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# Citizen Preference and Resource Allocation: The Case for Participatory Budgeting in Seoul

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ABSTRACT This article seeks to measure the extent to which the service priorities of citizens of Seoul, South Korea, are reflected in corresponding resource allocations in the city's budget, despite there being virtually no participation by citizens in the budget creation process. We find a less than perfect congruence between budget allocations and citizen preferences at both the city and district level. Given these results, we discuss the potential for participatory budgeting to address discrepancies in resource allocation by focusing on the unique demographic and cultural makeup of Seoul constituencies.

KEY WORDS: Seoul, Korea, citizen preference, participatory budgeting

#### I. Introduction

Home to over 10 million people, Seoul enjoys a special administrative status as both Korea's largest city and its capital. As a consequence of Seoul's size and importance, the city has a large annual budget, which runs in excess of 19 trillion won, or about US\$15.5 billion, with financial resources being distributed among 25 local autonomous districts throughout the city. As one might expect, the budget creation process in Seoul is a highly politicised affair, with diverse stakeholder groups competing for a portion of the city's resources or influence over how the money is spent. This process is further complicated by the inherent features of the city's population, which, despite being more homogenous than other international capitals, is by far the most diverse within the country (Cho and Mor Barak 2008), which increases the potential for political conflict and incompatible demands (Protasel 1988). Moreover, it cannot be taken for granted that budget makers will be unbiased in their distribution of funds, as popularly elected local government heads in Seoul have in the past been accused of using their budget creation powers to reward those who helped them

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get elected, thereby creating an element of political patronage. Other allegations include the participation of local councillors in wasteful 'pork barreling' schemes (Lee 2000). These activities call into question the fairness of the budgetary process in Seoul by suggesting that budgets are hijacked by high-ranking local government officials to further personal objectives rather than to impartially serve the citizens residing in their respective constituencies.

The normative assumption underlying this research is that those with budget making powers in democratic societies should work to ensure that the manner in which resources are allocated within a community are a faithful reflection of the preferences of the electorate in that community. As we will see, various district budgets in Seoul city fall short of this principle, with past and current budgets emphasising alternative services and projects to those that citizens most prefer. A potential cause for this deficiency is the almost non-existent level of citizen participation in the budgetary process throughout the city, the introduction of which we believe offers a potential solution to the problems of representative democracy in Seoul that the budget discrepancies illustrate. In this article, we do not raise the question of the inherent value of citizen participation in and of itself (for an example of such, see King et al. 1998), and do not treat the topic in isolation of its potential effects on policy. To discuss such a topic in any meaningful way would involve a philosophical discussion of the foundations of representative democracy itself and is beyond the scope of this study (cf. Coppock 1977). We instead consider participation in a much narrower scope as a tool which may be used to close the gap between budgetary expenditure and citizen preference, and we weigh the costs of using such a tool against its potential to serve this particular aim. This article investigates the ideal conditions under which participatory budget making can succeed and speculates whether or not such a strategy might be appropriate to address the divergence of citizen preference and budget allocations in Seoul.

#### II. Theoretical background

#### 1. Citizen participation in the budget framework

The participation of citizens in the democratic process has distinct benefits both for policy-makers and for citizens themselves. Irvin and Stansbury (2004) suggest that by inviting citizens to participate in the policy process, policy-makers can garner higher levels of cooperation from the electorate when introducing crucial policy, break political gridlock and reduce litigation costs should new initiatives produce adverse and unintended results. Moreover, citizen participation can provide policy-makers with a preview of public reaction to more controversial policy choices and protect them from the backlash that invariably results from unpopular policy choices (Majone 2008). For citizens, participation can be a process of both education about the important policy decisions facing their local governments (Barabas 2004), and a source of empowerment for diverse stakeholder groups without the funds necessary to put pressure on policy-makers through lobbying (Lyons *et al.* 2001). Moreover, there is the

possibility that through the participation of a diverse cross-section of the population, service delivery itself will improve, as local knowledge and expertise are incorporated into the decisions made by professional bureaucrats and politicians (Baiocchi 2005).

Since the 1970s, participation has become a more prominent feature of the democratic process in the United States (Crosby et al. 1986), and with it the ability of those with final decision-making powers to continually monitor the needs and desires of the communities that they serve (Franklin and Carberry-George 1999). This rise in stakeholder participation has stimulated scholars to define the various methods by which individuals and groups play their part. Song (2002) divides methods of participant involvement into three categories: information, consultation and active participation, with category membership depending on how actively citizens can affect the policy process. 'Information' refers to the existence of a one-way relationship between government and citizens, with the former providing information on the policy decisions to the latter. 'Consultation' is an asymmetrical relationship, with citizens providing limited feedback to policy-makers, who are in turn under little or no obligation to incorporate public feedback into policy decisions. 'Active participation', the ideal, is based on an equal partnership between the government and citizens (Song 2002). In terms of the budget making process, Seoul currently falls fully under the 'Information' category of participation, as information on budgetary decisions is made available to citizens only ex post facto on government websites and citizens are not given the formal opportunity to voice their concerns before decisions are made, let alone enter into a partnership with decision-makers.

The Korean case, of course, is not the rule, and there are examples of localities where participatory budgeting has evolved from a theoretical possibility into a political reality and made an open process by which citizens directly and democratically decide how to allocate part of a city's budget, a central component of budget creation. Porto Alegre in Brazil, an early proponent of participatory budgeting and among its most famous examples, has come to represent an enduring success story. In 1990, the city's administration routinised participatory budgeting as part of local politics by creating open assemblies where ordinary citizens could deliberate over and then prioritise budget demands, with the results being integrated into the city budget proposal. Over a period of 10 years this process brought significant improvements to service delivery and resulted in nearly full coverage in basic sewage and water facilities for citizens of the city. It also doubled the number of children receiving public primary education (Baiocchi and Lerner 2007). This experience illustrates how a carefully implemented partnership between government and citizens can bring dramatic and concrete results to communities by increasing accountability and bringing budgetary expenditure in line with citizen preference.

Unlike Porto Alegre, however, where participation in budget making was motivated by the lack of full coverage in the necessities of urban life, Seoul residents already enjoy fully paved roads and sewage facilities, as well as the full range of modern amenities and infrastructure one expects to find in a developed capital city. As such, a more compelling example of participatory budgeting might be drawn from Canada, where budget strategies implemented in the cities of Guelph, Toronto, Vancouver and Montreal focus on a broader range of services and policies beyond basic human needs. Local governments in Canada are rarely as radical as their Brazilian counterparts, and in most cases they are much less autonomous as well (Pinnington et al. 2009). In addition, as participatory budgeting was relatively unknown in Canada, as it currently is in Korea, citizen groups attempting to influence budgetary decisions had to seek legitimation by linking their struggles to international programmes and defining the issues facing their communities by aligning them to broader global debates (Baiocchi and Lerner 2007). Despite these challenges, as well as others including a far higher degree of ethnic diversity in local communities than in Brazil, participatory budgeting in Canada in major centres has emerged as a viable option by which citizen preference can be incorporated into decisions concerning community resource allocation.

While direct citizen participation in the budget making process may result in a budget that better reflects the priorities of the electorate, some scholars have called attention to the high monetary and procedural costs of citizen participation, as well as a number of dangers that can result from the poor implementation of a participatory framework. Irvin and Stansbury (2004) point out that citizen participation inevitably increases cost per decision, which in turn siphons resources away from a government's primary mission of service delivery, and moreover that participation does not necessarily mean that citizens will arrive at a better, or even different, decision than a professional policy-maker. They further point out that, contrary to utopian claims that participation strengthens the democratic values of citizens, the fact remains that attending frequent meetings in order to consider the finer details of policy is an activity that many would prefer to avoid. This aversion to public participation has the potential to lead to a poor representation of the general population by citizen participants, insofar as those with a high motivation to participate will be those not only that have the most to gain by influencing decisions, but also have the free time and economic resources to do so (Day 1997). Others (for example, Bachrach and Baratz 1962) have suggested that the unequal distribution of public resources is a structural feature of a system that favours those already in positions of power, and that against such structural deficiency participation can affect little change. Elite theorists have also pointed to the apparent benefits of citizen apathy and nonparticipation in the political process, as higher levels of participation can work to create disequilibrium within the system (Pateman 1970), and stability often carries a high value among theorists for its efficiency enabling characteristics (Day 1997). At the very least, it is difficult to deny that a tension does not exist between the realities of a rationally organised, technically competent bureaucratic apparatus and the ideals of a democratic social system (Meier and O'Toole 2006, Waldo 1948).

#### 2. Research motivations and context

Leaving aside the arguments that see an inherent value in citizen participation and thus that participation should be pursued as an ends in itself (cf. Fisher 1993), and speaking from a purely administrative perspective, one of the aims of the local bureaucracy is to deliver services of the highest possible quality in the most efficient way for the lowest possible cost, and therefore, the negative arguments outlined above lead us to conclude that non-participatory budgetary systems may be preferable to participatory ones as long as the final budget reflects the preferences of citizens. In Korea, the press, non-governmental organisations (NGOs) and scholars have all criticised government budgeting procedures as non-participatory, but it has yet to be shown whether the top-down, nonparticipatory budget creation process currently practiced in Seoul in the end delivers a budget in line with citizen preferences. As such, our study aims to investigate these claims empirically by looking at the extent to which budget allocation is in line with citizen preferences. We find that citizen priorities are not embodied perfectly in the budgets that the non-participatory system creates, which thus leads to criticisms of the top-down budget creation process. A discussion of our findings in detail leads us to consider the possibility of introducing a participatory mechanism into the budgetary process of Seoul city districts.

#### III. Scope and method of the analysis

To determine citizen preference we conducted an online survey consisting of a list of 27 services provided by Seoul local governments and asked respondents to choose the five items they considered the most important services and to rank them according to preference. The online survey was conducted from 12–19 November 2009 by Seoul National University's IT service centre. The respondents were mainly Seoul National University students at both the undergraduate and graduate level residing in Seoul, but faculty members and administrative staff also participated as respondents. After excluding 149 responses out of a total of 1243 on the basis of unreliability, 1106–1107 responses were used as the basis of our statistics. The age of respondents ranged from 18 years old to 68 years old with a mean of 31.08 and standard deviation of 8.92. In terms of sex, one represents male and two represents female, therefore the mean of 1.41 shows that 41% of respondents were female. Income ranged from four to 30,000 with the scale based on 10,000 KRW with a mean of 494.72 and standard deviation of 1278.03 (see Table 1).

#### Descriptive statics of the sample

We reached our conclusions using the following methods. First, we ranked the 27 services in order of preference based on the results of this survey. Second, we used the 2009 indicative budget paper of Seoul city (2009 Performance budget report) in order to determine the quantities of money used to fund each service.

Table 1. Sample demographics

Variable	No. of observations	Mean	S.D.	Min	Max
Age	1107	31.08	8.92	18	68
Sex	1106	1.41	0.49	1	2
Income (10,000 KRW per month)	1107	494.72	1278.03	4	30,000

To discover the rate of change in budget allocations over recent years, we compare the above quantities with those found in the 2006 budget.<sup>2</sup> We next ranked respondents according to their income level to find how the preferences of citizens change according to the amount of money they earn. Here we used the Logit analysis method.<sup>3</sup> Lastly, we investigated the relationship between citizens' preferences for several services and the rate of change in financial allocation for these services between 2006 and 2009 in order to determine, should proportional budget allocations be unreflective of citizen preference, whether or not those services that citizens prefer most highly showed the greatest increase in funding relative to other services.

### IV. Findings

## 1. Citizen's priority

The survey results of citizens' priorities are listed in Tables 2–5. ENV (safe air, water and land and other environment concerns) was selected as the most highly desired service by the greatest number of citizens. ENV was followed by STREET, HOUSING, SAFETY, TRANSIT and LIVING COST, which are ordered based on their level of citizen priority. ENV appears to be important to all citizens, regardless of their level of income.

It is interesting to note that both environmental concerns and forestation are preferred more highly than job creation. This is despite the fact, since the 1997 Asian financial crisis, the overall quality of employment of citizens in the country has experienced a sharp decline (Chang 2007), and thus reflects the growing emphasis that is placed on quality of life by the citizens of Seoul. Second, a high level of preference for traffic-related issues, as reflected in the presence of STREET, TRANSIT and PARKING in the top 10 preferences of citizens, shows that, despite having one of the most advanced public transportation systems in the world, Seoul is still a very crowded place to live. Finally, that five of the lowest seven ranking preferences involve essential services, such as sewage, fire prevention and general access to services, reveals that the citizens of Seoul consider the local bureaucracy to be effective in delivering the necessities of life.

#### 2. Level of income and citizen priority

In the following section we will analyse how each service priority varies according to age, sex and income. The results are listed below.

Table 2. Seoul citizens' service priorities

Ranking	Service	Abbreviation	Total (unweighted)	Total (weighted)
1	Safe air, water and land and other environment concerns	ENV	536	1911(1)
2	Street and traffic related/easy to get around	STREET	526	1724(2)
3	Housing issues	HOUSING	461	1622(3)
4	Public safety	SAFETY	378	1241(4)
5	Public transit	TRANSIT	346	1065(5)
6	Cost of living/affordability issue	LIVING COST	339	1047(6)
7	Forestation	FORESTATION	273	700(8)
8	Public education	<b>EDUCATION</b>	265	797(7)
9	Parking	PARKING	237	641(11)
10	Recreation related/things to do	RECREATION	225	661(9)
11	Job/employment related	JOB	218	655(10)
12	Health services related	HEALTH	194	546(12)
13	Parks related	PARK	184	467(13)
14	Garbage and cleanliness issues	GARBAGE	167	428(14)
15	Noise problems	NOISE	133	354(15)
16	City design/beautification issues	DESIGN	126	290(19)
17	Youth related	YOUTH	119	306(18)
18	Lower taxes	TAXES	110	310(17)
19	Responsiveness to citizens	RESPONSIVE	110	322(16)
20	Library related	LIBRARY	104	264(20)
21	Service access	ACCESS	96	235(21)
22	Boost local economy	ECONOMY	80	214(22)
23	Emergency medical services	EM-MEDICAL	62	163(23)
24	Adult education/life-long learning issues	ADULT-EDU	57	132(25)
25	Fire suppression and prevention	FIRE	55	141(24)
26	Food options	FOOD	36	98(26)
27	Sewage issues	SEWAGE	27	61(27)

At statistically significant levels, the lower the income level, the greater the possibility that people will choose 'LIVING COST' and 'NOISE' among their five most important government services. On the other hand, the result demonstrates that higher income levels correspond to increased interest in ADULT-EDU. There is no statistical significance regarding whether HOUSING was chosen among the top five priorities or not, but it is possible to infer that HOUSING will be selected as the top priority increasingly as income levels decrease. In other words, cases which ranked HOUSING second, third, fourth or fifth in terms of priority reflect no differences related to income levels. The cases where HOUSING was selected as a top priority, however, seem to reveal that HOUSING is the most important issue among the lowest income levels, in spite of the fact that all income levels tend to be conscious of HOUSING.

There is no statistically significant correlation between levels of income and a wide variety of services, including ENV, STREET, TRANSIT, EDUCATION as well as both ECONOMY and JOBS. In other words, these services are considered important services regardless of income ranges, and thus a budget that fully reflects the preferences of citizens should allocate similar levels of resources to each of these spending categories regardless of the income level of the city region.

Table 3. Budget priorities by age, sex and income

	Total	0.47118*	-0.14	0.037526	-0.50016**	-0.43631***	0.03836	69090.0-	0.024228	-0.09525	-0.50011*	0.098337	0.071361	-0.9783***	0.427064***	-0.36799***	0.654273**	-0.07306	0.049306	0.593996**	-0.35736**	0.113412	-0.48511	-0.23515	0.074427	-0.27564	0.15215	-0.20303*	1.534952***	0.422018	0.279933*
	p5	-0.35422	-0.33161	0.059304	-0.76309	0.065337	0.199919	-0.64734	-0.28026	0.014415	0.714215	0.185927	-0.01514	-0.20804	0.57978**	-0.27629**	0.795474	0.382556	-0.11124	1.188535**	-0.17226	-0.15003	-1.30954**	-0.45005	0.052519	0.988569	0.040702	-0.37784*	1.579535	0.727347	0.365237
Priorities	p4	0.052611	-0.16023	-0.0443	0.239462	0.002166	-0.0883	-0.16301	0.329614	-0.02671	-0.579	-0.18518	0.144243	-0.85754	0.242506	-0.33067**	-0.27108	-0.36336	0.188367	0.485427	-0.20724	0.141011	-0.19751	-0.09024	0.088467	-1.67279**	0.011019	-0.11361	1.665065**	-0.07877	-0.12271
Prio	p3	-0.23042	-0.00694	0.11591	-0.1757	-0.36257*	-0.06356	0.428551	0.184076	0.114583	0.237117	-0.11943	-0.07118	-1.08845*	0.334281	-0.09979	0.2001	-0.58789*	-0.00581	-0.39225	-0.34848	0.049258	0.527547	-0.344	-0.08894	-0.1495	0.650174*	-0.37864*	0.568472	1.020693	0.555719**
	p2	0.603044	0.093204	-0.1826	-0.35696	-0.35297*	0.008235	-0.22961	0.248795	0.033908	-0.51713	0.165628	0.004243	-0.55869	0.240346	-0.25392*	0.895459*	0.052003	0.004674	0.162358	-0.38915	0.341651**	-0.22986	0.13379	0.040043	-0.21422	-0.69143	0.342048	1.450228	0.687608	0.492144
	p1	0.62035**	-0.07828	0.098824	-0.3615	-0.44415**	0.069254	0.18456	-0.20751	-0.26598***	-1.74164***	0.386653	0.174045	-0.95668*	0.140483	-0.27018**	1.135998*	0.381072	0.085397	2.069305**	-0.49137	-0.20908	-1.11487	-0.22462	0.243172	-0.10651	0.67541	-0.35458	3.645801	I	0.115346
	Independent variable	Age	Sex	Income	Age	Sex	Income	Age	Sex	Income	Age	Sex	Income	Age	Sex	Income	Age	Sex	Income	Age	Sex	Income	Age	Sex	Income	Age	Sex	Income	Age	Sex	Income
	Code	ENV			STREET			HOUSING			TRANSIT			LIVING COST			EDUCATION			PARKING			RECREATION				NOISE			ADULT-EDU	
	Rank	_			2			3			5			9			8			6			10				15			24	

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Table 4. Comparison of the local district budgets and citizen priorities

			SEOCHO DISTRICT	GURO DISTRICT	GWANAK DISTRICT
Ranking	Service	Abbreviation	Budget (Ratio by SEOCHO budget)	Budget (Ratio by GURO budget)	Budget (Ratio by SEOCHO Budget (Ratio by GURO Budget (Ratio by GWANAK budget) budget)
1 Sa	Safe air, water and land and other	ENV	21,819,000,000	14,400,000,000	10,325,000,000
2 Sta	Street and traffic related/easy to get around	STREET	(5,200) 19,655,000,000 (6,231)	(5.232) 12,039,000,000 (4.434)	(5. <del>7</del> 07) 4,937,000,000 (1.628)
5 Pu	Public transit	TRANSIT	1,560,000,000 (0.494)	905,000,000	(1:028) 474,000,000 (0.156)
) 9	Cost of living/affordability issue	LIVING	53,121,000,000 (16,813)	83,919,000,000 83,919,000,000	(5.135) 115,961,000,000 (38,233)
8 Pu	Public education	EDUCATION	7,144,000,000 7,144,000,000	0,000	(38:233) 4,201,000,000 (1385)
10 Re	Recreation related/things to do	RECREATION	7,663,000,000 7,642,000,000	000,000	8,998,000,000 7,967)
12 He	Health services related	НЕАГТН	(2:423) 5,924,000,000 (1875)	8,292,000,000 (3,047)	(2.557) 7,749,000,000 (2.555)
22 Bc	Boost local economy	ECONOMY	(1.97.2) 1,968,000,000 (0.623)	1,419,000,000	(2:332) 3,311,000,000 (1.692)
Tc	Total		315,961,000,000	272,100,000,000	303,300,000,000

Table 5. Comparison of the local district budget and citizen priorities

		Growth rate of 2006 budget to 2009 budget	Citizen preference ranking	
City design/beautification issues	DESIGN	3.97	16	
Service access	ACCESS	2.33	21	
Parking	PARKING	1.94	9	
Safe air, water and land and other environment concerns	ENV	1.85	1	
Parks related	PARK	1.18	13	
Health services related	HEALTH	0.82	12	
Cost of living/ affordability issue	LIVING COST	0.66	6	
Boost local economy	ECONOMY	0.61	22	
Housing issues	HOUSING	0.56	3	
Street and traffic related/ easy to get around	STREET	0.52	2	The line of average growth rate
				(0.52)
Recreation related/things to do	RECREATION	0.43	10	
Fire suppression and prevention	FIRE	0.42	25	
Job/employment related	JOB	0.36	11	
Youth related	YOUTH	0.29	17	
Sewage issues	SEWAGE	0.26	27	
Forestation	FORESTATION	0.07	7	
Public transit	TRANSIT	-0.17	5	
Responsiveness to citizens	RESPONSIVE	-0.32	19	

#### 3. Comparison to the local district budget and citizen priorities

Seoul city has 25 local districts that have their own independent budget and different ratios of low-income populations. We have already found that citizen preferences for some services differ according to income levels. We have thus selected three districts with different average income levels and divided the districts accordingly. Seocho was found to be the district with the highest proportion of high-income levels while Gwanak district was found to have the highest proportion of low incomes; Guro district was found to be in the middle range. Based on the results, the question then becomes one of whether the three districts reflect the income level of their own residents in their budgeting allocations. Unfortunately, categories of expenditure in the budget data available are not as granular as they are in our survey, and thus certain spending areas, such as PARKING, ADULT-EDU and NOISE, are not shown as individual allocations. On the other hand, city budget data have clearly defined categories for ENV, STREET, TRANSIT, LIVING COST, EDUCATION and ECONOMY. As we have seen, citizen preference for LIVING COST is negatively correlated with income, and thus, if budget allocations for this category make up a larger proportion of the local budget for Gwanak, the district with the most citizens in the lowest income bracket, than they do for either Guro or Seocho, we can say that this is desirable from a citizen preference standpoint. Likewise, as strong preferences for services related to ENV, STREET, TRANSIT or ECONOMY are not correlated to income, we should expect that budget allocations for these service areas be equivalent proportionally across districts.

In Table 4 we can see that budgetary expenditure on services related to LIVING COST make up proportionally more of the local budget the lower the income level. In this case, we can say that public spending on LIVING COST mirrors differences in income level, and thus citizen preference. On the other hand, budget allocations for ENV, STREET, TRANSIT and EDUCATION, which have no preferential difference according to income level at a statistically significant level, are allocated in the order of highest to lowest income levels. While it is true that emphasising a particular area of the budget will necessitate cuts elsewhere, citizens in the lowest income bracket consider ENV, STREET, TRANSIT and EDUCATION to be of equal importance to those in the highest income bracket, and thus differences in the proportion of the budget devoted to these service areas based on income imply a failure of public officials to deliver a budget reflecting citizen preference. Moreover, in Gwanak, a great deal of emphasis has been placed on the ECONOMY, and yet here also we have seen no statistically significant correlation between income level and preference for ECONOMY or JOB, again implying that citizens of Gwanak, given the chance to participate in the budget making process, may have spent these funds differently. Thus, our findings show that while budget allocations across the different districts of Seoul generally reflect the income levels of the electorate in each respective district, they do not necessarily reflect the preferences of citizens within these districts.

#### 4. Comparison of citizens' priorities to local government budgets

We compared citizen priorities with Seoul's annual city budget: the rate of increase in specific budget allocations from 2006 to 2009. Our results are listed in Table 5.

Compared with 2006, the average increase rate of budget items for 2009 is 0.52%. Among 18 services, nine have a higher growth rate than average, one is equal to the average and the remaining eight are below. DESIGN exhibits the highest rate of budget increase at 3.97%. This is explained by a major policy shift implemented by mayor Oh aimed at beautifying the city's appearance. Nevertheless, DESIGN ranks 16th in terms of citizen preference, suggesting that the mayor's spending priorities significantly diverge from the general preferences of Seoul citizens. DESIGN is followed by ACCESS and other services in the order of PARKING, ENV, PARK, HEALTH, LIVING COST, ECONOMY and HOUSING. In addition, it is RESPONSIVE that exhibits the lowest budget increase at -0.32%. RESPONSIVE includes all budgets allocated to enhance city administration's responsiveness and efforts to encourage citizen participation in

the policy-making process. RESPONSIVE is followed by TRANSIT, FORESTATION, SEWAGE, YOUTH, JOB, FIRE and RECREATION as areas of expenditure that grew the least over the period 2006–2009.

In addition to DESIGN, ACCESS and PARKING have also shown high rates of budgetary increase, despite citizens' low priority preference of these items. Nevertheless, as ACCESS is primarily aimed at improving accessibility to public place, especially for the disabled, it may be difficult for unimpaired citizens to appreciate the mobility challenges faced by the physically handicapped as they attempt to navigate Seoul. In this case, while budgetary expenditure is not perfectly aligned with citizen preference, the question remains as to whether a commitment to fairness requires significant growth in expenditure in this budget category regardless of citizen opinion. Additionally, the citizen priority rank of ECONOMY (22th) appears to be quite low compared to corresponding high increase rates in the budget (0.61%).

For the cases of FORESTATION and TRANSIT, the rate of budget increase for each service is lower than the average rate of increase for the total budget, which reveals that both services are becoming less prominent in the total budget, while citizen priority for both services was highly ranked (seventh and fifth). Again in this case, then, there exists a significant gap between the increased rate of the budget and citizens' preferences.

## V. Conclusion: the case for participatory budgeting in Seoul

The absence of a participatory framework wherein citizens can express their preferences directly to those with budget making powers has created a situation in which there is a significant gap between citizen priorities and annual budget allocations in Seoul, both at the city and district level. Specifically, our study reveals three things. First, as may be expected, preferences for public services are to some extent dependent on income level. Second, district budget allocations in Seoul do not fully reflect citizen preference, particularly in the poorer districts of the city. And finally, the rate of change in resource allocation for particular services does not show a trend towards the reconciliation of citizen preference and resource allocation. As for particular services, DESIGN and ACCESS rank as the highest categories of budgetary growth, despite their being 16th and 21st in terms of citizen preference. The HOUSING category, ranked as the third highest priority by citizens, was seen to grow at a slower rate than the ECONOMY category, even though boosting the local economy was ranked 22nd in terms of overall priorities. Among other discrepancies between expenditure and citizen preference, FORESTATION, ranked seventh by citizens, grew at the slowest rate of any budgetary item. TRANSIT as a percentage of budgetary expenditure actually shrank during our sample period, despite its ranking as the fifth highest priority.

There are several limitations to our study due to the somewhat restricted demographics of the sample. First, the sample's mean age of 31 is lower than the national median age of 38 years (United Nations 2010). On the other hand,

no respondent was over the age of 68, and as such the policy preferences of the elderly are not reflected in the results. Second, Seoul National University is the most prestigious educational facility in the country, and competition for entrance as a student, professor or administrative staff member is high. Because our sample was drawn from this group, it may be the case that their policy preferences are different than other citizens, which may complicate our findings. Finally, our survey did not contain demographic variables other than age, sex, income and residence, and therefore there may be other factors besides these in explaining policy preferences that our results do not capture adequately.

It can be said that in general the policy creation process in South Korea is top-down and authoritarian at its core (Im 2010), and that reform initiatives often serve to reinforce historical structures of power rather than redistribute control in a more equitable way. In general, however, it is far more difficult to make the case for genuine change when the system appears to be working well, with the decisions that elected officials make embodying the preferences and priorities of the citizens who elected them, despite the authoritarian manner in which those decisions are made. The value of our study lies in its challenge to this appearance, and in providing an empirical foundation upon which reform activists can better stake their claim. If policy that fully realises the wishes of the electorate is of a higher value than efficient government operations and stability in society at large, then our study implies that it is time to examine methods by which to close the gap between citizen preference and resource allocation in Seoul.

We here return to the question of whether or not participatory budgeting is an appropriate such method. Among the low-cost indicators for successful participation, Irvin and Stansbury (2004) list a geographic concentration of stakeholders and Ostrom (1990) suggests a greater chance for success if stakeholders are a relatively homogenous group, which ensures that fewer community representatives will be needed and therefore that decisions can be made with higher levels of efficiency; both of these conditions are adequately met by residents of the various districts in Seoul. As the number of participants required for effective representation of the general community is low, moreover, we can expect there to be enough citizens who enjoy the financial or employment flexibility necessary to attend meetings. As a final condition for successful participatory budget creation, deciding which services and projects should receive a proportional increase in resource allocations is a relatively straightforward process, insofar as such decisions are based on citizen preference, of which participants can be said to have intimate knowledge. The condition that citizens not be required to master complex or technical information is thus also met (Irvin and Stansbury 2004).

There are, however, significant obstacles that call into question the possibility of participatory budget making in Seoul districts. Though the districts themselves may represent the ideal size and level of population homogeneity, there is also the fact that individual districts have a limited autonomy when deciding budget allocations. Thus, participants, despite what they decide, may be powerless to effect the changes that they desire. This lack of authority can lead to resentment and dissatisfaction among participants (Davis 1996, Smith and

McDonough 2001). Further structural obstacles to participatory budgeting involve the top-down manner in which the budgetary categories themselves, for instance, DESIGN, are based on the mayor's preferences and effectively outside individual district control. This inability to question the underlying assumptions upon which a budget is based removes one of the primary conditions for fairness in any participatory framework (Crosby 1986). Finally, as the discretionary funds of any district are small in comparison to those directed from the top level of city government, it remains to be examined whether or not funds are already allocated to essential areas of improvement and, if so, would citizens choose to spend them differently, thus obviating our original purpose for participation (Irvin and Stansbury 2004). Perhaps most detrimental for the possibility of participatory budgeting in Korea, however, is the unlikelihood of the leadership ever offering of their own accord an invitation to the decision-making table. Born of a military dictatorship, the bureaucracy of Korea is powerful, robust and efficient (Im 2004), and thus not likely to seek legitimation through a medium that would lead to the weakening of their power to make decisions (MacNair et al. 1983). Thus RESPONSIVENESS, the budget category which covers expenditures aimed at making the local bureaucracy more participatory, received the largest cut from the 2009 budget. On the other hand, this category was also ranked 19th by citizens, which implies that currently the citizenry of Seoul has more pressing priorities than further democratising the bureaucracy.

#### Notes on contributors

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#### Notes

- 1. We also included income outliers and people living outside of Seoul.
- 2. We should note that 2006 budget allocations were decided in 2005, one year before the current mayor at the time of writing, Oh Se-hoon, was elected. The 2009 budget was

- created after he was inducted into the office of mayor. Therefore, changes in the budget structure can be assumed to be the result of the current mayor's policy orientation.
- 3. One of our reviewers for this article suggested an ordered probit model as an alternative to logistics analysis. We chose the latter since in the survey design respondents were not asked to rank every service but only their top five choices, which could lead to bias if ordered probit were used as our data only offer ranking information for the five chosen services and do not have information for what is not chosen. Moreover, during administration of the pilot survey, we interviewed respondents and found that they felt it was relatively easy to choose five important services but much more difficult to rank those five. In this case, analysing the relative importance of five chosen services and why people rank them that way is less meaningful than simply analysing what five things people choose among 27 services and why they choose them. Logit analysis is more suited to this type of analysis.

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Table A1. Logistics analysis

Rank         Code         Independent variable         p1         p2         p3         p4         p5           1         ENV         Age         0.62035***         0.663044         -0.23042         0.0552611         -0.3442         0.03544           2         Sex         -0.07828         0.093204         -0.16053         -0.1361         -0.0654         -0.16023         -0.33161         -0.           2         STREET         Age         -0.04415**         -0.35597*         -0.06556         -0.739462         -0.63597*         -0.06556         -0.739462         -0.63597         -0.0556         -0.7329462         -0.1757         0.002166         -0.06539         -0.0559         -0.0556         -0.7329462         -0.7329462         -0.7329462         -0.7329462         -0.7329462         -0.7329462         -0.7329462         -0.7329462         -0.732946         -0.05556         -0.05556         -0.05556         -0.05556         -0.05556         -0.05556         -0.05556         -0.05556         -0.05556         -0.05556         -0.05556         -0.05567         -0.05579         -0.05576         -0.05579         -0.05576         -0.05579         -0.05579         -0.05579         -0.05579         -0.05579         -0.05579         -0.05579         -0.05579						Priorities	ities		
ENV         Age         0.62033***         0.603044         -0.23042         -0.06541         -0.35422         -0.33422         -0.33422         -0.06644         -0.16023         -0.33161         -0.33462         -0.00834         -0.16023         -0.33161         -0.33462         -0.00834         -0.16023         -0.33161         -0.33462         -0.06354         -0.06354         -0.06356         -0.1757         0.023462         -0.03360         -0.033462         -0.06353         -0.05330         -0.05330         -0.05330         -0.05330         -0.05330         -0.05330         -0.05330         -0.05330         -0.05330         -0.05330         -0.05330         -0.05330         -0.05330         -0.06333         -0.06333         -0.06333         -0.06333         -0.06333         -0.06333         -0.06334         -0.13931         -0.13031         -0.13031         -0.13031         -0.13031         -0.13031         -0.13031         -0.13031         -0.13031         -0.13031         -0.13031         -0.13131         -0.13031         -0.13031         -0.13131         -0.13131         -0.13131         -0.13131         -0.13131         -0.13131         -0.13131         -0.13131         -0.13131         -0.13131         -0.13131         -0.13131         -0.13131         -0.13131         -0.13131         -0.	Rank	Code	Independent variable	p1	p2	p3	p4	p5	total
STREET         Age         0.3615         0.35566         0.1757         0.00216         0.05304           HOUSING         Sex         -0.4415**         -0.35666         -0.1757         0.00216         0.06337         -0.76304           HOUSING         Sex         -0.44415**         -0.3597*         -0.3655*         -0.00216         0.06337         -0.76301           HOUSING         Sex         -0.20751         0.248795         0.184076         0.329614         -0.28026           SAFETY         Age         0.2687**         0.03308         0.114583         -0.02671         0.014415           SAFETY         Age         0.264570**         0.01884         0.120126         -0.73627         0.016391           TRANSIT         Age         0.264570**         0.01639         0.04254         0.02869         0.13713           LIVING COST         Age         0.1740***         0.05043         -0.11443         -0.1813         0.01534           LIVING COST         Age         0.1740***         0.05348         0.01639         0.04554         0.02804           Sex         0.140483         0.24034         0.01184         0.24804         0.02804           Jincome         0.1740***         0.15425<	1	ENV	Age Sex	0.62035** -0.07828	0.603044 0.093204 -0.1826	-0.23042 -0.00694 0.11501	0.052611 -0.16023 -0.0443	-0.35422 -0.33161 0.059304	0.47118* -0.14
HOUSING Age 0.18456 -0.22051 0.16301 0.10415 0.16301 0.1415 0.248795 0.184076 0.329614 0.064734 0.228026 0.184076 0.329614 0.028026 0.184076 0.329614 0.028026 0.184076 0.329614 0.028026 0.184076 0.329614 0.028026 0.184078 0.228026 0.134078 0.19415 0.014415 0.026185 0.0220126 0.073627 0.062841 0.011415 0.014415 0.026185 0.016398** 0.4040337* 0.10358 0.13719 0.13719 0.0220126 0.025717 0.052841 0.018869 0.13719 0.02423 0.042594 0.085041 0.018869 0.174215 0.23717 0.23717 0.05589 0.185927 0.174215 0.052842 0.023717 0.05798 0.185927 0.140483 0.140483 0.240346 0.334281 0.242506 0.57598** 0.140483 0.240346 0.334281 0.242506 0.57598** 0.240346 0.1334281 0.242506 0.57598** 0.240346 0.1334281 0.133667** 0.038635 0.13367** 0.03367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.13367** 0.133	2	STREET	Age Sex	-0.3615 -0.44415**	0.35297* -0.35297* 0.008235	-0.1757 -0.36257* -0.06356	0.239462 0.002166 0.0883	0.055334 -0.76309 0.065337 0.199919	-0.50016** -0.43631***
SAFETY         Age         0.50936         0.20126         0.11743         0.010138         0.01031           Sex         0.564579***         0.509185**         0.40337*         0.10138         0.011031           TRANSIT         Age         0.564579***         0.509185**         0.042594         0.085041         0.011031           TRANSIT         Age         -1.74164***         -0.51713         0.237117         -0.579         0.714215         -0.08869           Income         0.174045         0.0165628         -0.11943         -0.18518         0.14252         -0.18527           LIVING COST         Age         -0.55869         -0.55869         -1.08845*         -0.20874         -0.01514           Sex         0.140483         0.240346         0.33667*         -0.27629**         -0.27629**           FORESTATION         Age         -0.27018**         -0.23302*         -0.09979         -0.33667*         -0.248211**           FORESTATION         Age         -0.27018*         0.16425         -0.13841         -0.13844         -0.49885           FOUCATION         Age         1.135998*         0.16425         -0.10849         -0.13841         -0.11124           Sex         0.085397         0.062003	8	HOUSING	Age Sex	0.18456 -0.20751 -0.26508***	-0.22961 0.248795	0.428551 0.184076 0.114583	-0.16301 0.329614	-0.64734 -0.28026 -0.0014415	-0.06069 0.024228 -0.00525
TRANSIT Age	4	SAFETY	Age Sex	0.388868 0.564579***	0.220126 0.220126 0.509185**	0.40037*	0.062841 0.062841 0.101358	0.611031 -0.13719 -0.08860	0.165797 0.477565***
LIVING COST Age	S	TRANSIT	Age Sex	0.38653 0.174045	0.165628 0.165628 0.004243	0.237117 -0.11943 -0.07118	-0.579 -0.18518 -0.142243	0.714215 0.7185927 -0.01514	-0.50011* -0.50011* 0.098337
FORESTATION Age	9	LIVING COST	Age Sex income	0.140483 -0.27018**	0.240346 -0.253809 -0.240346 -0.25392*	-1.08845* 0.334281 -0.09979	-0.85754 -0.242506 -0.33067**	-0.20804 -0.57978** -0.27629**	0.427064***
EDUCATION         Age Sex         1.135998*         0.895459*         0.2001         -0.27108         0.795474           Sex         0.381072         0.052003         -0.58789*         -0.36336         0.382556         -0.382556           income         0.085397         0.004674         -0.00581         0.188367         -0.11124           PARKING         Age         2.069305**         0.162358         -0.39225         0.485427         1.188535**           Sex         -0.49137         -0.38915         -0.34848         -0.20724         -0.17226           income         -0.20908         0.341651**         0.049258         0.141011         -0.15003		FORESTATION	Age Sex income	-0.40747 -0.30496 0.295731	-0.09388 -0.11312 -0.10412	1.198166** 0.154526 -0.15841	-0.33684 0.036635 -0.10844	-0.49885 -0.64821**	-0.006 -0.2299 -0.03273
PARKING         Age         2.069305**         0.162358         -0.39225         0.485427         1.188535**           Sex         -0.49137         -0.38915         -0.34848         -0.20724         -0.17226         -0.17226           income         -0.20908         0.341651**         0.049258         0.141011         -0.15003	∞	EDUCATION	Age Sex income	1.135998* 0.381072 0.085397	0.895459* 0.052003 0.004674	0.2001 -0.58789* -0.00581	-0.27108 -0.36336 0.188367	0.795474 0.382556 -0.11124	0.654273** -0.07306 0.049306
	6	PARKING	Age Sex income	2.069305** -0.49137 -0.20908	0.162358 -0.38915 0.341651**	-0.39225 -0.34848 0.049258	0.485427 -0.20724 0.141011	1.188535** -0.17226 -0.15003	0.593996** -0.35736** 0.113412

(continued)

Table A1. (Continued).

					Priorities	ities		
Rank	Code	Independent variable	p1	p2	p3	p4	p5	total
10	RECREATION	Age Sex	-1.11487 -0.22462 0.243172	-0.22986 0.13379 0.040043	0.527547 -0.344 -0.08894	-0.19751 -0.09024 0.088467	-1.30954** -0.45005	-0.48511 -0.23515 0.074427
11	JOB	Age Sex	0.264677 -0.2814	0.098907 0.831805*** -0.13144	-0.36045 0.266279 -0.08228	-0.00758 -0.275156 0.275198	-0.12115 -0.40992 0.161053	-0.24069 0.303037**
12	НЕАГТН	Age Sex income	0.22517 1.456842** 0.165632 0.069021	0.493256 -0.27516 0.115705	0.870298 0.382093 -0.04104	-0.01268 -0.33733 -0.380413	0.759987 0.280919 0.173303	0.870484*** 0.104489 0.144641
13	PARK	Age Sex income	1.000477 1.191741** 0.340808	-1.22692 -0.46673 0.048887	0.771937 -1.00305*** 0.114721	-0.34788 -0.04365 0.068268	-0.19221 $-0.11871$ $-0.01721$	-0.00766 -0.2406 0.102038
14	GARBAGE	Age Sex income	-1.05655 -0.38578 -0.03209	0.769298 -0.58182 -0.16119	-0.50682 0.57068* 0.043385	0.365432 0.300763 -0.08221	0.105481 0.311685 0.168393	0.115626 0.17063 0.002377
15	NOISE	Age Sex income	-0.10651 0.67541 -0.35458	-0.21422 -0.69143 0.342048	-0.1495 0.650174* -0.37864*	-1.67279** 0.011019 -0.11361	0.988569 0.040702 0.37784*	-0.27564 -0.15215 -0.20303*
16	DESIGN	Age Sex income	-4.99734** -1.58202 -0.17365	-0.56923 -1.57201** 0.116688	-1.78699** -0.15729 0.021938	-0.64753 -0.78686** 0.243722	-0.69908 -0.24512 0.09675	-1.17645*** -0.61501***
17	YOUTH	Age Sex income	0.521644 0.403562 -0.13532	-0.39051 0.107909 0.387255*	-0.66175 0.089099 0.306395	1.056234 0.402751 -0.375*	-1.11742 0.709403* -0.00141	-0.13989 0.410946**
18	TAXES	Age Sex income	-0.0468 -0.4426 0.024979	-1.27348 $-0.05641$ $-0.13252$	0.224605 -0.30566 0.33098	0.857141 0.5899 0.006608	-0.21279 $0.283974$ $-0.13354$	-0.03606 0.066581 0.026615
								(continued)

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Table A1. (Continued).

pendent variable p1 p2 p2 p3  -1.51786* -0.84269 -1.99573* -0.56835 -0.7684 0.091535  -0.196038 -0.43553* -0.14035  -0.40521 -0.04895 0.068695 -0.0521 -0.04895 0.068695 -0.0521 -0.04895 0.068695 -0.0521 -0.04895 0.068695 -0.039153 -0.74125 0.32583 -0.39153 -0.331572 -0.33259 -0.20624 -0.331572 -0.33259 0.05073 -0.4050173 -0.1682 0.057079 -0.57178 0.326982 0.657079 -0.57178 0.326982 0.657079 -0.57178 0.32464 -0.65732 -0.657178 0.049214 0.555719** -0.47819 0.04921 -0.56795 -0.47819 0.04921 -0.56795 -0.47819 0.01771 -0.47814 0.38414* -1.21853 -0.47517 0.06811 -1.824814 2.34434* -2.8526954 1.824814 2.34434*					Priorities	ities			
NNSIVE Age	Code	Independent variable	p1	p2	p3	p4	p5	total	
RY Age 0.196038	RESPONSIVE	Age Sex	-1.51786* $-0.56835$	-0.84269 -0.76584	-1.99573*	0.596746	-1.18934 $0.095106$	-1.05403**	
NSY Age 0.740572 0.251925 -0.30724 -0.0521 -0.04895 0.068695 -0.0521 -0.04895 0.068695 -0.0521 -0.04895 0.068695 -0.0521 -0.04895 0.068695 -0.0521 -0.05542 0.05542 0.05542 0.05542 0.05542 0.05542 0.031573 -0.041058 0.074125 0.037583 -0.031572 -0.331572 -0.33259 -0.20624 0.050173 0.050173 -0.1682 0.050079 -0.050173 0.050173 -0.1682 0.050079 0.050173 0.050173 0.050173 0.050173 0.050171 0.0		income	0.196038	-0.43553*	-0.14035	0.109671	-0.13121	-0.07598	
SS Age — 0.0521 — 0.04895 0.068695 — 0.7538** 0.133739 — 0.16437 — 0.16437 — 0.25542 0.213583 — 0.20001 1.055542 0.323583 — 0.20001 1.055542 0.323583 — 0.331572 — 0.33259 — 0.20624 0.331572 — 0.33259 — 0.20624 0.34561 0.326982 0.670079 — 0.20624 0.050173 — 0.1682 0.154582 0.050173 — 0.1682 0.154582 0.050173 — 0.1682 0.154582 0.050173 — 0.1682 0.050173 — 0.050173 — 0.06262 0.050173 0.030701 0.28082 0.049214 0.555719** — 0.28082 0.049214 0.555719** — 0.04921 — 0.56795 0.01771 — 0.308119 0.01771 — 0.308119 0.01771 — 0.308119 0.01771 — 0.308119 0.01771 — 0.308119 0.01771 — 0.308119 0.01771 — 0.308119 0.01771 — 0.308119 0.01771 — 0.285737 0.386431 — 0.285737 0.386434 0.285737	LIBRARY	Age	0.740572	0.251925	-0.30724	-0.20962	0.091401	0.037335	
SS Age		Sex	-0.0521	-0.04895	0.068695	-0.12031	0.608681	0.156414	
SS Age		income	-0.7538**	0.133739	-0.16437	-0.07315	-0.28186	-0.18399	
Sex -0.39153 -0.74125 0.397983 -10.00me 0.331572 -0.33259 -0.20624 0.331572 -0.33259 -0.20624 0.331572 -0.33259 -0.20624 0.331572 -0.33259 -0.20624 0.32681 0.32682 0.427079 -1.11389 -2.37300*** 0.4050173 -0.16682 0.670079 -0.650173 0.410548 2.000378* -0.62662 0.410548 2.000378* -0.62662 0.410548 0.32464 -0.63732 0.410548 0.32464 -0.63732 0.427178 0.32464 -0.63732 0.427178 0.368701 0.45028 0.568701 0.45028 0.687608 0.492144 0.555719** -0.037824 0.37824 0.355719** -0.037824 0.37824 0.37824 0.37824 0.01771 0.368719 0.01771 0.368719 0.01771 0.368719 0.01771 0.06011 0.001771 0.086724 0.14117 0.08613 0.285737 0.285737	ACCESS	Age	-0.20001	1.055542	0.323583	-2.51959**	-0.13582	-0.21898	
OMY Age 0.331572 -0.33259 -0.20624  Sex 0.462617 0.326982 0.670079 -0.362632  EDICAL Age 0.410548 2.000378* -0.62662  Sex -0.51778 0.32464 -0.63732  income 0.280852 0.042713 -0.30701  T-EDU Age 0.115346 0.492144 0.555719** -0.63762  Sex -0.2153464 -0.63732  T-EDU Age 0.42044 0.556719** -0.63764  Age -0.37824 2.34812** -0.6775  Sex -0.049921 -0.56795  income 0.68424 -0.14117 -0.06011  income 0.86424 -0.14117 -0.08613  GE Age -0.237844 2.34434*  Sex -0.237844 2.34434*		Sex	-0.39153	-0.74125	0.397983	-0.09412	0.005853	-0.11079	
OMY Age 1.520811 -1.11389 -2.37309**  Sex 0.462617 0.326982 0.670079  income 0.050173 -0.16682 0.670079  Colored Age 0.410548 0.00378* -0.62662  EDICAL Age 0.410548 0.00378* -0.62662  Income 0.280852 0.042713 -0.30701  T-EDU Age 0.45801 1.45028 0.568472  Sex -0.687608 1.020693  income 0.115346 0.492144 0.555719** -  Colored Co		income	0.331572	-0.33259	-0.20624	0.001928	0.079378	-0.02367	
Sex 0.462617 0.326982 0.670079 income 0.050173 -0.16682 0.154582 0.154582 0.41048 2.00378* -0.62662 0.41048 2.00378* -0.62662 0.65732 0.042713 0.03732 0.042713 0.03732 0.042713 0.030701 0.28458 0.042713 0.030701 0.28873 0.042713 0.030701 0.0115346 0.492144 0.555719** 0.049214 0.555719** 0.049214 0.555719** 0.03782474 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.03782474 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.03782737 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.03782737 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.03782737 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.03782434 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.037824 0.03782	ECONOMY	Age	1.520811	-1.11389	-2.37309**	0.998245	-0.23942	-0.26211	
EDICAL Age 0.050173 -0.16682 0.154582  EDICAL Age 0.410348 2.000378* -0.62662  Sex -0.57178 0.32464 -0.63732  income 0.280852 0.042713 -0.30701  T-EDU Age 3.645801 1.45028 0.568472  Sex - 0.115346 0.492144 0.555719** -0.37824  Sex - 0.049214 0.555719** -0.37824  Age - 0.37824 2.344812**  Sex - 0.44517 -0.60111 -0.60111  income 0.86424 -0.14117 -0.08613  GE Age - 0.28434*  Sex - 0.285737  GE Sex - 0.28434*		Sex	0.462617	0.326982	0.670079	-0.5487	0.042154	0.14881	
EDICAL Age 0.410548 2.000378* -0.62662  Sex -0.57178 0.32464 -0.63732  income 0.280852 0.042713 -0.30701  T-EDU Age 3.645801 1.45028 0.568472  Sex -0.115346 0.49214 0.555719** -0.37824  Sex -0.37824 2.344812**  Age -0.37824 2.344812**  Sex -0.49211 -0.60111  Age -7.21853 -0.47517 0.364311  Sex -0.14117 -0.08613  GE Age 5.326954 1.824814 2.34434*  GESST377  Conditional order of the conditional order orde		income	0.050173	-0.16682	0.154582	0.047057	0.148243	0.062081	
Sex	EM-MEDICAL	Age	0.410548	2.000378*	-0.62662	1.815564**	1.629285*	1.324866***	
T-EDU Age 3.645801 1.450228 0.568472 Sex - 0.687608 1.020693 - 0.687608 1.020693 - 0.687608 1.020693 - 0.687608 1.020693 - 0.687608 1.020693 - 0.687608 1.020693 - 0.687608 1.020693 - 0.687608 1.020693 - 0.687608 1.020693 - 0.687608 1.020693 - 0.687608 1.020693 - 0.687608 1.020693 - 0.687608 1.020693 - 0.687679 1.020693 - 0.69771 - 0.60111 - 0.6		Sex	-0.57178	0.324664	-0.63732	0.347966	-0.93192	-0.22727	
T-EDU Age 3.645801 1.450228 0.568472 Sex - 0.687608 1.020693 - 0.687608 1.020693 - 0.687608 1.020693 - 0.687608 1.020693 - 0.115346 0.492144 0.555719** - 0.37824 2.344812**  Sex - 0.049921 - 0.56795 - 0.6795 - 0.049921 - 0.56795 - 0.049921 - 0.56795 - 0.049921 - 0.56795 - 0.049921 - 0.56795 - 0.049921 - 0.601771 - 0.08431 - 0.047517 - 0.084311 - 0.08424 - 0.14117 - 0.08613 - 0.08434*  GE Age 2.326954 1.824814 2.34434*  Sex - 0.285737		income	0.280852	0.042713	-0.30701	0.281424	0.041279	0.09433	
Sex - 0.687608 1.020693 - 0.492144 0.555719** - 0.37824 2.344812** - 0.37824 2.344812** - 0.37824 2.344812** - 0.49214 0.55719** - 0.49214 0.55719** - 0.49214 0.55719** - 0.49214 0.55719** - 0.49214 0.56795 income - 7.21853 - 0.47517 0.364311 - 0.60111 income - 0.86424 - 0.14117 - 0.08613 - 0.285737 Sex - 0.285737	ADULT-EDU	Age	3.645801	1.450228	0.568472	1.665065**	1.579535	1.534952***	
income 0.115346 0.492144 0.555719**  Age		Sex	1	0.687608	1.020693	-0.07877	0.727347	0.422018	
Age – -0.37824 2.344812** Sex – 0.049921 -0.56795 income – 0.308119 0.01771 Age – 7.21853 -0.47517 0.364311 Sex – 0.123171 -0.60111 income 0.86424 -0.14117 -0.08613 Sex – 2.326954 1.824814 2.344334*		income	0.115346	0.492144	0.555719**	-0.12271	0.365237	0.279933*	
Sex — 0.049921 —0.56795 income — 0.308119 0.01771 — 0.308119 0.01771 — 0.308119 0.01771 — 0.12311 — 0.123171 —0.60111 — 0.12317 —0.60111 — 0.86424 —0.14117 —0.08613 — 0.28773 — 0.28773	FIRE	Age	ı	-0.37824	2.344812**	1.965957**	1.917941*	1.503573***	
Sex		Sex	ı	0.049921	-0.56795	0.256009	0.399901	0.066531	
Age		income	ı	0.308119	0.01771	-0.48038*	-0.61706**	-0.19777	
Sex - 0.123171 -0.60111 income 0.86424 -0.14117 -0.08613 Age 5.326954 1.824814 2.344334* Sex - 0.285737	FOOD	Age	-7.21853	-0.47517	0.364311	-0.47064	-0.00515	-0.27849	
income 0.86424 -0.14117 -0.08613 Age 5.326954 1.824814 2.344334* Sex - 0.285737		Sex	1	0.123171	-0.60111	-0.94477	-0.37953	-0.50088	
Age 5.326954 1.824814 2.344334* Sex - 0.285737		income	0.86424	-0.14117	-0.08613	0.167222	0.328905	0.071403	
- 0.285737	SEWAGE	Age	5.326954	1.824814	2.344334*	1.260978	0.410776	1.620345**	
		Sex	ı		0.285737	1.166104	0.134388	0.545445	
income -0.13127 0.306011 0.333076 -0.31065		income	-0.13127	0.306011	0.333076	-0.31065	0.222926	0.149933	