criteria, we do not observe any remarkable differences.

Procurement legislation in Russia establishes four main criteria for the public purchases of services: 1) price; 2) quality and qualification (a single criterion); 3) timeline for delivery, and 4) conditions and warranties. In many cases, the desired quality of KIBS cannot be formally and completely described in a call for offers (notification of contract, or invitation to tender). An important reason is that the ultimate quality of the rendered service crucially depends on the level of co-production and on the knowledge transfer between the consuming body and its supplier at the initial phase of the project (setting up the terms of reference). However, legislation prohibits any communication between the parties once the call for offers has been published. As a result, the public sector does not have another option but to use suppliers' qualifications as the best available proxies for the quality of their future services. Conversely, the private sector enjoys the flexibility of communications with potential suppliers when negotiating the contract, when the proper specifications of the desired quality of KIBS are determined. As a result, the quality requirements (this is the most important factor for the private sector) are fixed in the contract; the qualifications of the service provider do not particularly matter, and the price factor becomes more important.

Table 4b. Selection criteria for KIBS suppliers by the private sector

Percentage of responses to the question: "How do you select KIBS providers when purchasing their services?" The colour scheme highlights cells with low (green) and high (red) values.

	Avg	MKT	AD	ADT	IT	ENG	REC	DSGN	DVP	FIN	LEG
Timeline	19.0	17.0	20.2	24.0	18.3	22.1	20.0	18.0	21.0	11.4	14.3
Quality	25.0	24.0	26.1	37.3	22.4	24.2	19.0	26.1	19.0	25.1	25.0
Low price	6.1	6.0	9.0	3.0	6.0	6.0	7.0	7.2	6.0	3.1	4.1
High qualifications	11.0	11.0	10.1	6.0	11.4	13.4	9.4	12.0	9.0	12.0	13.0
Customer-oriented approach	8.4	9.0	9.1	6.0	10.6	5.0	9.2	8.1	8.0	9.4	9.2
Extensive experience: History	11.0	11.4	10.1	8.0	9.0	14.0	15.0	10.0	15.4	12.4	12.0
Well-known in the market: Brand	6.0	7.4	5.1	6.4	7.0	4.2	7.0	4.0	7.0	6.2	5.0
Recommendations of peers/colleagues	7.1	7.2	7.1	8.0	7.0	4.2	8.0	7.3	7.0	7.2	8.0
Personal knowledge	4.0	3.2	4.1	2.0	4.0	2.0	3.2	4.3	2.5	4.2	6.0
Membership in professional association	0.4	1.0	0.1	1.0	1.0	0.4	0.1	1.0	0.4	1.0	1.0
N/A	3.4	4.2	1.0	0.0	4.0	6.0	3.4	4.0	6.0	8.4	5.1
Total number of answers	7152	598	1557	598	791	476	715	877	473	403	664

The low priority of customer-centricity in the public sector is also in line with our general point that consumers from the private sector have more incentives (and flexibility) to be engaged in efficient co-production with service suppliers. The availability of supplier's help and advice during and after the service provision is an important factor for general satisfaction. Again, a formal description of the "customer-oriented approach" in a public call for offers is hardly possible, while "market history" is a measurable criterion, which therefore gains higher importance for KIBS consumers from the public sector.

Co-production

KIBS production is hardly effective without close cooperation between suppliers and their customers. The nature of KIBS implies the need in a specific knowledge about the particular customer rather than common knowledge about a generalised consumer. A knowledge-intensive service therefore has two producers instead of one: a company who renders the service (it supplies its intellectual resources, mainly qualified labour), and a company who orders a service (it supplies its information resources, i.e. knowledge about itself). This process is called external resource incorporation or co-production.

As mentioned above, KIBS users from the private sector have stronger incentives, more flexibility and fewer constraints for their active and efficient co-production with the service provider.

We measure the intensity of KIBS co-production by asking the customers to estimate their involvement in the producers' activities on a 10-point scale, where 1 means minimum participation (no input except terms of reference) and 10 means maximum participation (joint project implementation).

Our survey shows that 33.3% of government bodies and 20.9% of public institutions estimated their involvement in co-production as low (score 1-4 on a 10-point scale), while 42.7% of government bodies and 45.9% of public institution estimated it as high (scores 7-10 on the 10-point scale). Although we observe gaps between the perceptions of public institutions and government bodies, the one on the upper part of the scale does not seem significant. A more crucial difference arises between public customers as a whole and private KIBS users. Only 15.9% of consumers from the private sector estimated their co-production as low and 57.5% attributed it a score between 7 and 10 (see Fig. 2 for details). This difference between private and public sectors supports our hypothesis about stronger incentives for the private sector to co-produce KIBS.

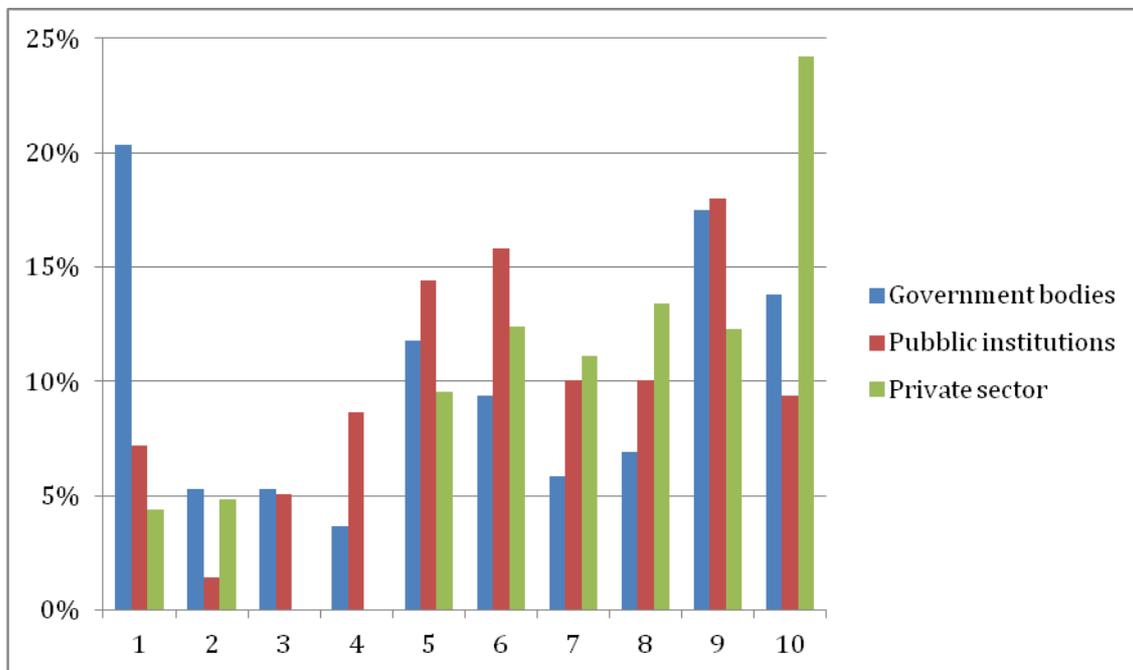


Figure 2. Levels of co-production (*horizontally*) as estimated by KIBS consumers (average percentage over all reported sectors, *vertically*)

The levels of co-production vary between sectors. Though this paper does not aim to perform a thorough cross-section analysis, some differences are notable. Advertising, for example, shows little difference between public and private sectors (24-52% of respondents give their engagement co-production the highest scores of 7-10). In engineering, the share of high scores in the public sector reaches 72.6%, against 48.6% in the private sector. Similarly, in property development, the share of intensive co-producers in the public sector is larger than in the private one (53.6% against 49.4%), although the difference is not significant. In design, government bodies report high co-production more frequently than the private sector (63.6% against 59.6%) while public institutions do so less frequently (56.8%). Again, the gap may seem insignificant, but this example reemphasizes the differences between government bodies and public institutions taken together and the private sector. This issue requires more detailed investigation in a separate study.

The 2008 survey did not address the question of the reasons for insufficient customer co-production with public bodies, yet a subsequent survey in 2011 posed this question to business customers. The main reasons in the private sector are shortages of resources (the staff does not have enough time for extra duties, 30.6% of respondents) and a negative attitude towards co-production (“we are paying for the service and it’s the service provider who should work”, 26.4%) – see Fig. 3a for details.

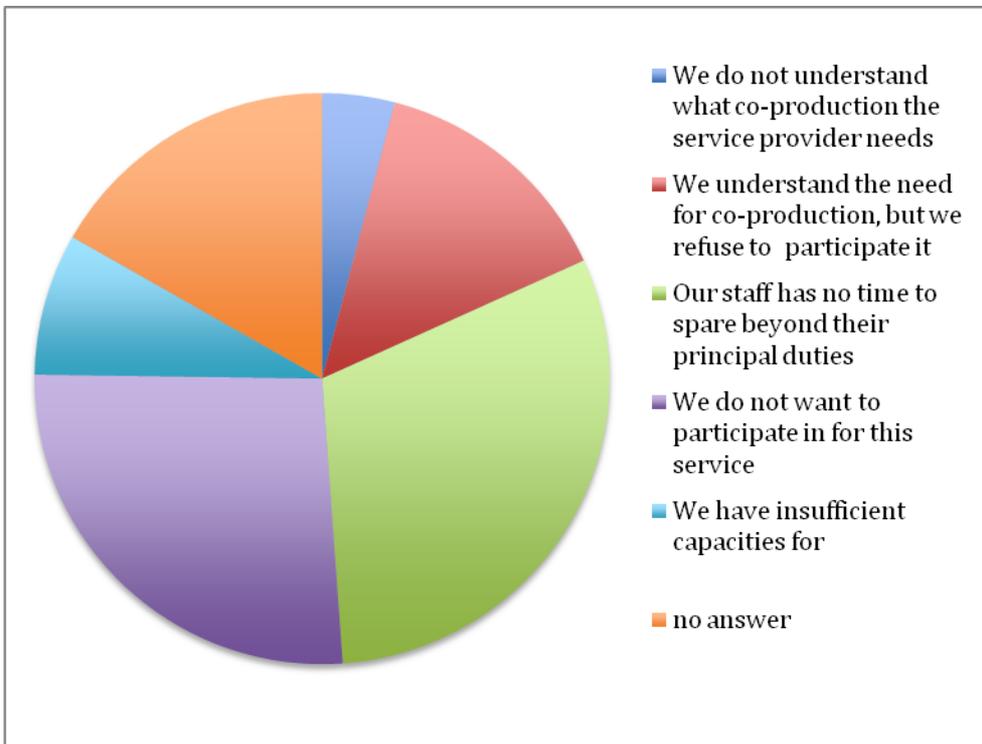


Figure 3a. Reasons for insufficient co-production (ISSEK-ROMIR survey of private KIBS consumers, 2011)

A slightly different picture is given by service providers, who answered the same question about the reasons for insufficient co-production, using the same 10-point scale. Importantly, we did not ask them to distinguish between public and private sectors, i.e. they gave only general estimates.

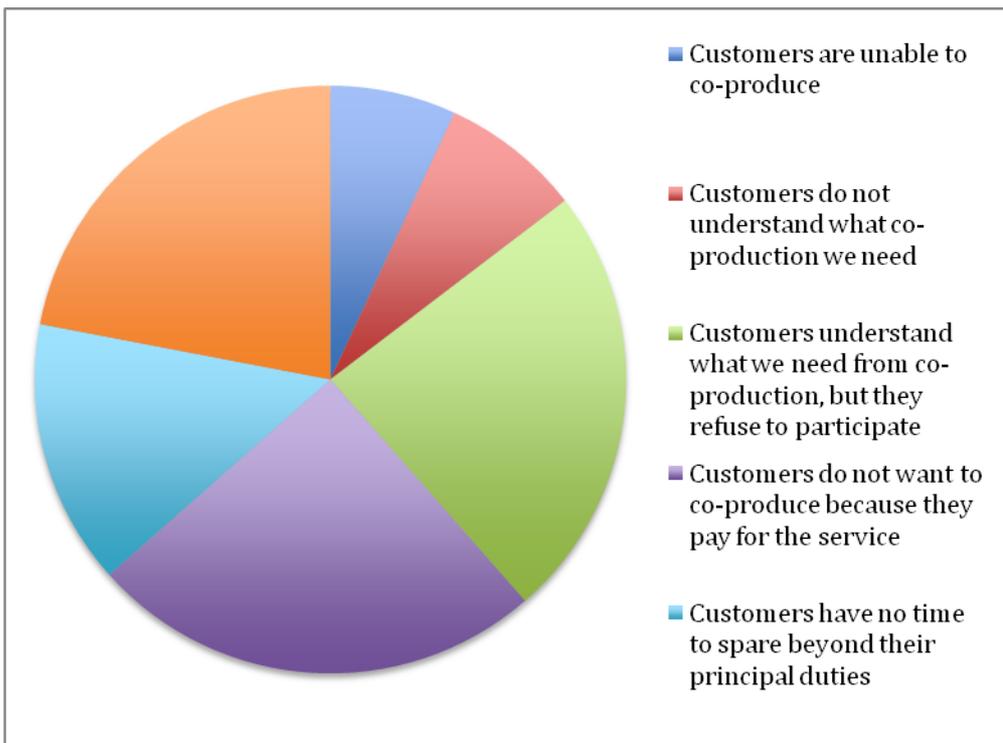


Figure 3b. Reasons for insufficient co-production (ISSEK-ROMIR survey of KIBS providers, 2011)

The vision of KIBS providers (of customers in general) differs from that of private customers. Providers noticeably mention customers' resistance to necessary co-production and choose the option "no answer" more frequently, whereas sector customers more frequently argue that their staff has no time to participate in co-production. These differences may be explained by a difference in perception, yet an important point is that providers' experience covers customers from the public sector as well. If this asymmetry can, at least partially, be explained by the attitude of public sector managers, then we would expect a higher resistance to co-produce in the public sector, as well as a more pronounced role of other factors which prevent efficient co-production. On this point, an interesting observation has been documented by Lan and Rainey (1992) who point out that managers in the public sector are more likely to stick to the rules and formal job descriptions. This suggests that a more formalistic approach in the public sector may be deemed responsible for a lower level of co-production. Generally, this is consistent with our observations on the reasons for poor co-production in the public sector.

Co-production varies at the different stages of the project's implementation. We distinguish between four stages: *preliminary* (before the start of the project, e.g. clarifications of the terms of references), *initial* (the preparation and the start of the project), *main* (the actual production of the service) and *final* (completion, final adjustment of the project's results to the client's needs and clarification of the remaining issues and the final report) stages of the KIBS provision. Fig. 4 compares two profiles of co-production: the one that KIBS suppliers need for proper service provision (required, or desired, co-production) and the one they perceive as actually achieved with their customers (actual co-production). Note that the desired level of co-production on average exceeds the actual one at all four stages, although the distribution of responses is rather flat. Importantly, at all four stages, the number of suppliers who require highest co-production (at level 10) is about twice as high as the number of those who actually report this high level of co-production. A strong need for co-production at the preliminary stage (preparation of the terms of reference) changes by lower co-production at the initial and in the main stages, and then by the new increase of co-production at the final stage of the project. Fig. 4 depicts visible changes in the distributions of answers. The distribution in the preliminary phase noticeably skews towards higher scores compared with other panels, and the distribution at the main stage is closer to uniform than any other. The distributions at the beginning and final stages are quite similar to each other. Significantly, it is the preliminary stage that requires (and involves) the most intensive co-production (the vast majority of respondents gave scores of 5 and above).

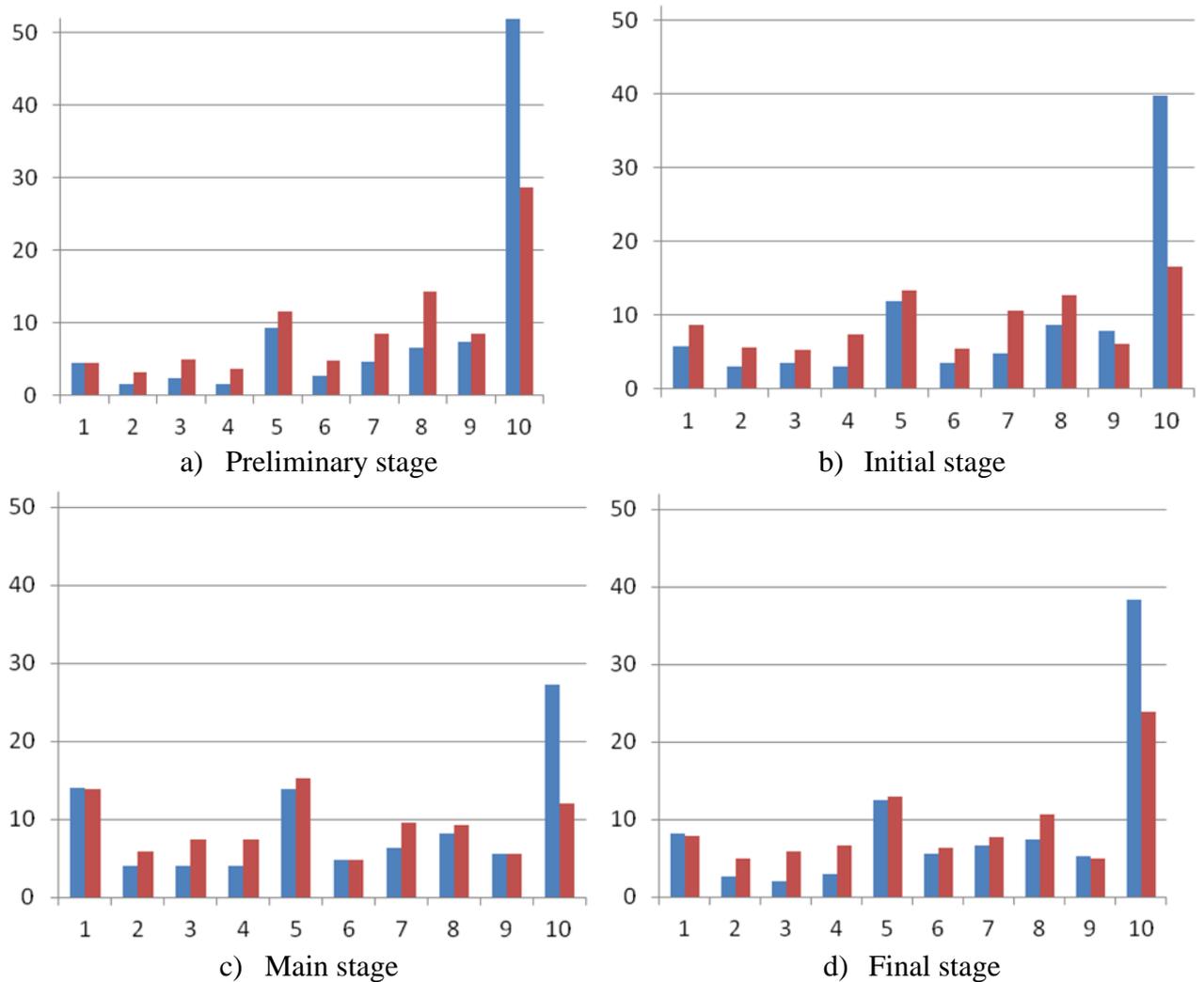


Figure 4. Required (blue) and actual (red) levels of co-production (on a scale from 1 to 10, x-axis, lowest co-production on the left, highest to the right; percentage of responses on the y-axis); ISSEK-ROMIR survey of KIBS suppliers, 2011)

The typical public procurement legislation forbids any interaction between a public body and the potential supplier of services at the preliminary stage of procurement procedures. This norm hinders co-production at a very important stage, when the parameters of the demanded service should be specified during close interactions between consumers and suppliers. Further on, co-production at later stages may require adjustments and amendments of the initial terms of reference, when customers achieve a better understanding of their needs after benefiting from the knowledge transfer from KIBS suppliers (see Doroshenko, 2012). Any changes in contracts are usually prohibited by public procurement legislations. Regulatory constraints therefore put obstacles in the way of proper co-production and thus hinder proper satisfaction from KIBS in the public sector.

Table 5 presents the joint distribution of answers to questions about the levels of actual co-production and on actual customer satisfaction.⁷ Responses from the private sector are concentrated around high co-production and high satisfaction. This can be viewed as a proxy for the first-best outcome, because private firms are unconstrained in their choice of the level of co-production, in comparison to the public sector. The latter, however, demonstrates noticeable differences. As discussed above, government bodies are highly constrained by the law in their ability to coproduce, which is reflected in the distribution of their answers, demonstrating roughly equal likelihoods of low and high co-production. Less constrained public sector institutions show higher levels of co-production. It is difficult to judge based on the link between co-production and satisfaction, although the unconstrained choice of private firms indirectly suggests that higher satisfaction may be achieved by better co-production.

Table 5. Relationship between customer satisfaction and co-production

Average percentages of responses to the question: "On the ten-point scale, one being the lowest and ten being the highest, estimate the level of actual co-production" (vertically from top to bottom) and "Estimate the level of your satisfaction with rendered KIBS" (horizontally, four-point scale.) The colour scheme highlights cells with small (green) and large (red) values.

	Dissatisfied	Partially satisfied	Rather satisfied	Absolutely satisfied
1	0	4.9	7.4	8.2
2	0	0	4.1	1.2
3	0	1.7	2.1	1.7
4	0	0.4	2.9	0.4
5	0.8	3.7	2.9	2.1
6	0	1.7	0.4	7.0
7	0	2.5	1.7	2.1
8	0	0	2.5	4.5
9	0	2.1	8.6	7.0
10	0.4	2.1	4.9	6.2

a) Government bodies

	Dissatisfied	Partially satisfied	Rather satisfied	Absolutely satisfied
1	0.7	0.7	4.3	1.4
2	0	1.4	0	0
3	0	0.7	3.6	0.7
4	0.7	2.9	3.6	1.4
5	0	2.1	7.9	4.3
6	0.7	1.4	4.3	8.6
7	0	1.4	5.7	2.9
8	0	0.7	4.3	5.0
9	0	3.6	9.3	5.7
10	0	1.4	4.3	4.3

b) Public institutions

	Dissatisfied	Partially satisfied	Rather satisfied	Absolutely satisfied
1	0	0	1.3	2.9
2	0	0.2	1.2	3.4
3	0	0.2	1.6	2.3
4	0.1	0.1	1.6	2.0
5	0	0.6	4.0	5.0
6	0.2	0.7	4.0	7.7
7	0	0.6	4.1	6.2
8	0	1.1	4.7	7.7
9	0.1	0.6	3.9	7.8
10	0.4	0.6	3.6	19.8

c) Private sector

On the one hand, co-production does not appear to contribute much to the ultimate satisfaction of government bodies and public institutions from the services rendered. On the other hand, co-production is indispensable for the provision of highly customized KIBS (see, e.g. Bettencourt et al., 2002). This suggests that public procurement of KIBS lacks customization.

⁷ Each cell gives the percentage of respondents that gave the corresponding combination of answers.

Indeed, the existing restrictions on qualitative choice criteria and the emphasized role of formalized parameters of public purchases all prohibited communications with potential service providers before the start of procurement procedure. The rigidity of the contract in terms of ongoing changes might lead to a high degree of standardization of services. These standard services do not require high levels of co-production. As a result, if the customer prefers standard services, high satisfaction may be achieved even if co-production is low.

Absorption of services

The absorption of KIBS is another important indicator of procurement efficiency. Indeed, the service cannot be fully absorbed if it does not perfectly match the needs of the customer. The question as to whether KIBS consumers indeed associate the perfect absorption of service with satisfaction is worth particular investigation. Our data fail to reveal any significant difference between service absorption in public and private sectors in general, though the levels of absorption of different KIBS vary. 73% of the government bodies report full absorption of KIBS, and 18% reported that services are mostly absorbed. Public institutions reported 79% and 16.2%, respectively, while the private sector reported 78.9% and 10.8%, respectively. These results seem to contradict our previous findings about the relationship between co-production and satisfaction. If higher co-production leads to better satisfaction, which, in turn, is a pre-requisite for proper absorption, then the public sector should be less capable of the full absorption of KIBS, which contradicts the aforementioned observations. To explain this puzzle, we turn to the suppliers' data.

Suppliers of KIBS believe that only 68.2% of their KIBS are fully absorbed, and 14.2% are absorbed partially. This asymmetry of perception on the levels of absorption between service providers and their customers provides a key to the puzzle. Suppliers have perfect information about the properties of their KIBS and on the efforts that the customer should undertake in order to use the service properly. Even if the customer firm might seem to know its ability to absorb the service better than the supplier does, it is however the supplier who can find the untapped potential of the delivered service. This an overestimation of the degree of absorption is observed both in the public and private sectors. Despite this, we argue that co-production helps private enterprises to provide a more accurate estimate.

Co-production helps consumers to improve their understanding of their own needs. Consider a customer firm with strong incentives to co-produce; its initial knowledge about the rendered service often changes during co-production, e.g. the customer may discover unexpected benefits from service consumption, along with understanding that not all service qualities are easily absorbed (they might require additional training of staff, or even organizational changes). The perceived level of absorption reported by this customer will then be high in comparison to

initial expectations, though imperfect in comparison to the new deeper knowledge that was obtained through co-production.

On the contrary, a customer firm with weak incentives for co-production acquires less new knowledge, and therefore its understanding of benefits from co-production does not differ much from initial expectations. If the final service design is similar to the one initially commissioned, then a high level of absorption is most likely to be reported because the customer was prepared to absorb exactly what was initially rendered. In other words, the perceived level of absorption crucially depends on the customer’s grasp of this service, which, in turn, depends on co-production.⁸

As mentioned above, the levels of co-production differ in the public and private sectors because: (1) the rules of public procurement strictly determine allowable modes of co-production, and (2) the managers in the public sector have different objectives to their colleagues in the private sector.

Table 6. Relationship between service absorption and the method of procurement (purchase from 1-2 suppliers, offers from 3-5 suppliers, or tender), percentages of responses

Method	Degree of absorption (from low to high)											
1-2	a) Government bodies				b) Public institutions				c) Private sector			
	1.3	0.8	11.7	56.1	0.7	2.1	7.1	61.4	0.8	1.6	3.2	43.6
3-5	0	0.4	2.9	12.1	1.4	0.7	2.1	14.3	0.1	1.3	2.6	11.7
tender	0.4	0.4	5.0	8.8	0	0	3.6	6.4	0.2	1.3	5.2	28.4

Table 6 shows that the absorptive capacity of KIBS consumers is highly sensitive to procurement methods. Similarly to satisfaction, the highest reported absorption is associated with single-source procurement in the public sector, whereas the private sector demonstrates a substantially larger share of consumers who are able to achieve the highest level of absorption after an open, flexible tender.

We can interpret the matrices in Table 6 as joint probability distributions for procurement methods and levels of absorption. This view suggests that if government bodies use single-source procurement or offers from a limited number of suppliers, the probability of achieving the

⁸ Alternatively, an abnormally high (as compared to satisfaction) level of service absorption in the public sector can be explained by a tendency of public bodies to render more standardized KIBS, which are also easier to absorb. As discussed above, this is due to the regulatory requirements to publish full specifications of the items (services) to be purchased, prior to the start of the procurement procedure. The issue of standardization is not the focus of the current paper, but this argument is in line with the main finding, which is that it is a lack of flexibility in the procurement regulation that lowers efficiency in the consumption of KIBS by the public sector.

highest level of absorption is almost 80%, while if they announce a tender, the probability decreases to 60%. For public institutions, the respective probabilities are 86% in case of a single-source procurement, 76% for offers from 3-5 suppliers, and 64% for a tender. The private sector exhibits the highest probabilities of achieving a perfect absorption of KIBS (89% for single-source procurement, 75% for offers from 3-5 suppliers, and 81% for tenders.) If we focus on tenders only, the private sector demonstrates a notably higher probability of perfect absorption than the public sector. In the public sector, the more competitive the procurement procedure, the poorer the chance is for perfect absorption.

Is there any relationship between absorption and satisfaction? Table 7 provides an answer to this question. In both the public and the private sectors, we observe a positive relationship between the two aforementioned variables, although the relationship is stronger in the private sector. The probability of perfect satisfaction in the case of the perfect absorption of KIBS is 73% for private users vs. 47% for government bodies and 35% for public institutions. The probability of being fully or rather satisfied, given the full absorption of services, is 98% in the private sector vs. 83-84% in public sector.⁹

Table 7. Relationship between customer satisfaction (horizontally) and service absorption, (from top to bottom: “practically no absorption” (No), “absorbed to some extent” (Some), “more or less absorbed” (More), and “full absorption” (Full)); percentages of responses

Absorption	a) Government bodies				b) Public institutions				c) Private sector			
	Dissatisfied	Partially satisfied	Rather satisfied	Absolutely satisfied	Dissatisfied	Partially satisfied	Rather satisfied	Absolutely satisfied	Dissatisfied	Partially satisfied	Rather satisfied	Absolutely satisfied
No	0	0.4	1.3	0.4	0	0.7	0	1.4	0	0.2	0.7	0.4
Some	0	0.4	0.8	0	0	0	2.8	0	0.2	1.3	2.5	1.0
More	0.8	5.5	3.4	4.6	0	4.9	4.9	3.5	0.2	2.1	8.3	5.0
Full	0.4	13.0	27.8	32.3	1.4	11.3	40.1	28.9	0.4	1.3	19.0	57.4

The results are surprising. Full appropriation in the private sector almost automatically means perfect or almost perfect satisfaction, while in the public sector appropriation and satisfaction hardly correlate at all; for over 15% of those who report full absorption, a fully absorbed service is associated with dissatisfaction. Our discussion above shows that the puzzle appears due to mechanisms of procurement. Recall from Fig. 1a and 1b that the proper choice of the procurement procedure (the single-source procurement that does not break the law) provides

⁹ Calculated as conditional probability by interpreting the frequencies of responses as joint probability distributions. Answers “other” are omitted.

an 87% probability of satisfaction in the public sector. If a procuring body has to use a different method of procurement, it can absorb the service in full, but given the limitations of the procurement method, this service does not perfectly match the needs of the customer, which is reflected in a lower satisfaction.

Conclusions

Although public purchases of KIBS could in general be efficient, they face a number of obstacles. In this paper, we focused on the methods of procurement and legislative constraints as potential sources of inefficiency. Our surveys covered public institutions and government bodies which faced the abovementioned constraints, in comparison to private firms, who embodied the “unconstrained optimum”. The data reveal that single-source procurement is the best choice for the unconstrained case, both in terms of popularity and in terms of the probability of achieving the highest satisfaction. Despite regulatory constraints, it is also the most popular procurement method in the public sector. The crucial difference is however in tendering, which ensures a much higher probability of satisfaction in the private sector than in the public one. This can be explained by the limited range of permitted selection criteria for tenders in the public sector, which were imposed by procurement legislation at the time of the survey. Importantly, this legislation stipulated that price should always be used as one of the criteria, and its weight among other criteria may be as high as 80%. Our data reveal that price is not the dominating factor for public bodies in procurement procedures. This exemplifies the sort of efficiency-preventing constraints that we address in this paper. In order to change the situation, it is important to allow for more flexibility in the public procurement of KIBS in relevant legislation, to relax restrictions on tenders and competitions, and to reduce the weight of price in the selection criteria.

Our results demonstrate that the choice of the procurement method matters for consumers’ satisfaction and the absorption of services. The flexibility in procurement which the private sector enjoys, ensures a better choice of service provider, better co-production at the preliminary negotiations stage, and the ability to make changes in contract specifications at later stages of the project’s implementation, if co-production reveals the need for them. On the contrary, the public sector operates under a set of legislative restrictions, which often forbids communication between the purchasing entity and the supplier of services, requires a fixed set of service specifications to be identified and announced before the procurement procedure, and discourages long-term customer relationships.

We demonstrate that these restrictions force public sector consumers to prefer single-source procurement as the best option to achieve high satisfaction and the absorption of services.

Remarkably, this is the preferred option in the private sector as well. This is intuitively in line with suggestion that previous experience with a particular provider not only signals the quality of this provider's services, but is also beneficial in terms of knowledge that the provider has already gained about this particular customer. The latter is important for the proper quality of service.

Alongside this, the private sector demonstrates that tenders may be at least as efficient as single source procurement. This is particularly important if a new service is being rendered, with no previous experience with any potential providers. The public sector demonstrates the worst satisfaction from KIBS ordered through tenders (as compared to other procurement methods). This emphasizes the impact of regulatory restrictions faced by the public sector. If the legislation aims to improve efficiency (increasing satisfaction and absorption of services), it should allow for greater flexibility in public procurement.

Some of these issues are already addressed under the UNCITRAL Model Law (UNCITRAL, 2011). Our analysis suggests that its provisions, particularly the flexibility of choice in procurement methods, should resolve some of the problems mentioned in this paper, although this deserves a further investigation in a separate paper. However, we should recognize that with regulated purchases of KIBS, an attempt to promote competitive procurement may force public sector entities to render standardized services that do not perfectly match their needs. A full and exhaustive specification of the service is not feasible at the preliminary stage without consulting potential suppliers, and changes in specifications at later stages may result in greater efficiency rather than in corruption. It is also important to recognize that long-term relationships improve the efficiency of KIBS production, due to better knowledge of the particular customer.

Finally, it is widely accepted that managerial incentives in the public and private sectors differ. Our findings nevertheless indicate that there are important distinctions within the public sector itself, i.e. between government bodies and other public institutions (public nurseries, public schools, libraries, etc.). The latter differ from the private sector much less than the former, especially in terms of co-production. However, our survey samples were limited, and so these results require further testing.

References

- Antonelli, C. (1998) Localised technological change, new information technology and the knowledge and the knowledge-based economy: the European evidence. *Journal of Evolutionary Economics*, v. 8, pp. 177-198.
- Balsevich, A., Pivovarova, S., Podkolzina E. (2011) Information Transparency of Public Procurement in Russian Regions: Estimation and Explanations, National Research University - Higher School of Economics, WP BRP Series 01/2011
- Balsevich A., Yeremina A., Zoroastrova, I., Morozov, I., Ostrovnaya, M., Pivovarova, S., Podkolzina, E. (2012) "Vozmozhnosti gorizontatnoy i vertikalnoy integratsii pri osushествlenii

gosudarsyvennyh zakupok: analiz situatsiy/Perspectives for vertical and horizontal integration in public procurement: Case analysis. // Working papers by NRU Higher School of Economics WP10/2012/01 (in Russian).

Bartel A., A. Harrison (2005) "Ownership Versus Environment: Disentangling the Sources of Public-Sector Inefficiency", *Review of Economics and Statistics*, Vol. 87, No. 1, pp. 135-147

Bettencourt, L.A., Ostrom, A.L., Brown, S.W. and Roundtree, R.T. (2002). Client Coproduction in Knowledge-Intensive Business Services. // *California Management Review*, Vol. 44. No 4, pp. 100-128

Doroshenko, M. (2012) "How Knowledge Intensive Business Services Upgrade their Customers: Evidence from Russia". In *Exploring Knowledge-Intensive Business Services: Knowledge Management Strategies* by Eleonora Di Maria, Roberto Grandinetti and Barbara Di Bernardo (eds.). Palgrave Macmillan, pp. 79-99.

Doroshenko M. E., Miles I., Vinogradov D. Knowledge intensive business services as generators of innovations // Working papers by NRU Higher School of Economics. Series WP BRP "Science, Technology and Innovation". 2013. No. 12.

Doroshenko, M., Miles I., and Vinogradov, D. Knowledge Intensive Business Services: The Russian Experience // *Foresight-Russia*. 2014. Vol. 8. No. 4. pp. 24-39.

EBRD (2011) "Public Procurement Assessment: Review of law and practice in the EBRD region," European Bank for Reconstruction and Development.

Edler J., Georghiou L. (2007), Public procurement and innovation: resurrecting the demand side, *Research Policy*, vol. 36, pp. 949-963.

Hauknes, J (2000) 'Dynamic Innovation Systems: What is the Role of Services?', in M. Boden & I. Miles, (eds) *Services and the Knowledge-based Economy* Continuum, London.

Hertog, P. den (2000). Knowledge Intensive Business Services as Co-producers of Innovation // *International Journal of Innovation Management*, Vol. 4. No. 4, pp. 491-528.

Ivanov, A. Why the Russian Federation Public Procurement Market does not turn into the Market for lemons. – *NACC Journal*, Special issue, v. 5, No 2: July 2012. p.37-51

Koch, A. and Stahlecker, T. (2006) "Regional Innovation Systems and Foundation of Knowledge Intensive Business Services". *European Planning Studies*, 14 (2), 123-146.

Lan Z., Rainey H.G. (1992) "Goals, Rules, and Effectiveness in Public, Private, and Hybrid Organizations: More Evidence on Frequent Assertions About Differences" *Journal of Public Administration Research and Theory*, Vol. 2 (1), pp. 5-28.

Marion, F. (1997) „Service Coproduction and Customer Participation", in H. Mühlbacher and J.-P. Flipo (eds.) *Advances in Services Marketing*, Wiesbaden, Germany: Gabler-Verlag, pp. 17-26.

Miles I. (2012). "KIBS And Knowledge Dynamics In Client-Supplier Interaction" in E. Di Maria, R. Grandinetti, and Barbara Di Bernardo (eds) *Exploring Knowledge-Intensive Business Services*, Knowledge Management Strategies, London, Palgrave

Meggison, W., and J.Netter (2001) "From State to Market: A Survey of Empirical Studies on Privatization," *Journal of Economic Literature* 39 (June 2001), 321–389.

Muller, E. and Zenker, A. (2001) "Business services as actors of knowledge transformation: the role of KIBS in regional and national innovation systems", *Research Policy* , vol. 30, no. 9, pp. 1501-1516.OECD (2005) *Oslo Manual* 3rd edition Paris: OECD.

Rainey H.G., Backoff R.W., Levine C.H. (1976) "Comparing Public and Private Organizations," *Public Administration Review*, Vol. 36, No. 2, pp. 233-244

Simmie, J., S. Strambach, (2006) "The contribution of KIBS to innovation in cities: an evolutionary and institutional perspective", *Journal of Knowledge Management*, Vol. 10 Iss: 5, pp.26 – 40.

Spohrer J. and Maglio P. P. (2008) The Emergence of Service Science: Toward systematic service innovations to accelerate co-creation of value, *Production and Operations Management* vol.17 (3) pp1–9.

Tether, B. S. (2003) “The Sources and Aims of Innovation in services: variety between and within sectors”. *Economics of Innovation and new technology*. 12 (6), 481-505.

Tether, B.S., Hipp, C., Miles, I. (2001). Standardisation and Particularisation in Services: Evidence from Germany. // *Research Policy*, Vol. 30, pp. 1115-1138.

UNCITRAL (2011) Model Law on Public Procurement, United Nations Commission on International Trade Law, Vienna.

Yarra E., J. Edler, J. Garcia-Estevez, L. Georghiou, J. Yeow (2014). Barriers to innovation through public procurement: A supplier perspective, *Technovation*, 34 (10), pp. 631-645

Yakovlev A., Bashina A., Demidova O. (2013) "Efficiency of Simple Homogeneous Good Procurement under Rigid Governmental Regulation: The Case of Sugar Sand Procurement in Russia", *Ekonomicheskii zhurnal VSE*, 2013, p.617-645

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