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Mongolian Marketing Consulting Group

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PARTNER

Caritas
Czech Republic

""PUBLIC PERCEPTION STUDY ON CONSTRUCTION WASTE-BASED PRODUCTS"
Report

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Client: Caritas Czech Republic NGO
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ABBREVIATION LIST

LLC PRIVATE ENTITIES

NGO NON-GOVERNMENTAL ORGANIZATION

SME SMALL AND MEDIUM ENTERPRISES

KAP KNOWLEDGE ATTITUDE PRACTICE

BGD BAYANGOL DISTRICT

BZD BAYANZURKH DISTRICT

CHD CHINGELTEI DISTRICT

HUD KHAN-UUL DISTRICT

SBD SUKHBAATAR DISTRICT

SHD SONGINO KHAIRKHAN DISTRICT

CAPI COMPUTER ASSISTED PERSONAL INTERVIEW /DATA COLLECTION BY USING TABLETS/

CSPRO CENSUS SURVEY PROCESSING SYSTEM /DATA ENTRY PROGRAM/

SPSS DATA ANALYSIS PROGRAM

GPS /GLOBAL POSITIONING SYSTEM/

ONE. PROJECT INTRODUCTION AND SURVEY METHODOLOGY

1.1 PROJECT INTRODUCTION

The Caritas Czech Republic NGO is implementing a project **"Supporting effectiveness and clean production of the construction industry resources of Mongolia"** jointly with the National Association on Waste Recycling of Mongolia, Mongolian University of Science and Technology and the Delft University of Technology of Netherlands funded by the European Union and Czech Development Agency.

The project aims to contribute to mitigating the poverty and climate change in Mongolia through supporting the SMEs engaged in the construction industry in introducing resource effectiveness and clean production and consumption to their operations.

The construction industry has been expanding rapidly in recent years, and the demands for all kinds of construction materials (concrete, metal and so on) has been increasing, which has been leading to the increase of demands and supplies of imported goods. Deficiency of research, development, modification, quality control, procedure and standard development in construction industry hinders the improvement of construction waste management and release of construction products.

One of the main findings of the project is to recycle construction waste and make a product.

1.2 SURVEY GOAL

The survey aimed to measure the public perception and awareness on construction waste-based products, determine the product advantages and identify the users, who were interested in such products. The survey measured public and business perception on waste-based products and create a baseline study to evaluate the perception of sustainable practices of waste management in the construction sector and resource efficiency. Moreover, the survey identified and determined the knowledge and attitudes of different groups of consumers who were interested in construction waste-based products. The survey considered the stakeholders from the construction industry by using the Knowledge, Attitudes and Practices (KAP survey) method.

1.3 SURVEY METHODOLOGY

Survey type

Collecting basic data is based on quantitative and qualitative methods.

CAPI

Process of collecting was done correctly by tablet with **CSpro program**. Data collection process would be checked at the same time as the data collection process. The Cspro program is developed to minimise the error of collecting data and function of accumulating data, entering data are at one place, mechanical errors of collecting data are not occurred because of identifying **GPS location** of taking the survey, **recording interviews**, programming logic of questionnaire's questions. The program **satisfies full security** of researches, easy data transfer without delaying by **3G/4G** internet server.

Social research package SPSS 25.0 is used for processing research data.

The sample size

The sample contained 250 citizens in Ulaanbaatar, the construction sector's 50 organisation, 50 factories of construction material. KAP was done.

Table 1 Sample size

Area	Target group	Sample size
Ulaanbaatar	Citizen	250
	Construction sector's organization	50
	Factory of construction material	50
Total		**350**

Table 2 Survey participant citizens, by age and district

SAMPLE		AGE RANGE					
		18-24	25-34	35-44	45-55	More than 55	Total
District	BGD	6	15	10	10	4	45
	BZD	9	19	11	10	6	55
	SHD	8	13	14	11	4	50
	SBD	7	9	12	8	4	40
	HUD	4	12	5	6	3	30
	CHD	3	10	6	7	4	30
	Total	**37**	**78**	**58**	**52**	**25**	**250**

Of total survey respondents, 19% are entrepreneurs, and 14% are employed at governmental and public organizations.

Graphic 1 Survey participant citizen's work status
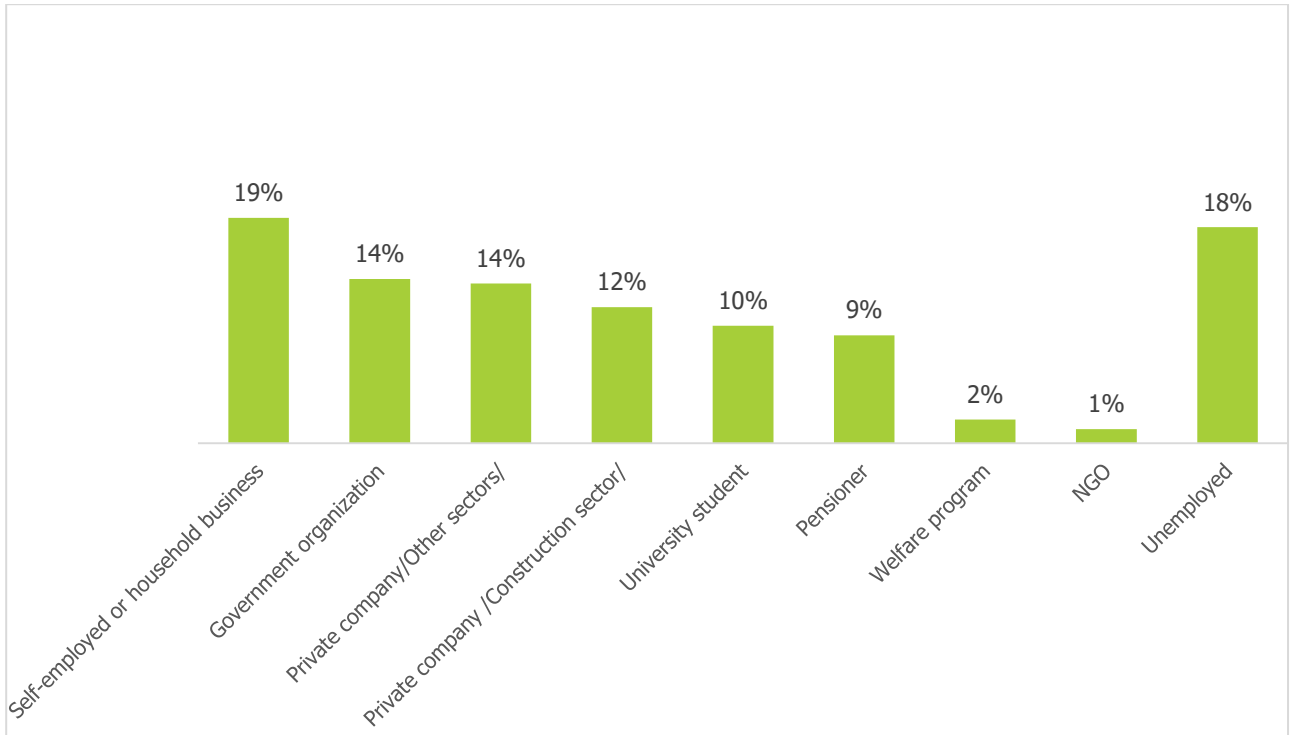
Table 3 Survey participant construction sector SME sample

Number of employees	Total sample
Less than 10 employees	19
11-20 employees	14
21-50 employees	11
More than 51 employees	6

Construction material manufacturers are sampled as follows, and the management level employees of the companies were surveyed.

Graphic 2 Survey participant construction sector SME's employee work status
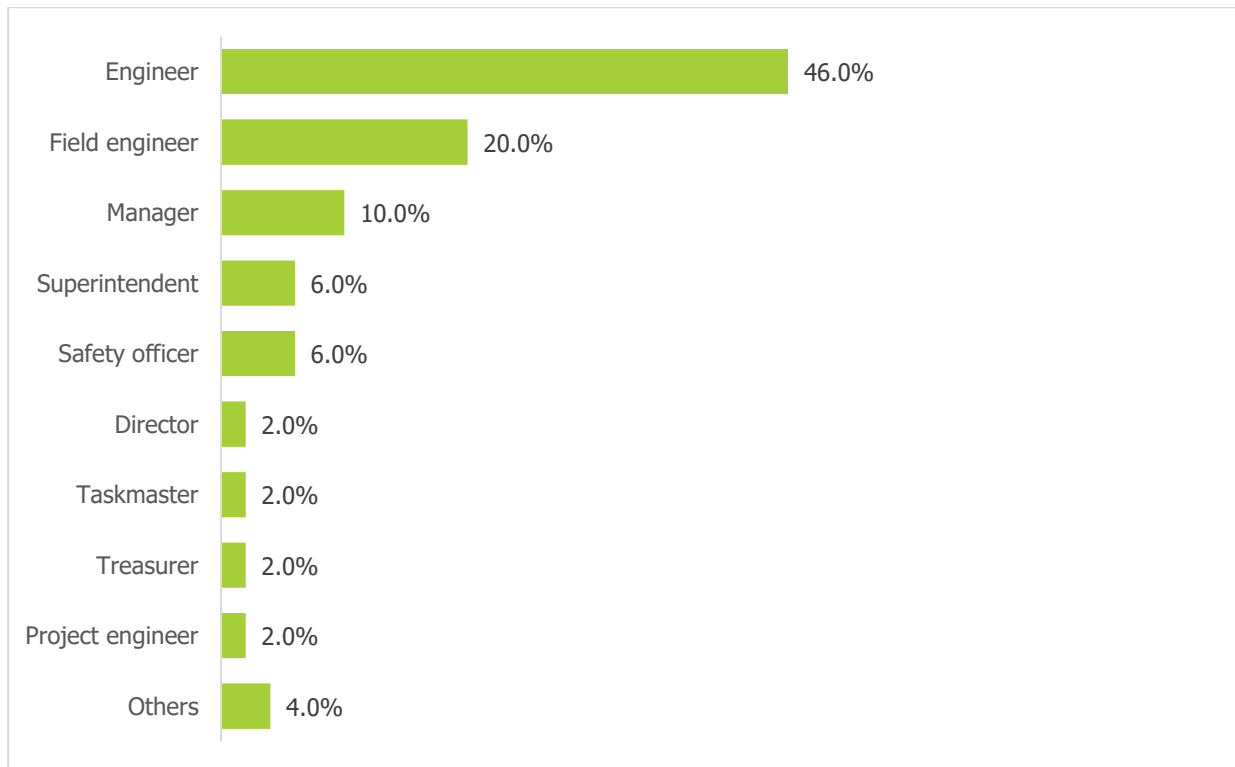
Table 4 Type of survey participant factory of construction material

CONSTRUCTION MATERIAL PRODUCTION TYPE	SAMPLE SIZE
Armature, steel factory	10
Concrete and reinforced concrete factory	11
Concrete batch plant	10
Brick and block production	5
Manufacture of plastic products	5
Other /Insulation material, window, door industry etc./	9

Graphic 3 Survey respondent factory of construction material employee positions
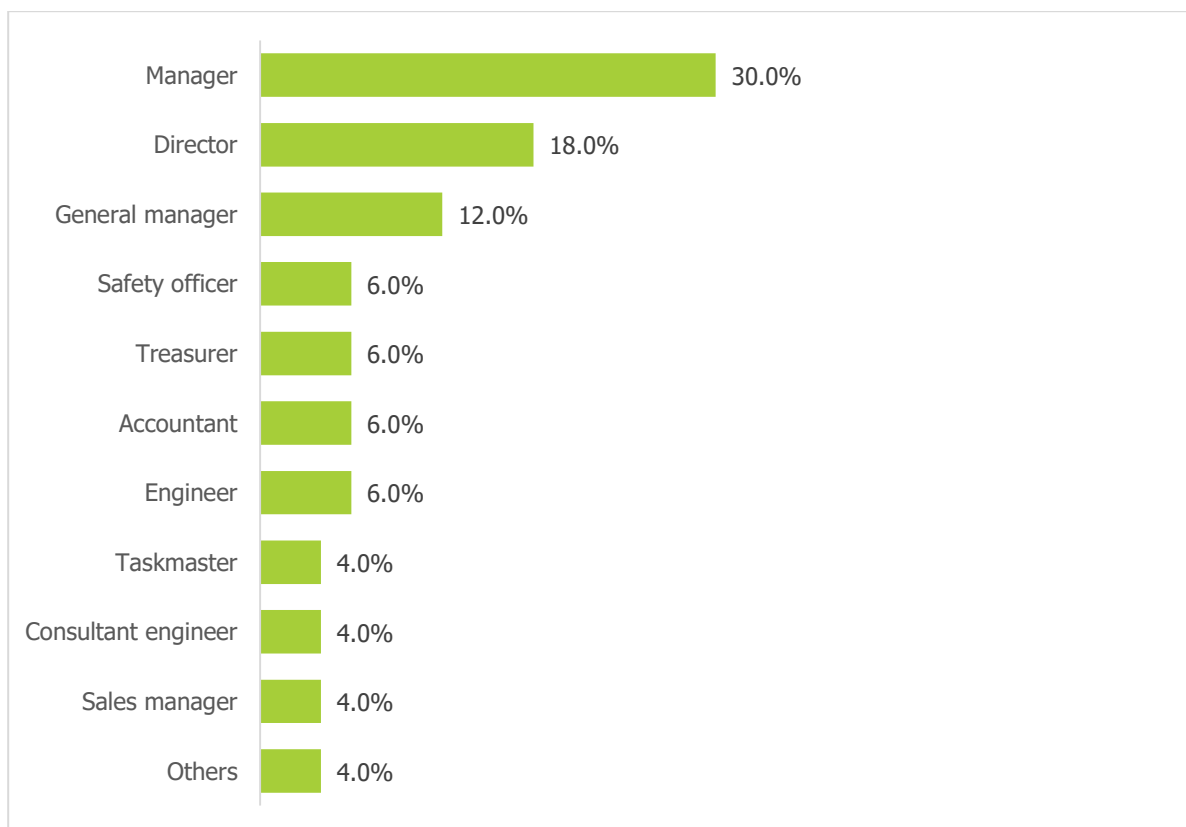
IN-DEPTH INTERVIEW

Of the total, ten in-depth interviews were organized, involving representatives from governmental organizations in the construction sector and representatives from business organizations. Representatives from the governmental organizations in construction sector included officers from the ministry of construction and urban planning and officials from the professional inspection agency. Representatives from SME in construction sector included the construction, project and inspection engineers of the companies.

Table 5 Sole interview sample size

Area	Target group	Sample size
Ulaanbaatar	Representer of the government construction sector	5
	Small and medium enterprises of construction	5
Total		**10**

This method provides the qualitative information, which is unable from the KAP-knowledge, attitude, practice studies, we studied the problem, made qualitative analysis to the results and included to the final survey report. Data collection was conducted according to the special guidelines of the in-depth interview.

TWO. SURVEY RESULT BRIEF

INDICATOR	ANSWER	CITIZEN		SMEs		FACTORY OF CONSTRUCTION MATERIALS	
		NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Q1. Have you heard about the project to support the effectiveness of resources and clean production in the construction industry of Mongolia?	No	214	86%	39	78%	40	80%
	Yes	36	14%	11	22%	10	20%
Q2. How much do you know about the project to support the effectiveness of resources and clean production in the construction industry of Mongolia? Circle an answer?	Don't know	6	17%	0	0%	0	0%
	2	2	6%	1	9%	0	0%
	3	4	11%	4	36%	0	0%
	4	3	8%	1	9%	4	40%
	5	12	33%	1	9%	3	30%
	6	2	6%	2	18%	0	0%
	7	1	3%	0	0%	2	20%
	8	4	11%	1	9%	0	0%
	9	0	0%	0	0%	1	10%
	Know well	2	6%	1	9%	0	0%
Q3.1 Amount of construction waste has been increasing rapidly in recent years.	No	9	4%	1	2%	7	14%
	Yes	241	96%	49	98%	43	86%
Q3.2. Construction waste has a less negative impact on the environment compared to other types of waste.	No	156	62%	12	24%	22	44%
	Yes	94	38%	38	76%	28	56%
Q3.3. Construction waste occupies ¼ of total solid waste.	No	45	18%	10	20%	12	24%
	Yes	205	82%	40	80%	38	76%
Q3.4. Construction waste is highly recyclable.	No	67	27%	14	28%	9	18%
	Yes	183	73%	36	72%	41	82%
Q3.5. Recycling and classification of construction waste are at an unsatisfied level in Mongolia.	No	42	17%	6	12%	5	10%
	Yes	208	83%	44	88%	45	90%
Q3.6. /ask from entities/ There is a bad correlation between the law on waste and standards/regulations on waste management within the construction site.	No	0	0%	15	30%	7	14%
	Yes	0	0%	35	70%	43	86%
Q3.7. Poor enforcement and control of related laws and standards on construction waste.	No	8	3%	6	12%	7	14%
	Yes	242	97%	44	88%	43	86%
Q3.8. It is necessary to inspect thoroughly if entities disposed their construction waste under the standard requirements before putting a building into exploitation.	No	5	2%	3	6%	1	2%
	Yes	245	98%	47	94%	49	98%
Q3.9. It is correct to landfill construction waste.	No	177	71%	35	70%	35	70%
	Yes	73	29%	15	30%	15	30%
Q3.10. There is no plant to recycle construction waste.	No	32	13%	9	18%	8	16%
	Yes	218	87%	41	82%	42	84%
Q3.11. I heard about 3R support or reducing, reusing and recycling waste on the source.	No	201	80%	36	72%	28	56%
	Yes	49	20%	14	28%	22	44%
Q3.12. I know what kind of waste can be reused for construction.	No	114	46%	10	20%	13	26%
	Yes	136	54%	40	80%	37	74%
Q3.13. I know about construction waste recycling companies.	No	221	88%	37	74%	44	88%
	Yes	29	12%	13	26%	6	12%
Q3.14. I confused about construction waste products quality.	No	109	44%	22	44%	30	60%
	Yes	141	56%	28	56%	20	40%

Q4. How often does your company organize works related to recycling construction waste? */legal status on construction waste, opportunities for recycling construction waste, negative impacts of the construction waste to the environment, and so on.*	No	144	95%	44	88%	30
	Yes	7	5%	6	12%	20
Q5. If yes, how actively do you participate in such works?	Never participate	0	0%	0	0%	0
	2	0	0%	0	0%	1
	3	0	0%	0	0%	0
	4	0	0%	1	17%	0
	5	0	0%	0	0%	4
	6	0	0%	0	0%	0
	7	2	29%	2	33%	2
	8	1	14%	0	0%	5
	9	2	29%	1	17%	1
	Participate strongly	2	29%	2	33%	7
Q6.1. It is correct to landfill/bury construction waste	1 – Strongly disagree	128	51%	28	56%	15
	2 – Disagree	54	22%	11	22%	18
	3 – Don't know	11	4%	0	0%	5
	4 – Agree	26	10%	4	8%	7
	5 – Strongly agree	31	12%	7	14%	5
Q6.2. It is necessary to prohibit landfilling the recyclable construction waste	1 – Strongly disagree	8	3%	0	0%	3
	2 – Disagree	10	4%	3	6%	6
	3 – Don't know	4	2%	0	0%	1
	4 – Agree	65	26%	8	16%	22
	5 – Strongly agree	163	65%	39	78%	18
Q6.3. It is necessary to increase reuse and recycling construction waste	1 – Strongly disagree	1	0%	0	0%	1
	2 – Disagree	1	0%	0	0%	1
	3 – Don't know	1	0%	1	2%	0
	4 – Agree	70	28%	5	10%	28
	5 – Strongly agree	177	71%	44	88%	20
Q6.4 It is necessary to increase the number and capacity of waste recycling plants and support them.	1 – Strongly disagree	0	0%	0	0%	0
	2 – Disagree	0	0%	0	0%	4
	3 – Don't know	1	0%	1	2%	1
	4 – Agree	58	23%	3	6%	27
	5 – Strongly agree	191	76%	46	92%	18
Q6.5. Due to the inefficient system on waste disposal in Mongolia, the waste harms the environment and to human health.	1 – Strongly disagree	2	1%	1	2%	2
	2 – Disagree	6	2%	2	4%	2
	3 – Don't know	1	0%	0	0%	1
	4 – Agree	56	22%	5	10%	31
	5 – Strongly agree	185	74%	42	84%	14
Q6.6. It is necessary to increase public control to construction waste management.	1 – Strongly disagree	0	0%	0	0%	1
	2 – Disagree	3	1%	0	0%	1

3 – Don't know	0	0%	0	0%	2	
4 – Agree	64	26%	3	6%	31	
5 – Strongly agree	183	73%	47	94%	15	

Question	Response						
Q6.7. It is necessary to strengthen the laws and regulation on construction waste	1 – Strongly disagree	0	0%	0	0%	0	0%
	2 – Disagree	4	2%	2	4%	1	2%
	3 – Don't know	4	2%	0	0%	4	8%
	4 – Agree	57	23%	5	10%	30	60%
	5 – Strongly agree	185	74%	43	86%	15	30%
Q6.8. It is necessary to improve the enforcement of the laws and regulation on construction waste	1 – Strongly disagree	1	0%	0	0%	0	0%
	2 – Disagree	2	1%	0	0%	0	0%
	3 – Don't know	1	0%	1	2%	1	2%
	4 – Agree	57	23%	6	12%	34	68%
	5 – Strongly agree	189	76%	43	86%	15	30%
Q6.9. Construction companies do not have enough knowledge and information about the negative impacts of construction waste on the environment.	1 – Strongly disagree	5	2%	0	0%	0	0%
	2 – Disagree	7	3%	4	8%	4	8%
	3 – Don't know	11	4%	0	0%	3	6%
	4 – Agree	72	29%	12	24%	28	56%
	5 – Strongly agree	155	62%	34	68%	15	30%
Q6.10. It is necessary to improve the correlation between construction companies, subcontractors and recycling companies.	1 – Strongly disagree	0	0%	0	0%	1	2%
	2 – Disagree	1	0%	0	0%	1	2%
	3 – Don't know	2	1%	0	0%	2	4%
	4 – Agree	58	23%	9	18%	26	52%
	5 – Strongly agree	189	76%	41	82%	20	40%
Q6.11. There is enough recycling factory of construction waste in Mongolia.	1 – Strongly disagree	134	54%	23	46%	23	46%
	2 – Disagree	75	30%	22	44%	15	30%
	3 – Don't know	18	7%	1	2%	4	8%
	4 – Agree	11	4%	3	6%	5	10%
	5 – Strongly agree	12	5%	1	2%	3	6%
Q6.12. Increasing solid construction waste landfill payment will be decreasing construction waste landfill.	1 – Strongly disagree	15	6%	4	8%	7	14%
	2 – Disagree	29	12%	13	26%	9	18%
	3 – Don't know	14	6%	3	6%	4	8%
	4 – Agree	72	29%	17	34%	19	38%
	5 – Strongly agree	120	48%	13	26%	11	22%
Q6.13. The recycled construction material quality is similar to the normal material.	1 – Strongly disagree	38	15%	2	4%	3	6%
	2 – Disagree	56	22%	17	34%	15	30%
	3 – Don't know	46	18%	4	8%	12	24%
	4 – Agree	66	26%	17	34%	13	26%

	5 – Strongly agree	44	18%	10	20%	7	14%

Q7.1. I never throw waste openly anywhere.	1 – Never	53	21%	2	4%	24	48%
	2 – Rarely	10	4%	3	6%	2	4%
	3 – Sometimes	28	11%	6	12%	1	2%
	4 – Usually	13	5%	3	6%	2	4%
	5 - Always	146	58%	36	72%	21	42%
Q7.2. I try to classify my household waste.	1 – Never	79	32%	16	32%	15	30%
	2 – Rarely	30	12%	5	10%	1	2%
	3 – Sometimes	45	18%	8	16%	12	24%
	4 – Usually	43	17%	15	30%	9	18%
	5 - Always	53	21%	6	12%	13	26%
Q7.3. **/ask from entity/** Keep and reuse recyclable construction waste.	1 – Never	0	0%	50	100%	14	28%
	2 – Rarely	0	0%	0	0%	4	8%
	3 – Sometimes	0	0%	0	0%	4	8%
	4 – Usually	0	0%	0	0%	5	10%
	5 - Always	0	0%	0	0%	23	46%
Q7.4. **/ ask from entity /** Have financial problems in classifying and recycling construction waste.	1 – Never	0	0%	17	34%	15	30%
	2 – Rarely	0	0%	4	8%	1	2%
	3 – Sometimes	0	0%	10	20%	12	24%
	4 – Usually	0	0%	2	4%	8	16%
	5 - Always	0	0%	17	34%	14	28%
Q7.5. **/ ask from entity /** Classify construction waste during unloading.	1 – Never	0	0%	26	52%	18	36%
	2 – Rarely	0	0%	3	6%	7	14%
	3 – Sometimes	0	0%	5	10%	5	10%
	4 – Usually	0	0%	7	14%	5	10%
	5 - Always	0	0%	9	18%	15	30%
Q7.6. **/ ask from entity /** Implement effective construction waste management in our activities.	1 – Never	0	0%	19	38%	17	34%
	2 – Rarely	0	0%	5	10%	2	4%
	3 – Sometimes	0	0%	6	12%	8	16%
	4 – Usually	0	0%	11	22%	7	14%
	5 - Always	0	0%	9	18%	16	32%

THREE. SURVEY RESULT

3.1 KNOWLEDGE AND INFORMATION

14% of all respondents and 22% of the construction companies heard about the project on resource efficiency and clean production of the construction sector of Mongolia. Moreover, 20% of construction material manufacturers hear about this project before.

The respondents, who were aware of the project, were asked to evaluate their knowledge about this project with 1-10 points. Here, the construction material manufacturers' evaluation was the highest (5.4 points). The knowledge of the citizens is 4.6 or lower than the knowledge of the construction material manufacturers by 0.8 points.

Graphic 4 Have you heard of the project to support the effectiveness of resources and clean production in the construction industry of Mongolia? /By citizen, type of private entity/

Citizens — 4.6 — [VALUE]% — No / Yes

4.8

SMEs of construction sector — 5.4 — [VALUE].0% — No / Тийм

Factory of construction materials — [VALUE].0% — No / Тийм
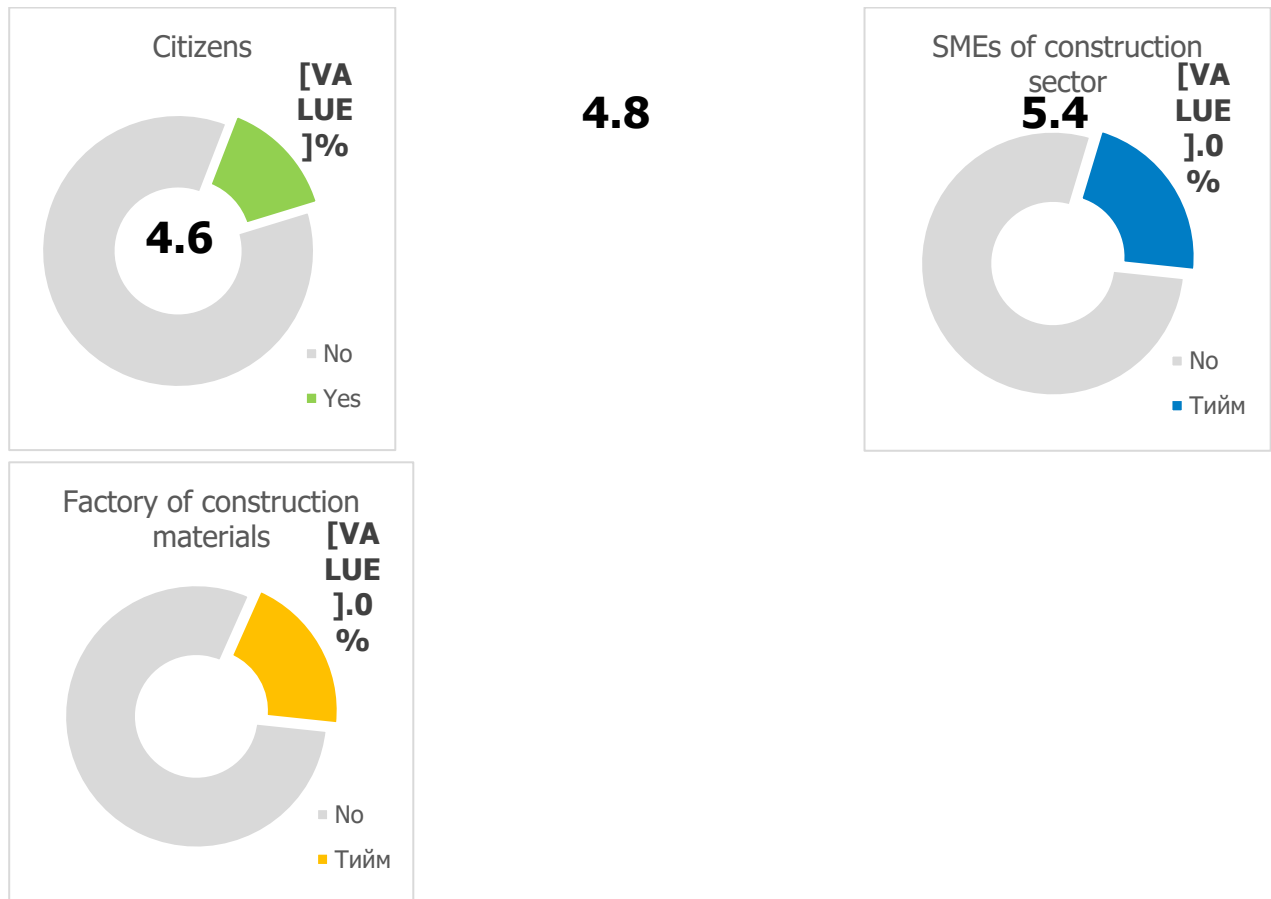
The citizens and entities, who heard about the project on resource efficiency and clean production of the construction sector of Mongolia, evaluated their knowledge with score 1-10, where one does not know, and ten know well.

83% of the citizens are informed about the project resource efficiency and clean production of the construction sector of Mongolia. 9% of the construction SMEs know well.

Graphic 5 How much do you know about the project to support the effectiveness of resources and clean production in the construction industry of Mongolia? /By citizen, type of private entity/

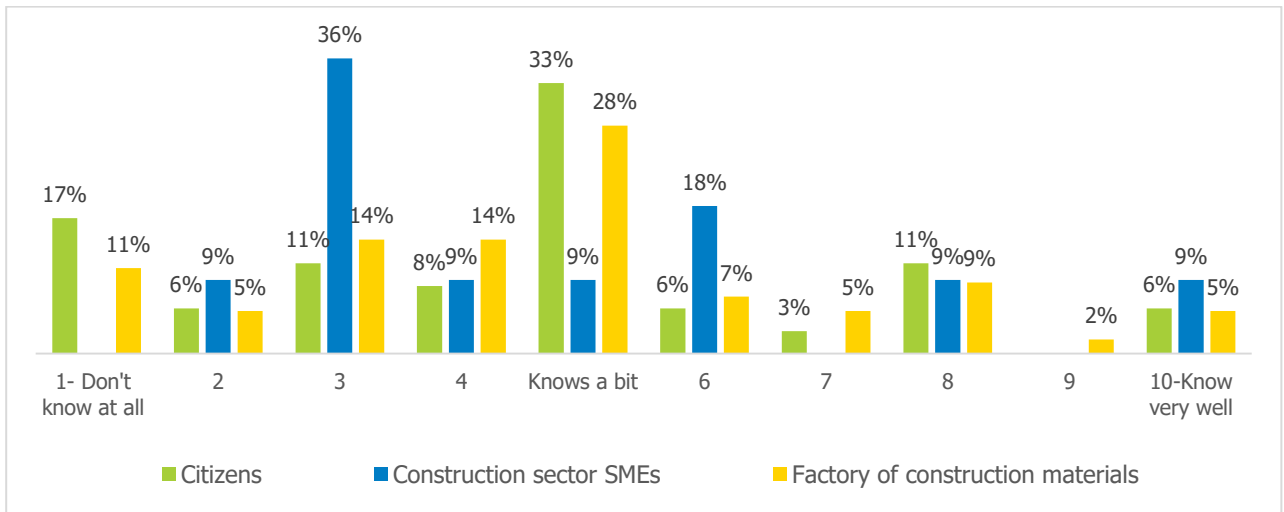**From qualitative study findings 1:** *Whether heard of The project to support the effectiveness of resources and clean production in the construction industry of Mongolia*

"*We have a little knowledge about this project.*".
A representative from construction SME

"*I have never heard about this project. However, I heard about a plant on recycling on TV.*"
A representative from construction SME

"*I heard about this project. I have read several handouts. They conducted studies related to construction waste.*"
A representative of governmental organization in the construction sector

96% of citizens agree that construction waste has increased significantly recently.

38% of the citizens agree that construction waste has less negative impacts, but 76% of the construction SMEs agree with it, which is two times higher than the citizens.

The companies have poor knowledge about the companies which recycle construction waste and consider that such companies/plants are insufficient in our country.

Over 80% of the citizens and entities agree that classifying and recycling construction waste is insufficient in Mongolia as well as related laws and regulations have bad coherence and enforcement.

Graphic 6 Attitude about construction waste /By citizen, type of private entity/

Statement	Citizen	Construction sector SMEs	Factory of construction material
Amount of construction waste has been increasing rapidly in recent years.	96.4%	98.0%	86.0%
Construction waste occupies ¼ of total solid waste.	82.0%	80.0%	76.0%
Construction waste has less negative impact to the environment compared to other types of waste.	37.6%	76.0%	56.0%
Construction waste is highly recyclable.	73.2%	72.0%	82.0%
I know what kind of waste can be reused for construction.	54.4%	80.0%	74.0%
There is no plant to recycle construction waste.	87.2%	82.0%	84.0%
I know about construction waste recycle companies	11.6%	26.0%	12.0%
Recycling and classification of construction waste is at unsatisfied level in Mongolia.	83.2%	88.0%	90.0%
It is correct to landfill construction waste.	29.2%	30.0%	30.0%
I confused about construction waste products quality.	56.4%	56.0%	40.0%
I heard about 3R support or reducing, reusing and recycling waste on the source.	19.6%	28.0%	44.0%
It is necessary to inspect thoroughly if entities disposed their construction waste under the standard requirements before putting a building into exploitation.	98.0%	94.0%	98.0%
There is a bad correlation between the law on waste and standards/regulations on waste management within construction site.		70.0%	86.0%
Poor enforcement and control of related laws and standards on construction waste.	96.8%	88.0%	86.0%

Legend: ■ Citizen ■ Construction sector SMEs ■ Factory of construction material

IN-DEPTH INTERVIEW FINDINGS:

From qualitative study findings 2: *Attitudes on the impact of the construction waste on the environment*

"*Impact of the construction waste to the environment has relatively **fewer consequences compared to food, plastic bags and other waste**. Some wastes from old buildings have much consequence. The new buildings do not have harmful wastes*".

A representative from construction SME

"*There are certain negative impacts and dispose of the Tsagaan Davaa dumpsite. I think that except the smell of paints, other materials **have less negative impacts to humans and to the environment**. It is less harmful than hospital waste and same as other household waste. However, household wastes smell, spoil and have many other problems and construction wastes do not have such problems.*"

A representative from construction SME

"***Of course, it has negative impacts. This waste will not be eliminated in nature by itself**. Paper exists for 50 years and juice bottles for 200 years. Likewise, construction waste is also everlasting. Therefore, it is correct to develop a policy on recycling such waste.*

A representative from governmental organization in construction

"***It does not have chemical harms compared to other waste and plastic.** All raw materials are used in nature. Therefore, they absorb to nature.*"

Representative from governmental organization in construction

From qualitative study findings 3:: *In your opinion, how is the work of construction waste recycling going?*

"*We classify waste like wood, metal and concrete; household waste is disposed of by a public maintenance company. Wood is used for fuel, the armature is disposed as scrap, and concrete is disposed to the central dumpsite. First, we use reusable products. However, **we consider that there is less opportunity to reuse, recycle the products.***"

A representative from construction SME

"***Construction waste is not classified at all**. Sometimes, we classify foam, window materials, armature, stone and clay waste, but another waste is not classified.*"

A representative from construction SME

"*It is not common to classify construction waste from the dumpsite in Mongolia. For example: **Sometimes the waste from the construction site is disposed of by putting into one trash bin**.*"

Representative from governmental organization in construction

"*Not implemented, very bad. Construction waste is disposed of uncontrolled. **Construction companies save transportation costs and throw everywhere.** Recycling work is very ineffective.*"

Representative from governmental organization in construction

***Recycling construction waste is not enough at all**. Although there is a good policy, all works are ineffective because there is no control.*

Representative from governmental organization in construction

From qualitative study findings 4: *Knowledge and practice on construction waste-based products*

"I do not know well because I have not to use the products made by recycled construction waste. **If they follow all standards and quality and cheaper than the original, I will choose the recycled products."**

A representative from construction SME

I have never used recycled products in our activities."

A representative from construction SME

"Generally, no products are made from construction waste. Some waste is used to flatten slopes and covered with soil, but no construction waste is used.
I think the recycled products in Mongolia do not meet the quality standards and requirements. If it is proved that they meet the requirements, I will buy them.
A representative from construction SME

From qualitative study findings 5: *Difficulties in disposing and classifying construction waste*

"**It is complicated to classify construction waste**. Construction waste includes clay, piles, stone, concrete and packages, and so on. Some are a reusable waste, but the household waste is just disposed of directly because there are no plants to classify and recycle the waste. Solid waste is used for filling."

A representative from construction SME

"**As for the problems, waste transporting needs heavy trucks and special equipment.** A person cannot load such waste alone but needs a bucket of special equipment. This process is very expensive. Also, additional costs are needed at the dumpsite. **Therefore, construction companies pay a private driver to dispose of the waste**. This problem can be decided only by legal regulations. Otherwise, it would continue this way."

A representative from construction SME

"The professional agency of the municipality rarely conducts inspections related to the site organization in Ulaanbaatar city. I think the shortage of human resources is the problem, too. Sometimes inspections are made when the construction is almost finished. Moreover, the public service of the capital city does nothing inputting control. **Without control, the problem of classification cannot be solved.**

Representative from governmental organization in construction

From qualitative study findings 6: *About plants on recycling construction waste*

"**Plants on recycling construction waste is very insufficient in Mongolia**. *Importing a plant is very expensive, less waste is produced compared to other countries, and the sales of the products is very bad.*"

A representative from construction SME

"**I do not have information about the entities which recycle construction waste**. *It is difficult to classify the construction waste by ourselves.*

A representative from construction SME

From qualitative study findings 7: *Laws and regulations related to the construction waste*

"**I do not have enough information about the laws and regulations related to construction waste.**"

A representative from construction SME

"*I dispose of waste at the designated site.* **I do not have information about the related regulations.**"

A representative from construction SME

"**I think if the entities follow certain regulation on how to classify construction waste and connect them with the economy to implement it, in such case the regulation is likely to be followed.** *Waste is produced when a building is dismantled, and when a building is constructed, and if the plant classifies it before transporting to the dumpsite, it would have results.*"

**Representative from governmental organization in construction**

"**The law on construction is followed, but there is no certain regulation about the waste.** *However, we do have certain regulations, instructions and methodologies for construction assembling work. The works are executed accordingly.*"

Representative from governmental organization in construction

3.2 ATTITUDE AND HABIT

12% of the construction SMEs somehow implemented works related to the construction waste recycling and 40% of the construction material manufacturers somehow implemented works related to the construction waste recycling.

Graphic 7 Whether training on reusing/recycling construction waste had organized /by type of entity/
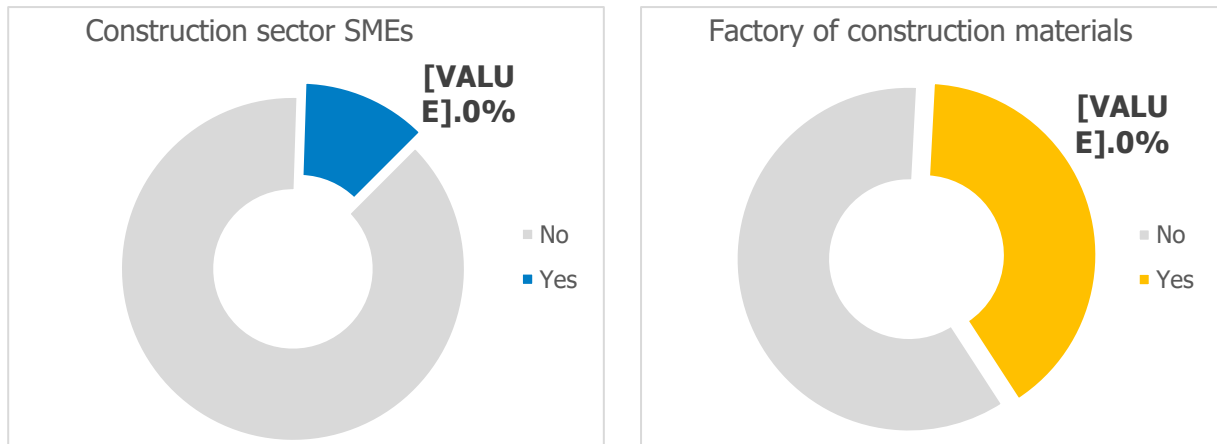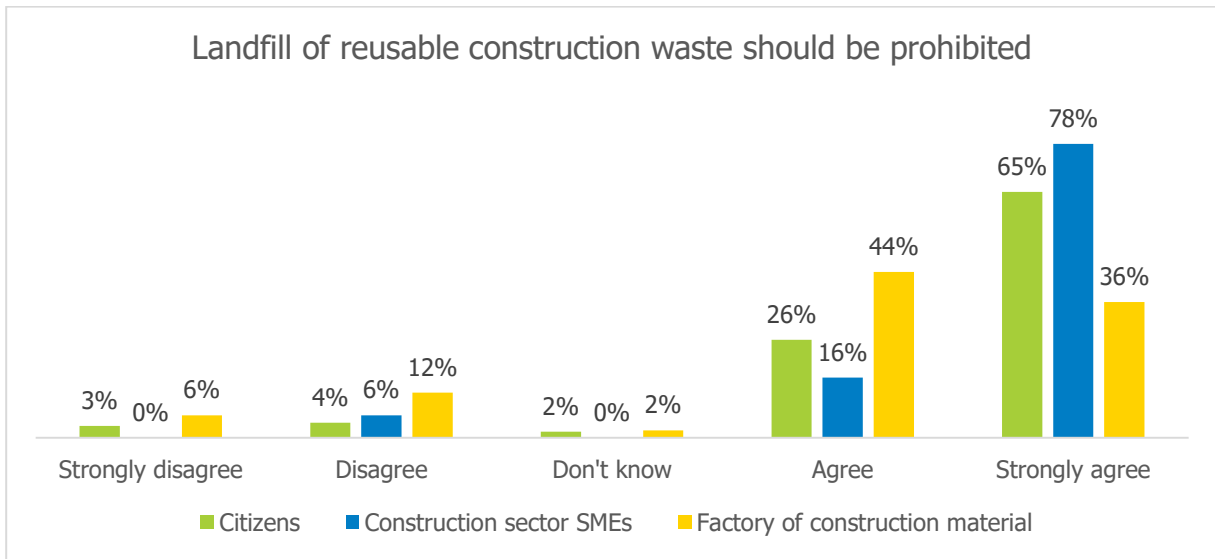

73% of the citizens think that burying (landfilling) the construction waste is wrong; 78 % of construction SMEs and 66% of construction material manufacturers consider it wrong.

Graphic 8 Attitude on the landfill of construction waste /By citizen, type of private entity/
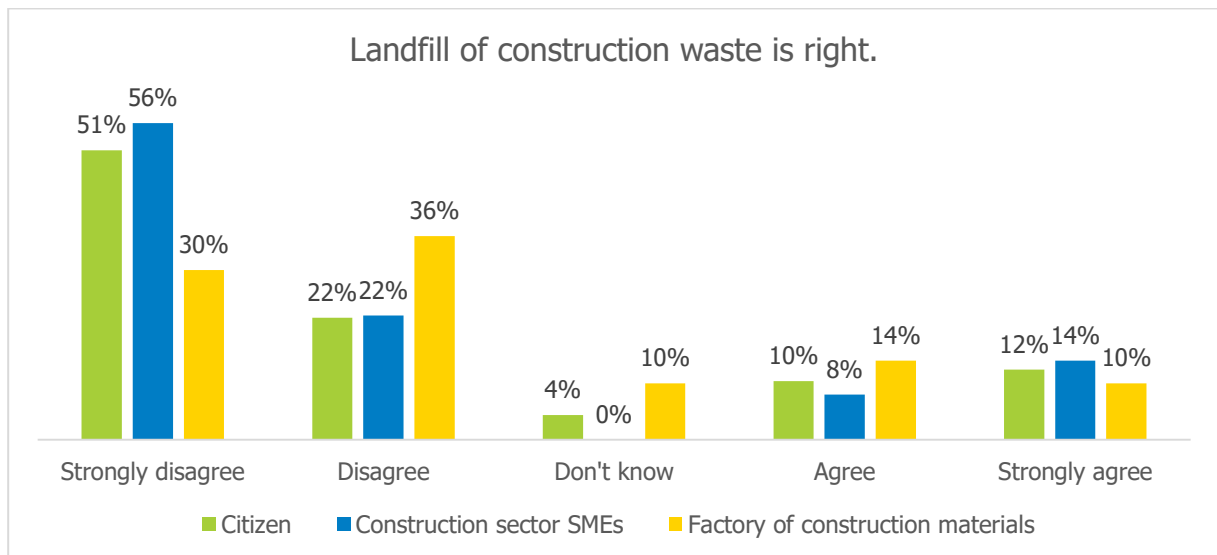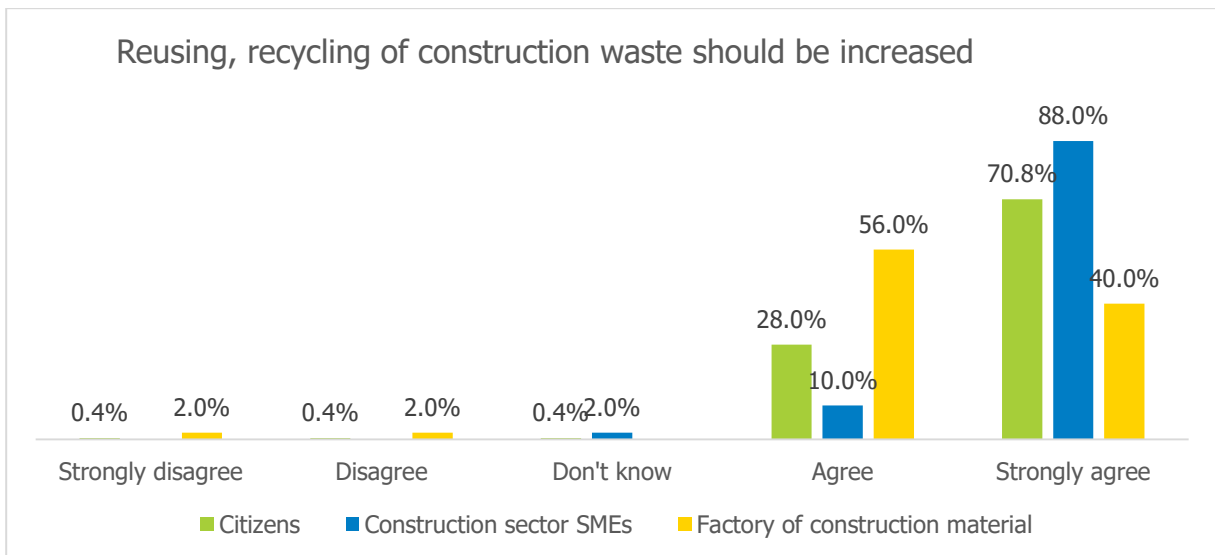

Over 80% of the citizens and entities agree that landfilling reusable construction waste is wrong.

Graphic 9 Landfill of reusable construction waste should be prohibited /By citizen, type of private entity/

Landfill of reusable construction waste should be prohibited

(Citizens, Construction sector SMEs, Factory of construction material)

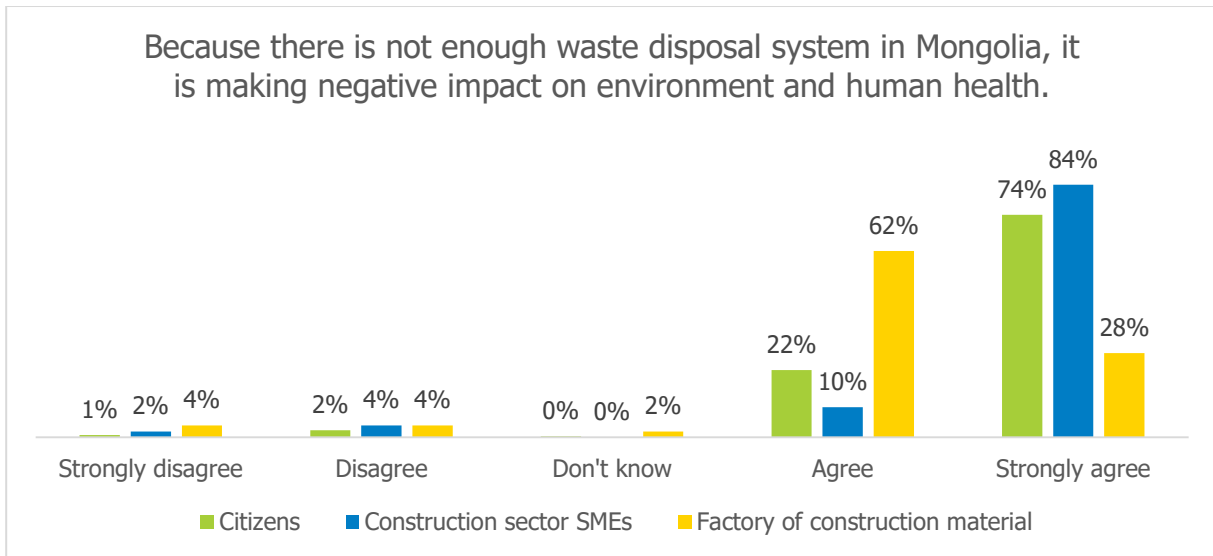|	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Citizens	3%	4%	2%	26%	65%
Construction sector SMEs	0%	6%	0%	16%	78%
Factory of construction material	6%	12%	2%	44%	36%

According to 99% of the citizens, it is necessary to increase reuse and recycle of the construction waste.

Graphic 10 Necessity on increasing reuse, recycling of construction waste /By citizen, type of private entity/

Reusing, recycling of construction waste should be increased

(Citizens, Construction sector SMEs, Factory of construction material)

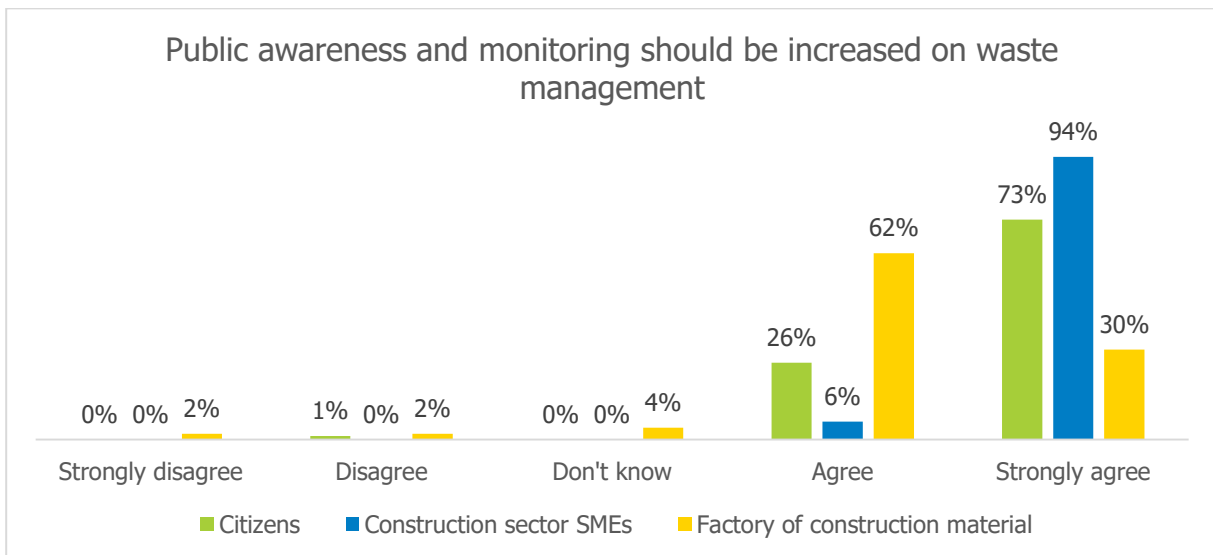|	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Citizens	0.4%	0.4%	0.4%	28.0%	70.8%
Construction sector SMEs			2.0%	10.0%	88.0%
Factory of construction material	2.0%	2.0%	2.0%	56.0%	40.0%

84% of all respondent entities strongly agree that waste causes negative impacts on the environment and human health because of the inefficient system of waste disposal in Mongolia.

Graphic 11 Attitude about a negative impact on the environment and human health from waste because there is not enough waste disposal system in Mongolia /By citizen, type of private entity/
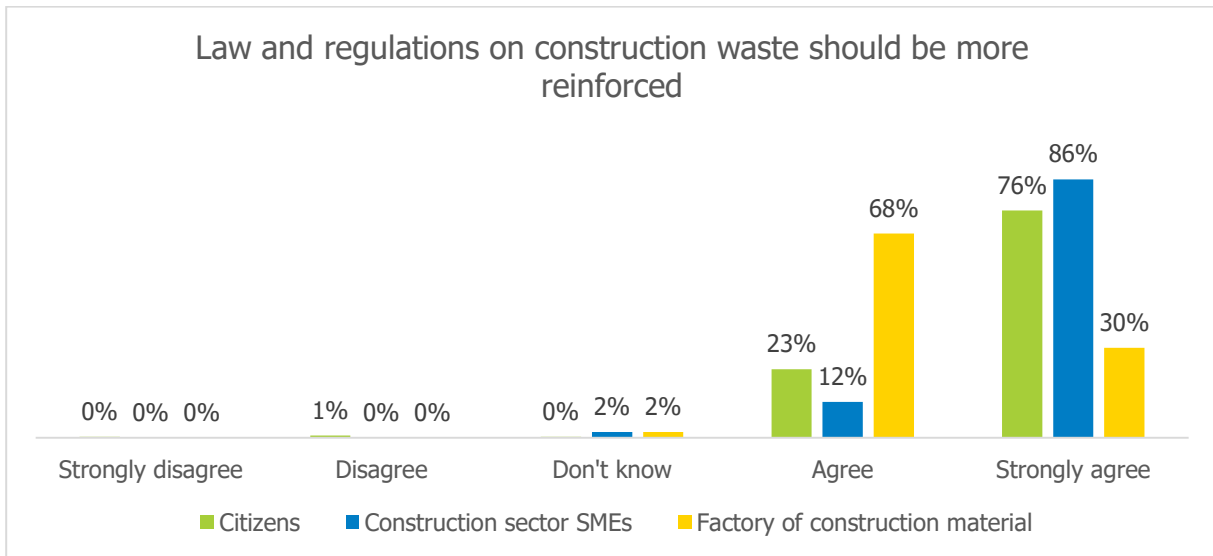
Because there is not enough waste disposal system in Mongolia, it is making negative impact on environment and human health.

	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Citizens	1%	2%	0%	22%	74%
Construction sector SMEs	2%	4%	0%	10%	84%
Factory of construction material	4%	4%	2%	62%	28%

100% of the construction SMEs agree that it is necessary to increase public control to construction waste management.

Graphic 12 Necessity to increase public attention on waste management /By citizen, type of private entity/

Public awareness and monitoring should be increased on waste management

|	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Citizens	0%	1%	0%	26%	73%
Construction sector SMEs	0%	0%	0%	6%	94%
Factory of construction material	2%	2%	4%	62%	30%

99% of the citizens and 98% of the construction SMEs agree that it is necessary to improve the enforcement and control of the laws and regulations related to the construction waste.

Graphic 13 Empowerment and reinforcement of waste disposal law and regulations/By citizen, type of private entity/

Law and regulations on construction waste should be more reinforced

- Citizens
- Construction sector SMEs
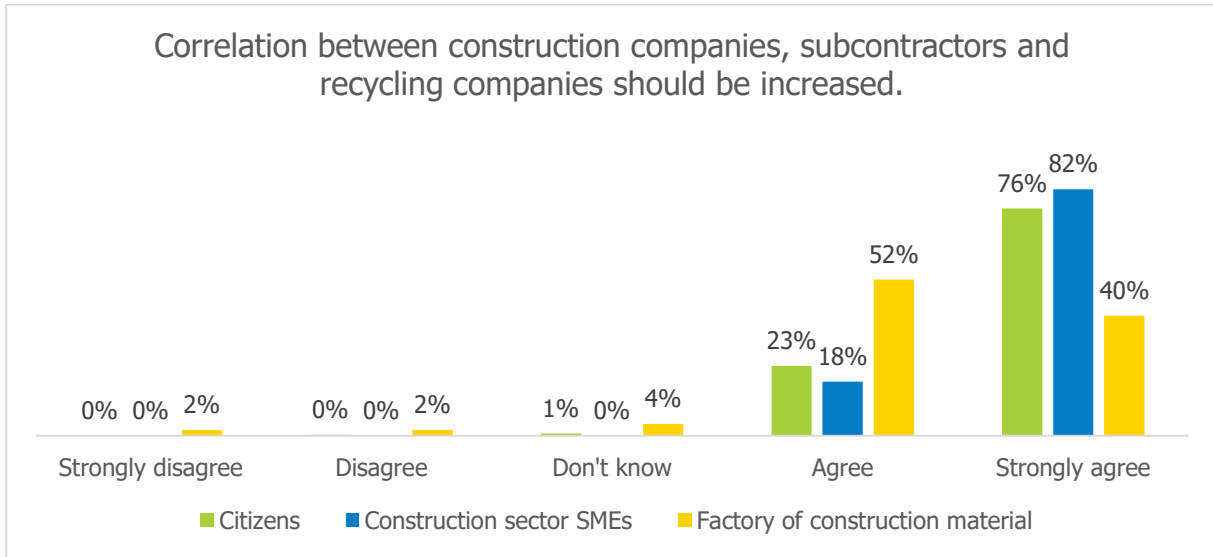- Factory of construction material

The citizens, construction SMEs and construction material manufacturers have insufficient knowledge and information about the negative impacts of the construction waste on the environment.

Graphic 14 Construction sector private entities have insufficient knowledge and information about construction waste negative environment /By citizen, type of private entity/

Construction sector private entities have insufficient knowledge and information about construction waste negative environment

- Citizens
- Construction sector SMEs
- Factory of construction material
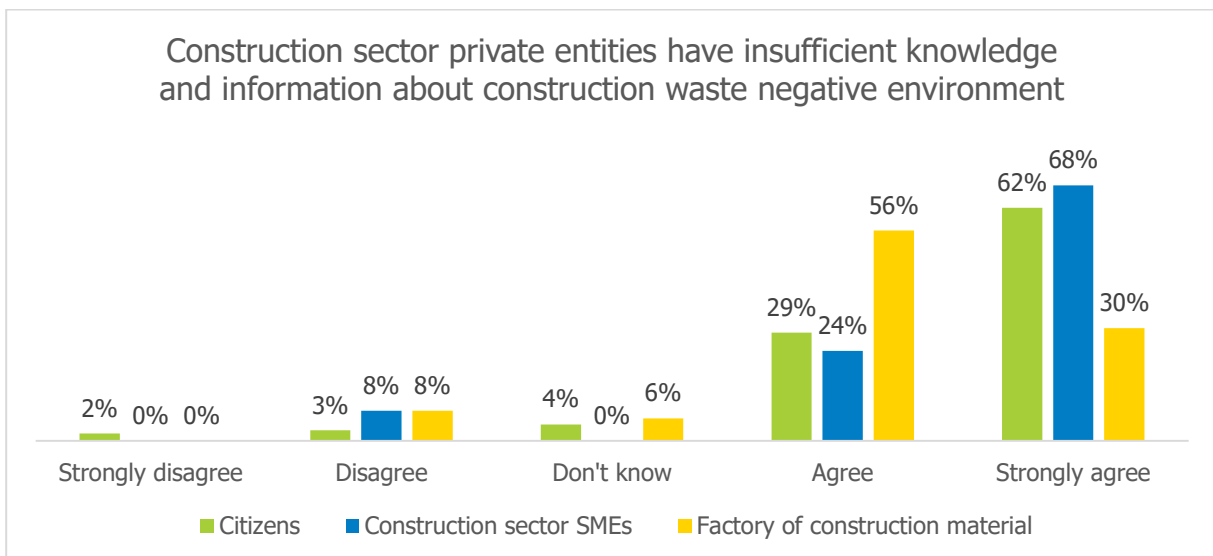
Over 90% of the citizens and entities agree that it is necessary to improve the coherence of the construction companies, subcontractors and recycling companies, which shows that there are a very insufficient coherence between the construction companies, subcontractors and recycling companies.

Graphic 15 Correlation between construction companies, subcontractors and recycling companies should be increased /By citizen, type of private entity/


Plants/entities on recycling construction waste are very insufficient in Mongolia.

Graphic 16 Agreement level of enough recycling factory of construction waste /By citizen, type of private entity/
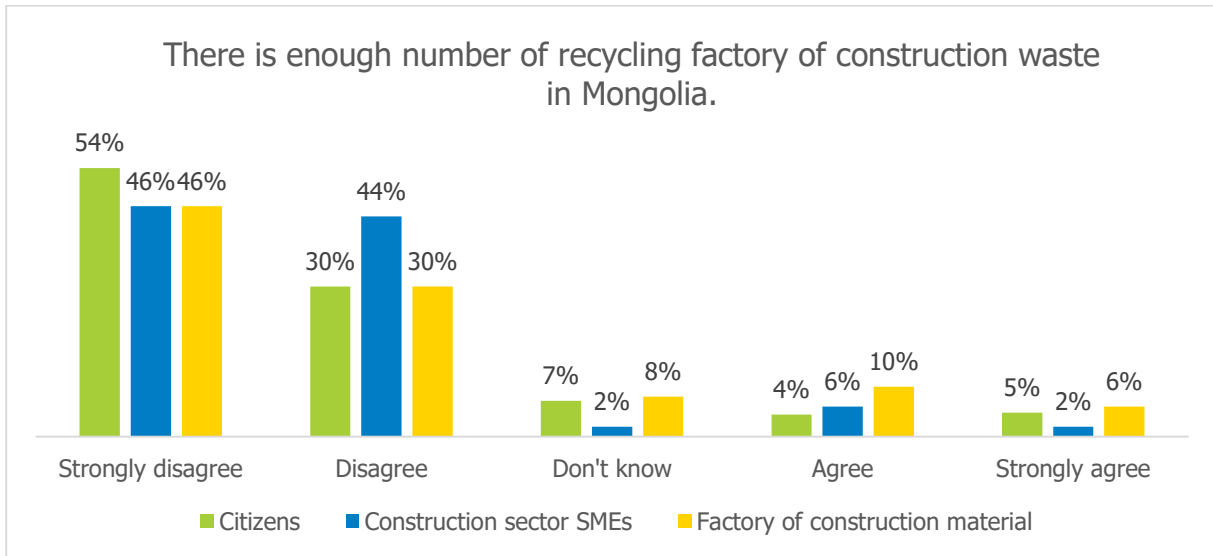

77% of the citizens agree that increasing the taxes for landfilling solid construction waste would reduce landfilling construction waste, but 34% of the construction SMEs disagree.

Graphic 17 Agreement level on Increasing solid construction waste landfill payment will be decreasing construction waste landfill /By citizen, type of private entity/

Increasing solid construction waste landfill payment will be decreasing construction waste landfill
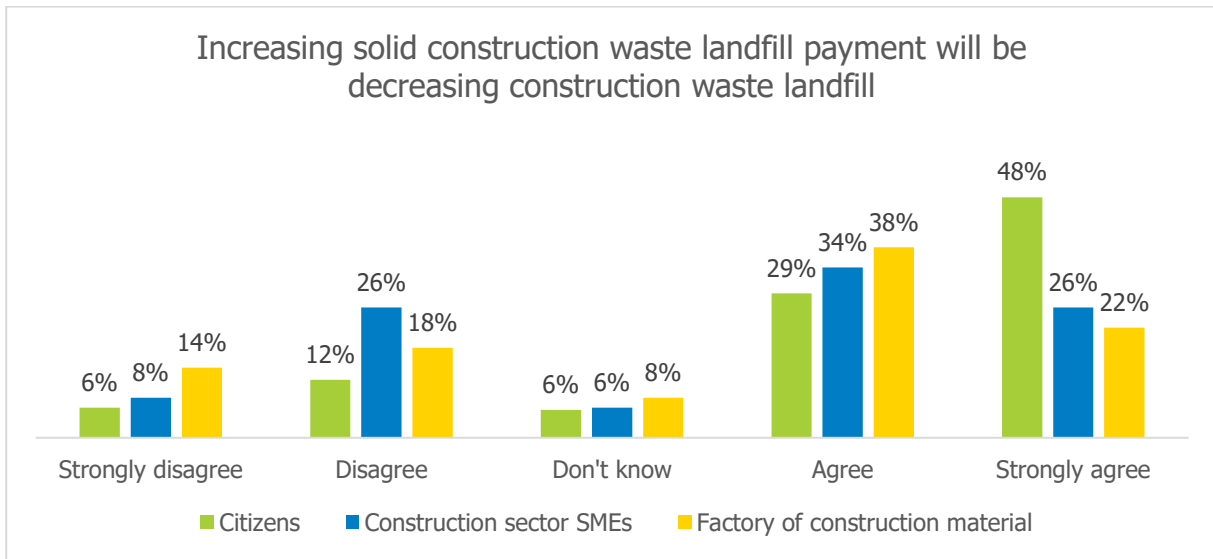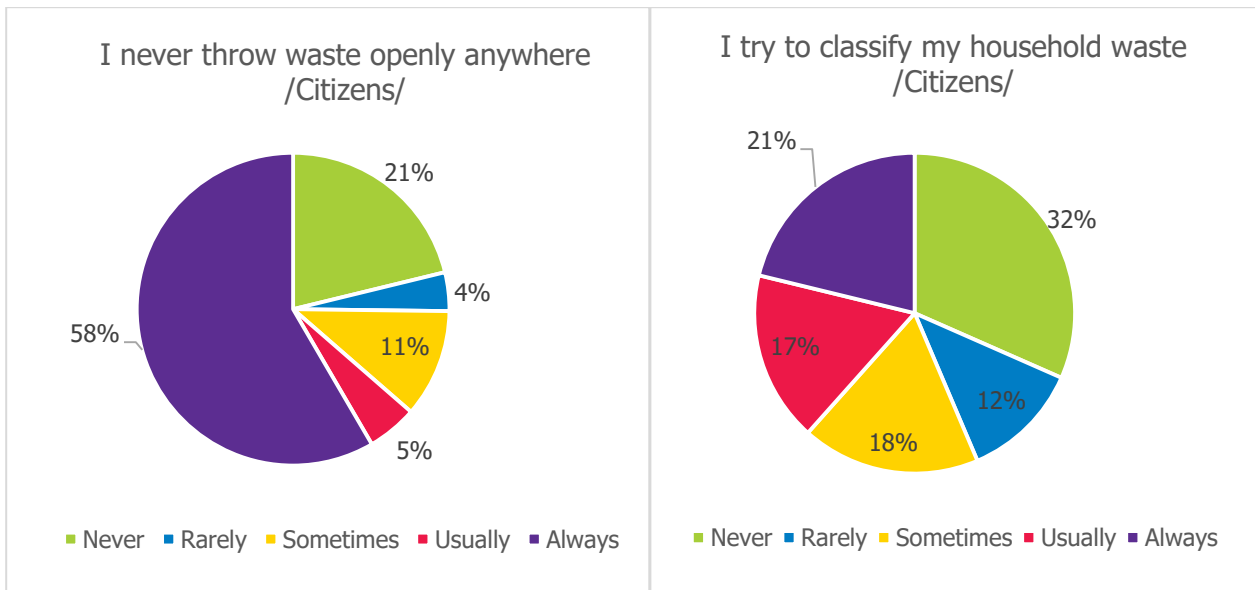
40% of construction SMEs and 54% of the construction material manufacturers consider that the quality of recycled construction materials is the same as the quality of non-recycled construction materials.

Graphic 18 Agreement level on 'The recycled construction material quality is similar to the normal material' /By citizen, type of private entity/
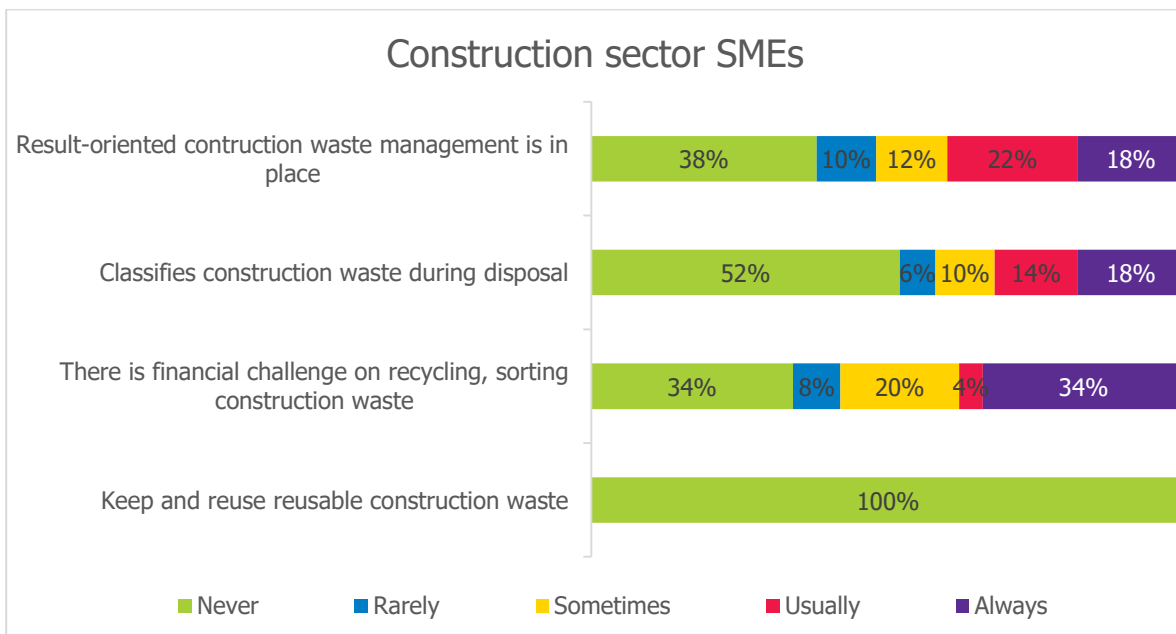

The recycled construction material quality is similar to the normal material.
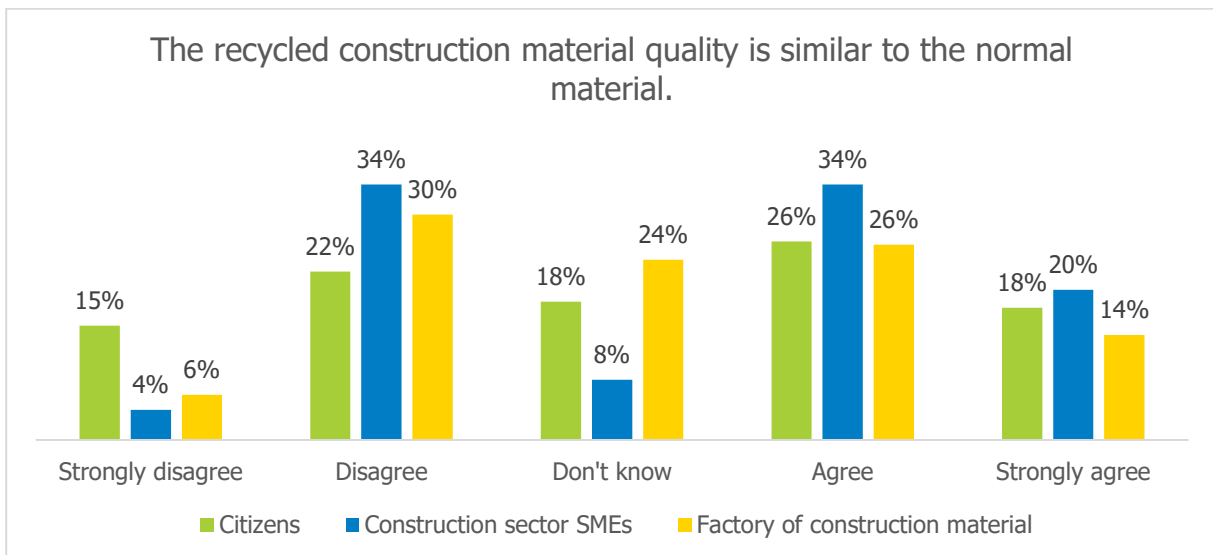
58% of the respondent citizens do not throw waste directly. 21% of citizens always try to classify household waste.

Graphic 19 Citizen's attitude

I never throw waste openly anywhere /Citizens/

- 21%
- 4%
- 11%
- 5%
- 58%

Legend: Never ■ Rarely ■ Sometimes ■ Usually ■ Always

I try to classify my household waste /Citizens/

- 21%
- 32%
- 12%
- 18%
- 17%

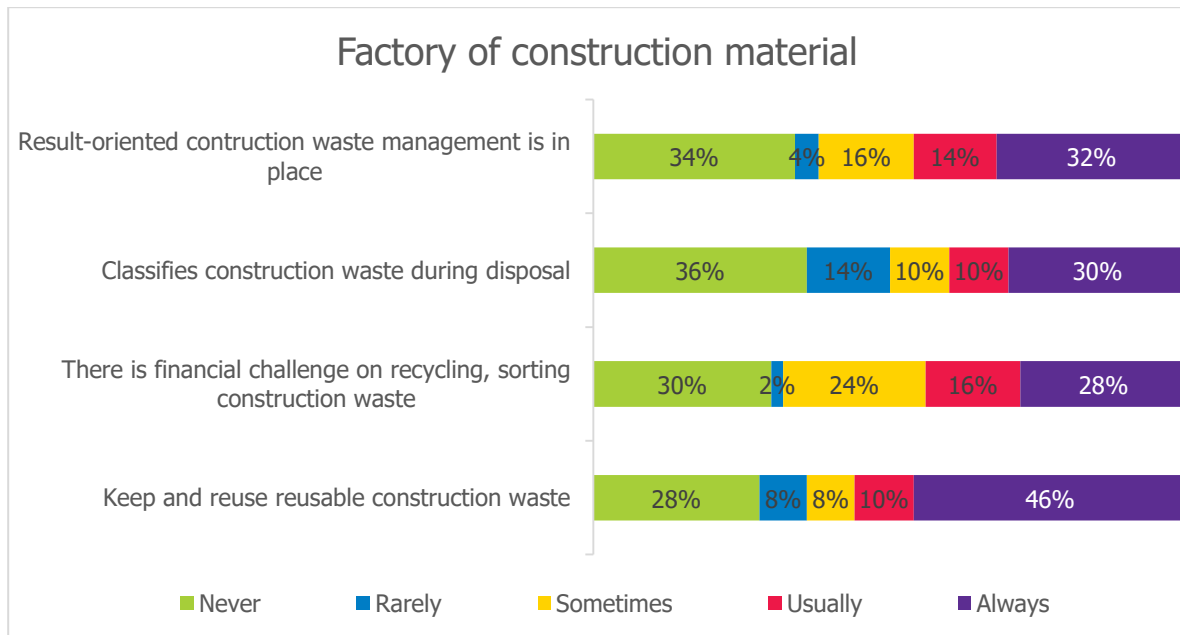Legend: Never ■ Rarely ■ Sometimes ■ Usually ■ Always

48% of the construction SMEs do not implement effective construction waste management in their activities, and 58% of the entities do not classify the waste, produced during building dismantling. No entity stores reusable construction waste and reuses them afterwards.

Graphic 20 Construction sector SMEs' attitude towards construction waste

Construction sector SMEs

	Never	Rarely	Sometimes	Usually	Always
Result-oriented contruction waste management is in place	38%	10%	12%	22%	18%
Classifies construction waste during disposal	52%	6%	10%	14%	18%
There is financial challenge on recycling, sorting construction waste	34%	8%	20%	4%	34%
Keep and reuse reusable construction waste	100%				

46% of the construction material manufacturers implement effective construction waste management in their activities. 68% of all the construction material manufacturers face financial problems in recycling and classifying construction waste. 50% of the entities store and reuse the reusable construction waste.

Graphic 21 Factory of construction material, attitude towards construction waste
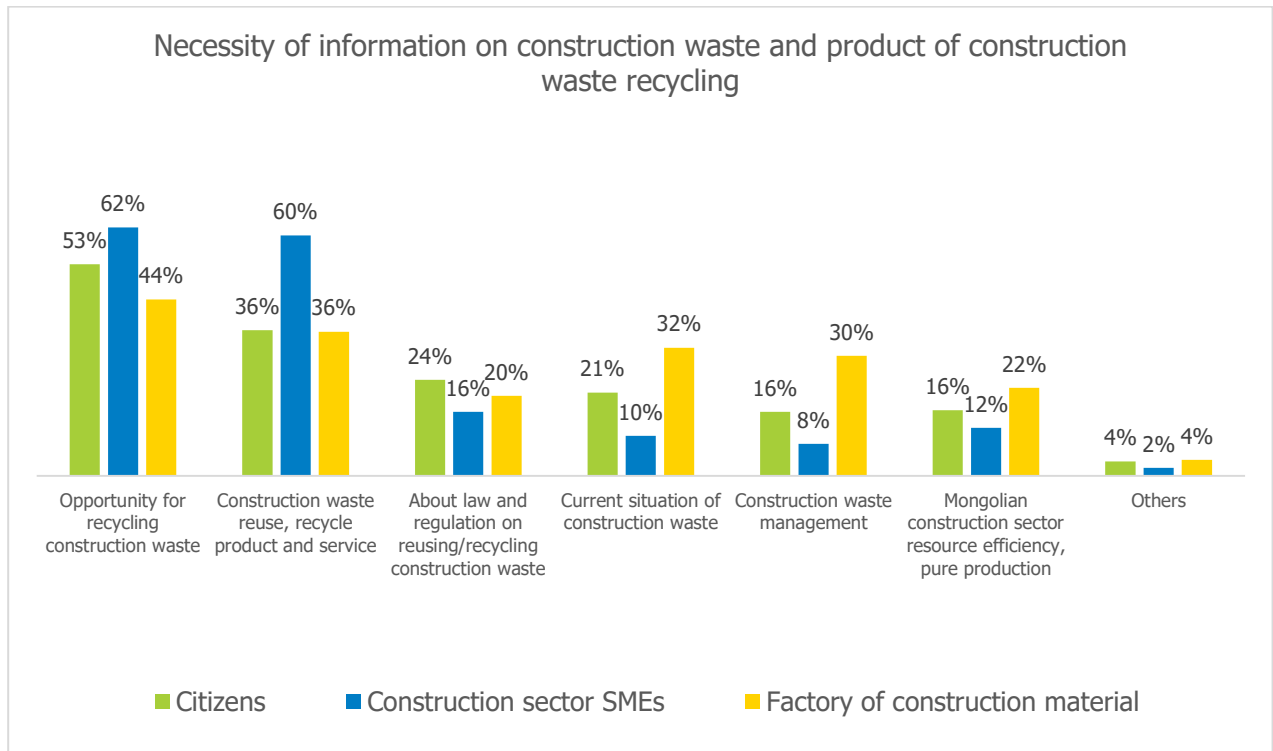

Factory of construction material

	Never	Rarely	Sometimes	Usually	Always
Result-oriented contruction waste management is in place	34%	4%	16%	14%	32%
Classifies construction waste during disposal	36%	14%	10%	10%	30%
There is financial challenge on recycling, sorting construction waste	30%	2%	24%	16%	28%
Keep and reuse reusable construction waste	28%	8%	8%	10%	46%

■ Never ■ Rarely ■ Sometimes ■ Usually ■ Always

3.3 NECESSITY OF INFORMATION

9 out of 10 construction SMEs and construction material manufacturers need information about the construction waste-based products and waste management.

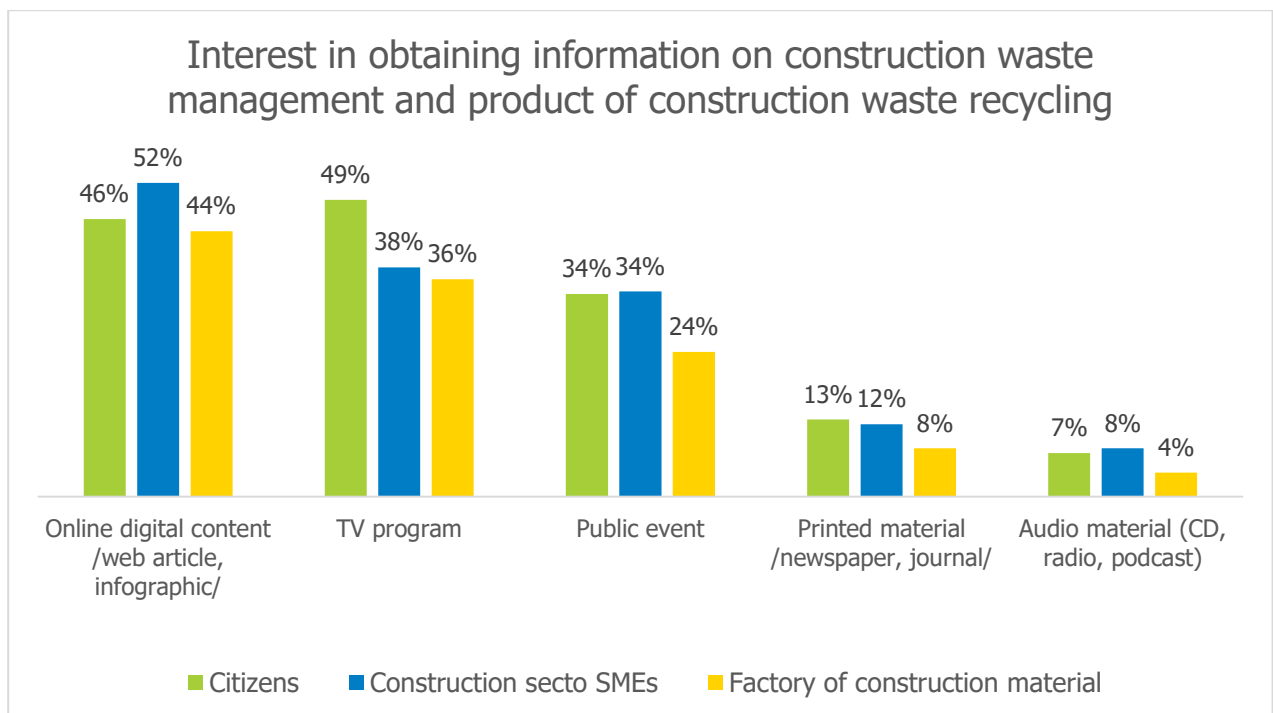*Graphic 22 Necessity of information on construction waste reused product and waste management*

Citizens

67%

90%

Construction sector SMEs

88%

Factory of construction material
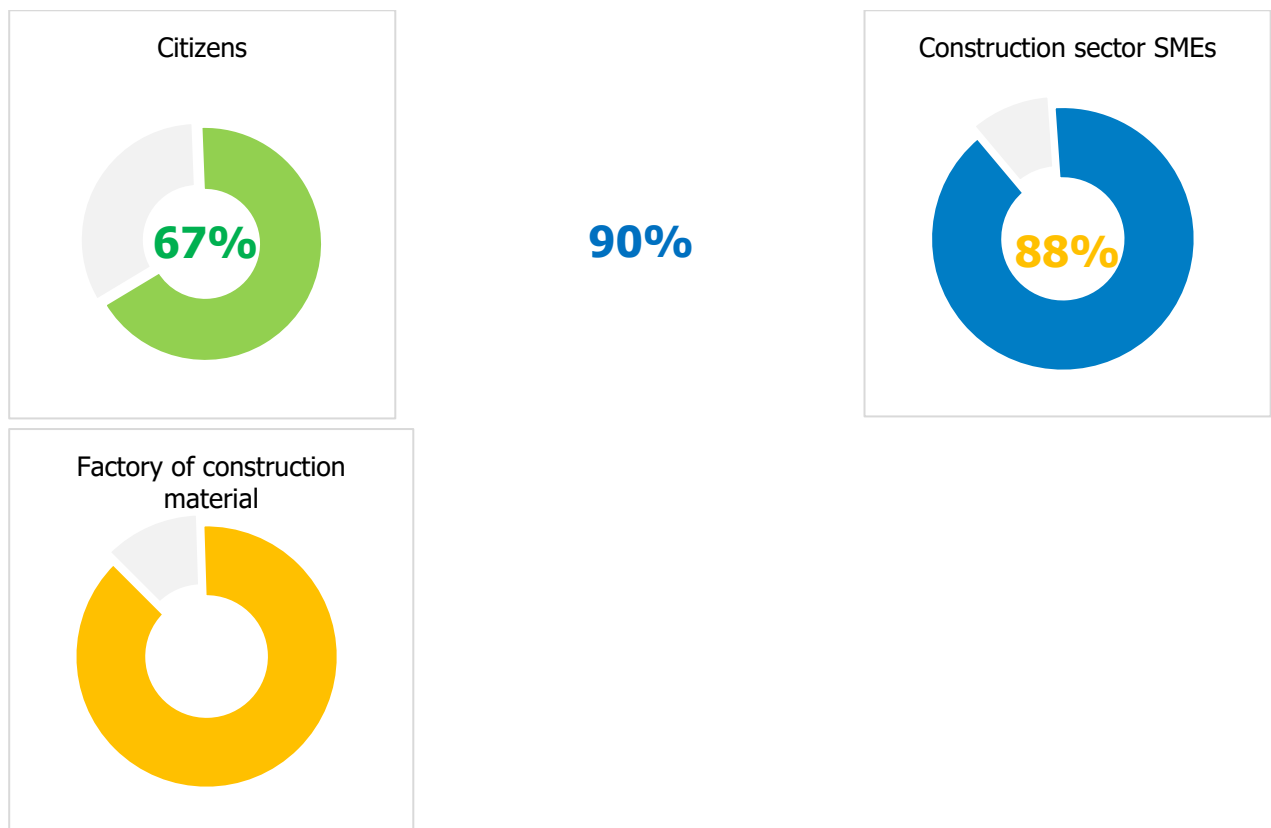
The construction SMEs have the highest demands for the information about the possibilities to recycle construction waste and the plants to recycle construction waste.

Graphic 23 Information on construction waste management and product of construction waste recycling

Necessity of information on construction waste and product of construction waste recycling

Legend: Citizens (green), Construction sector SMEs (blue), Factory of construction material (yellow)

Category	Citizens	Construction sector SMEs	Factory of construction material
Opportunity for recycling construction waste	53%	62%	44%
Construction waste reuse, recycle product and service	36%	60%	36%
About law and regulation on reusing/recycling construction waste	24%	16%	20%
Current situation of construction waste	21%	10%	32%
Construction waste management	16%	8%	30%
Mongolian construction sector resource efficiency, pure production	16%	12%	22%
Others	4%	2%	4%

They are more interested in receiving information on construction waste-based products and construction waste management from electronic digital contents and TV programs.

Graphic 24 Interest in obtaining information on construction waste management and product of construction waste recycling

Interest in obtaining information on construction waste management and product of construction waste recycling

Legend: Citizens (green), Construction secto SMEs (blue), Factory of construction material (yellow)

Category	Citizens	Construction secto SMEs	Factory of construction material
Online digital content /web article, infographic/	46%	52%	44%
TV program	49%	38%	36%
Public event	34%	34%	24%
Printed material /newspaper, journal/	13%	12%	8%
Audio material (CD, radio, podcast)	7%	8%	4%

3.4 MEDIA USAGE

We integrated the problems on the media use for the respondent citizens, construction SMEs and construction material manufacturers.
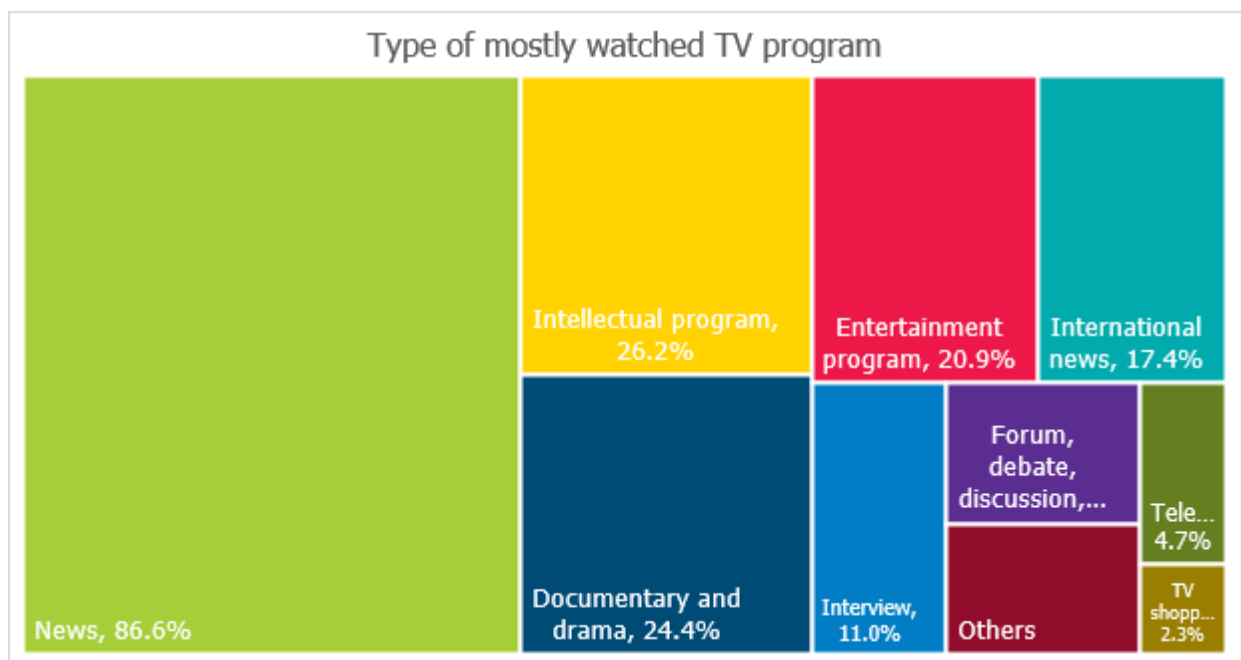
66% of all the respondents mostly watch MNB channel, followed by Education TV and Mongol TV.
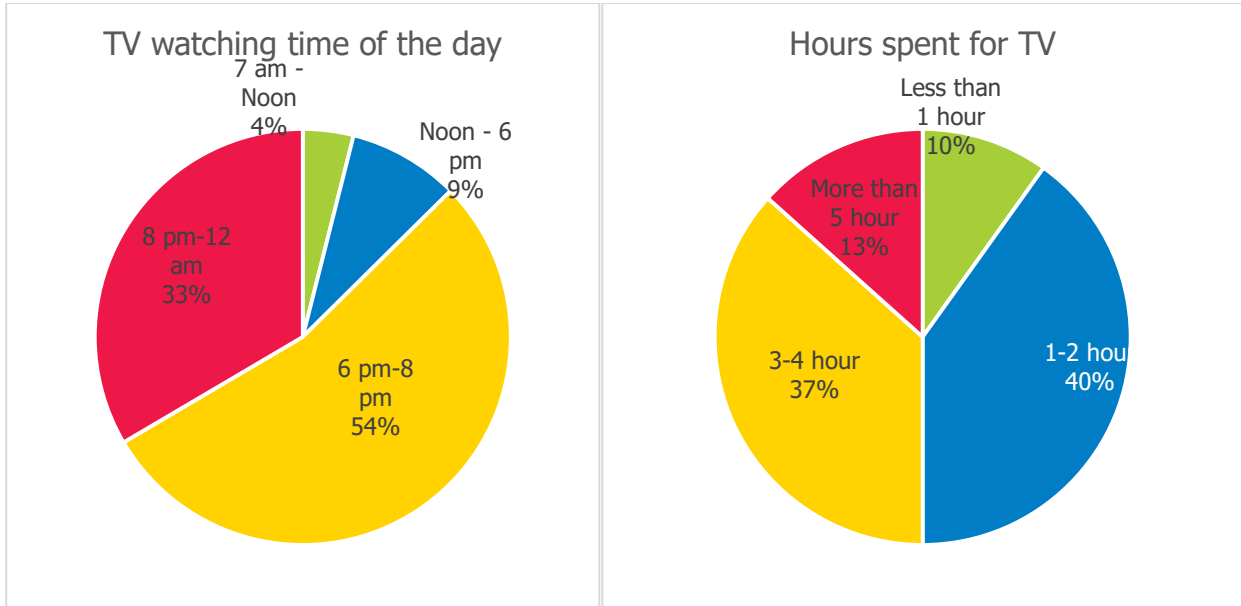
Graphic 25 Most watched TV station
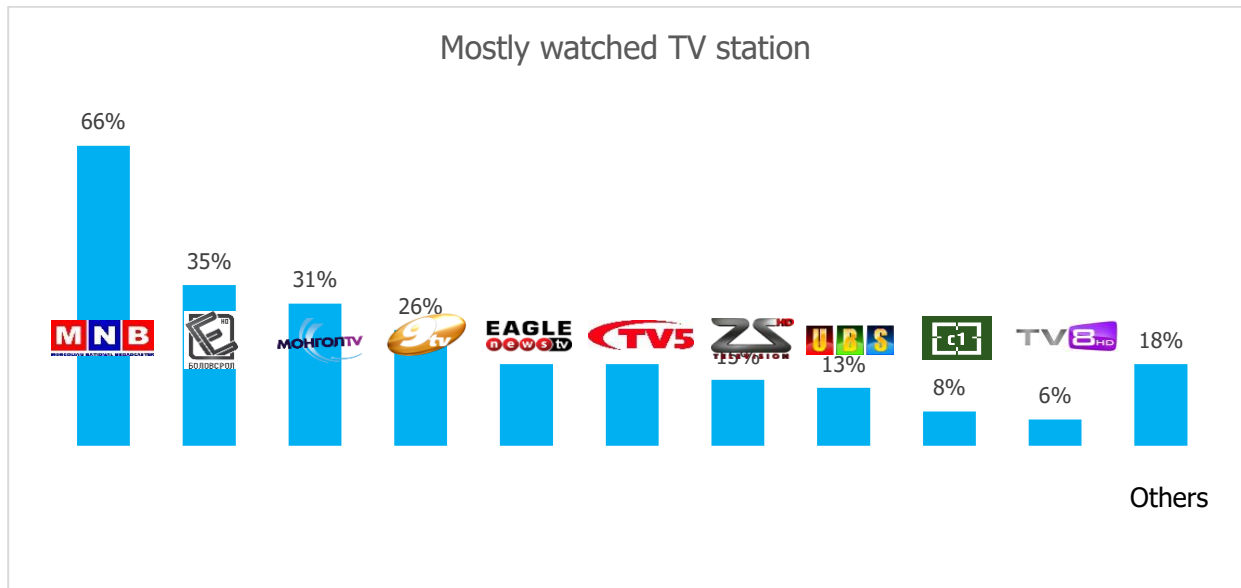
86.6% of the respondents mostly watch the current news, followed by cognitive and documentary programs and serials.
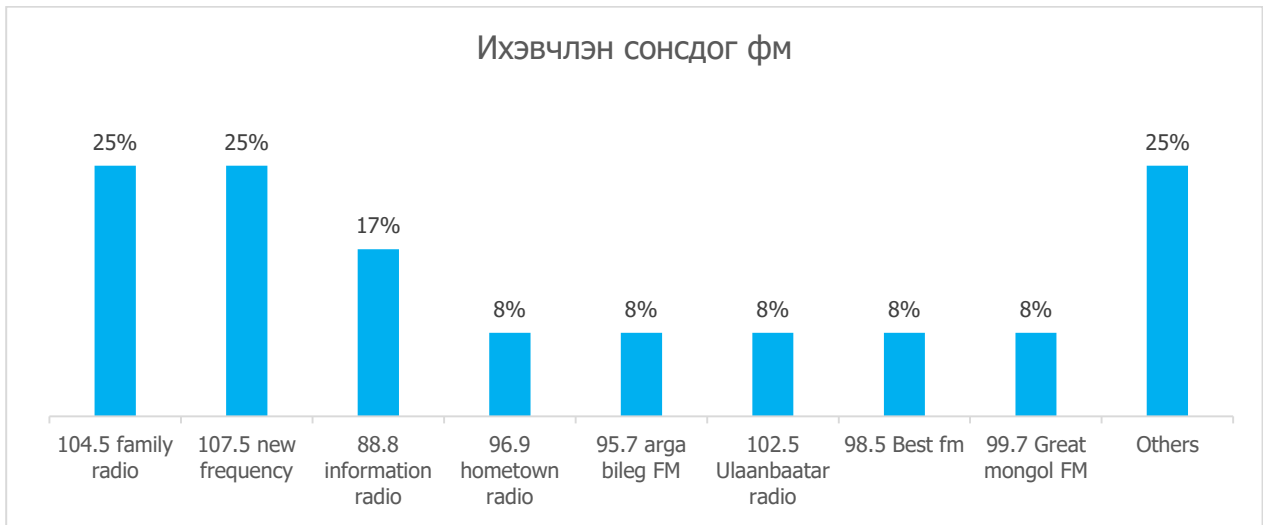
Graphic 26 Mostly watched TV program type

The respondents mostly watch TV in the evenings, and over 50% of the respondents watch over 3 hours a day.

Graphic 27 Time for TV

Most respondents listen to Family radio 104.5 and New wave 107.5 FM radios.

Graphic 28 Mostly listening to FM, radio

The respondents mostly listen to music programs on FM radios.

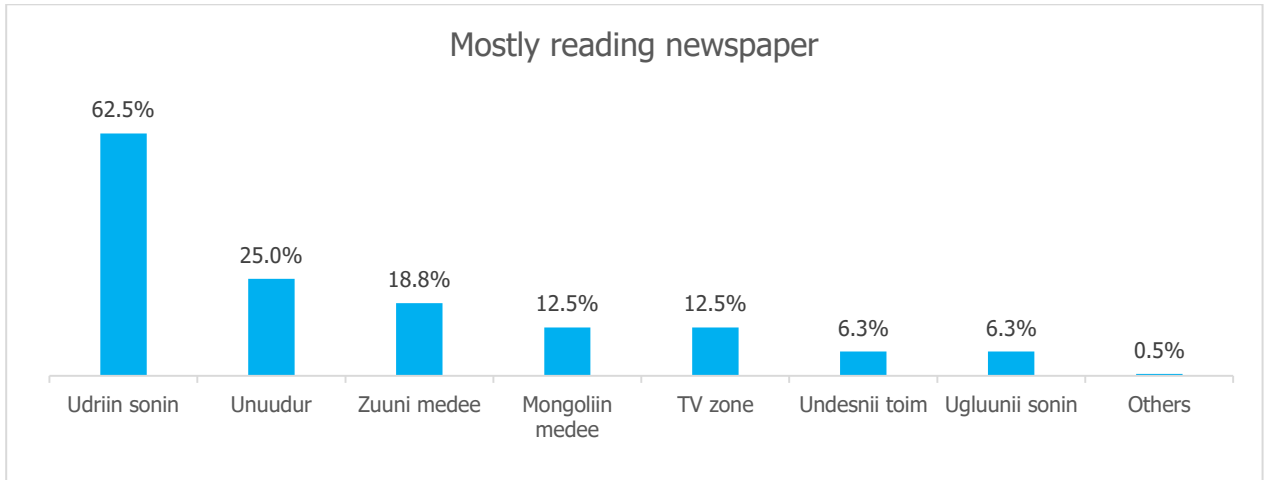*Graphic 29 Mostly listening radio broadcast type*
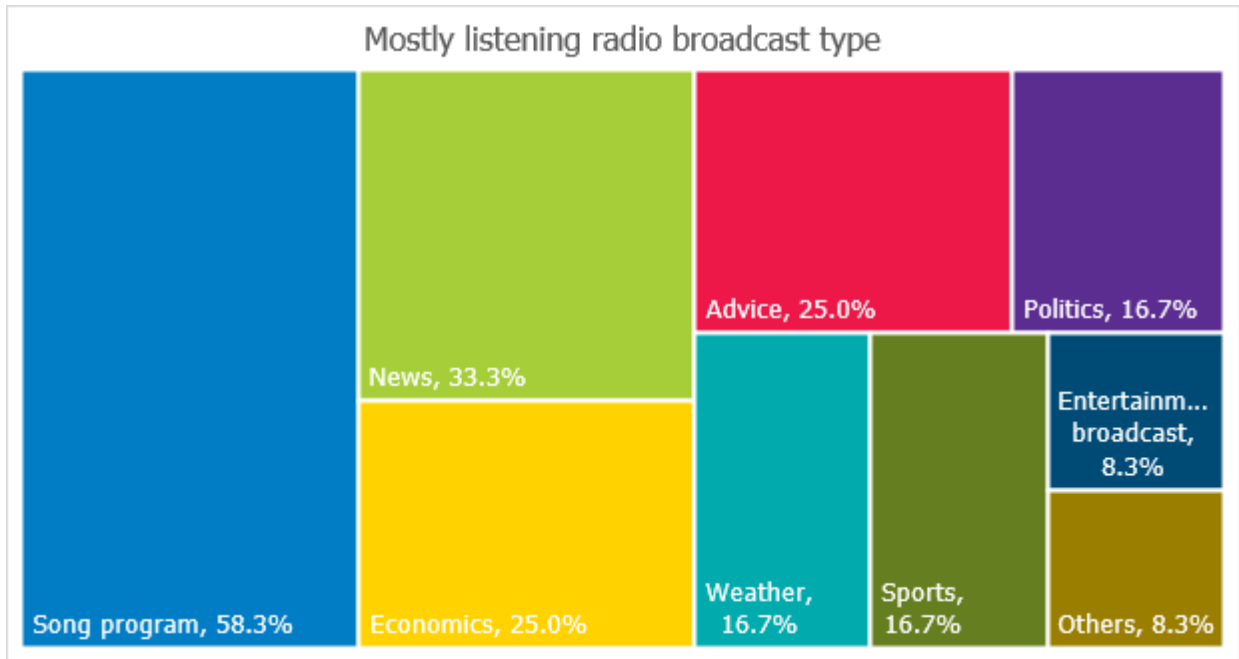
The respondents mostly listen to the FM radios in the mornings or between 07-12 o'clock.

Graphic 30 Mostly listening time and spending time for radio
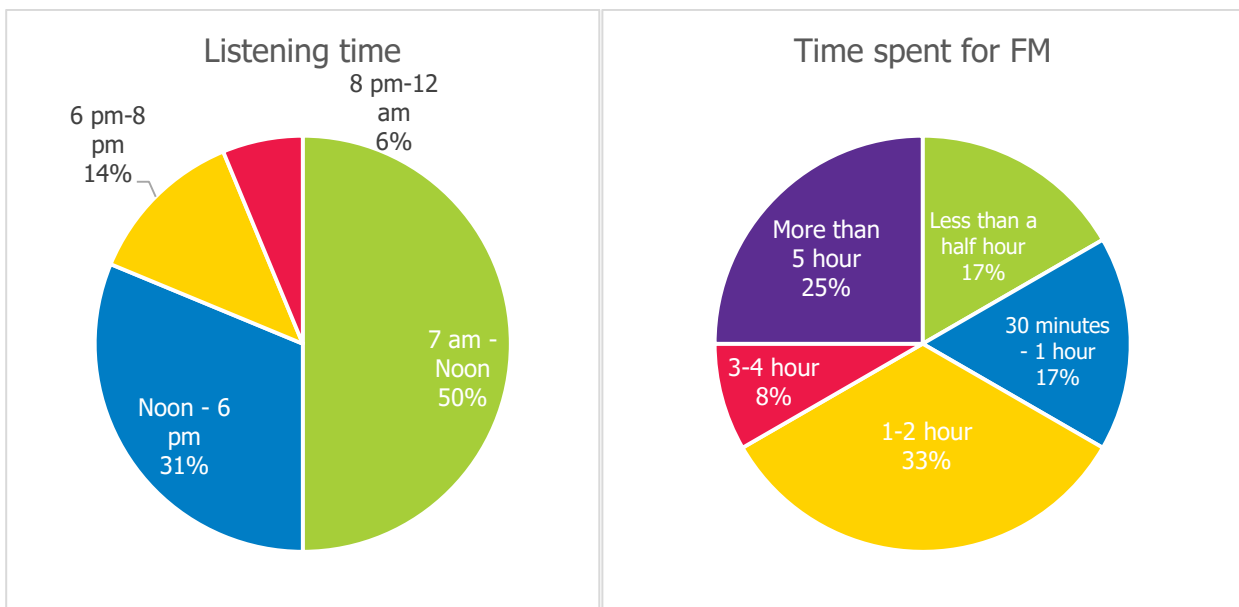
The respondents mostly read the Udriin sonin (Daily news) and Unuudur (Today) newspapers.

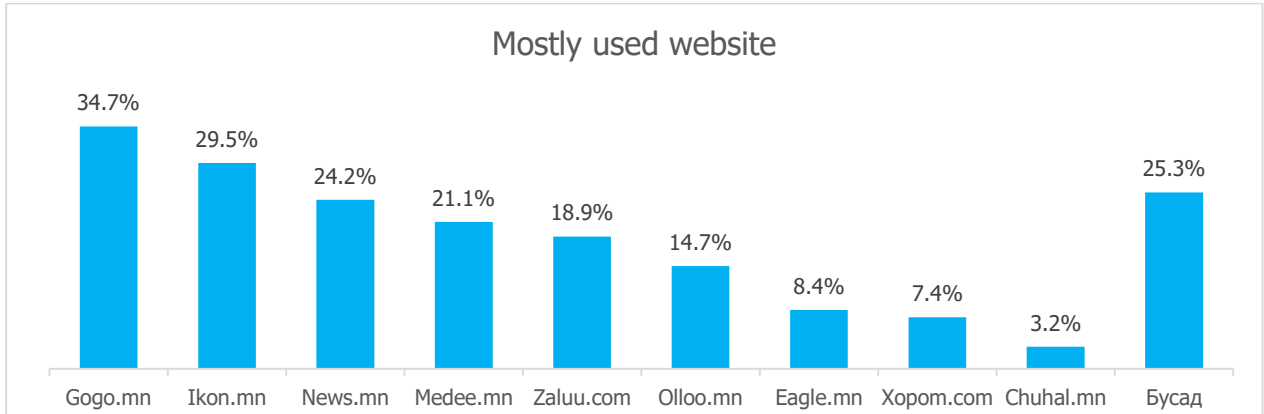*Graphic 31 Mostly reading newspaper, journals*

The respondents mostly read the current news, weather forecast, market and economic news.

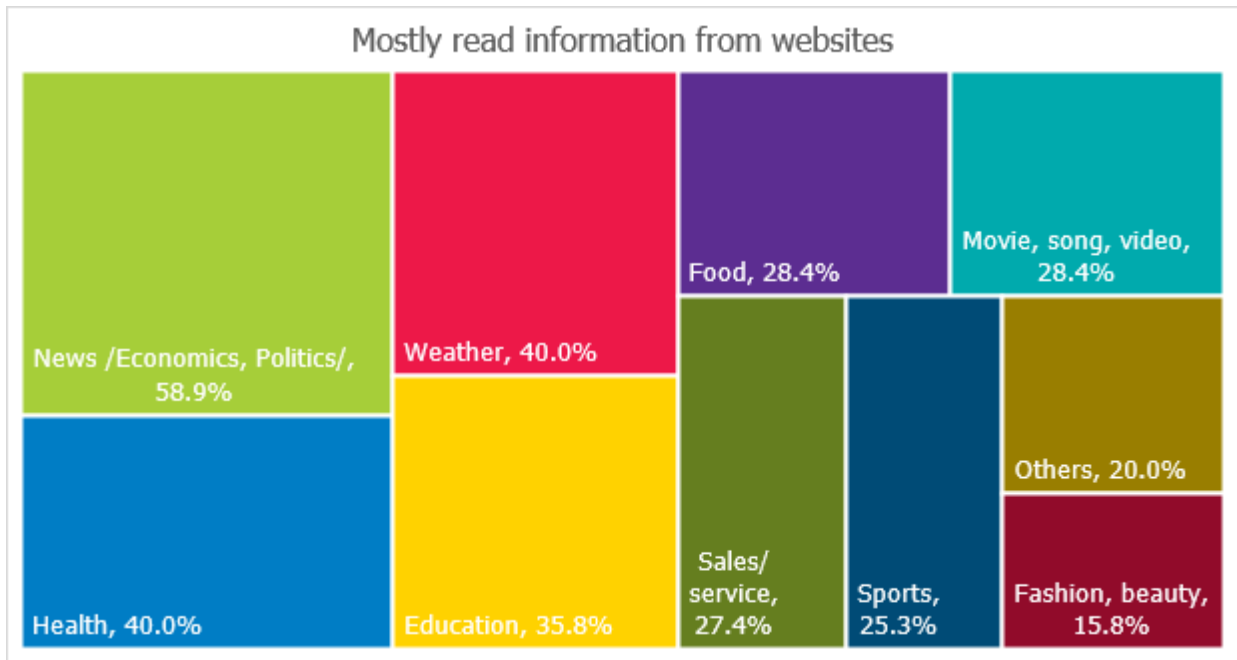*Graphic 32 Mostly read information type from newspaper and journals*
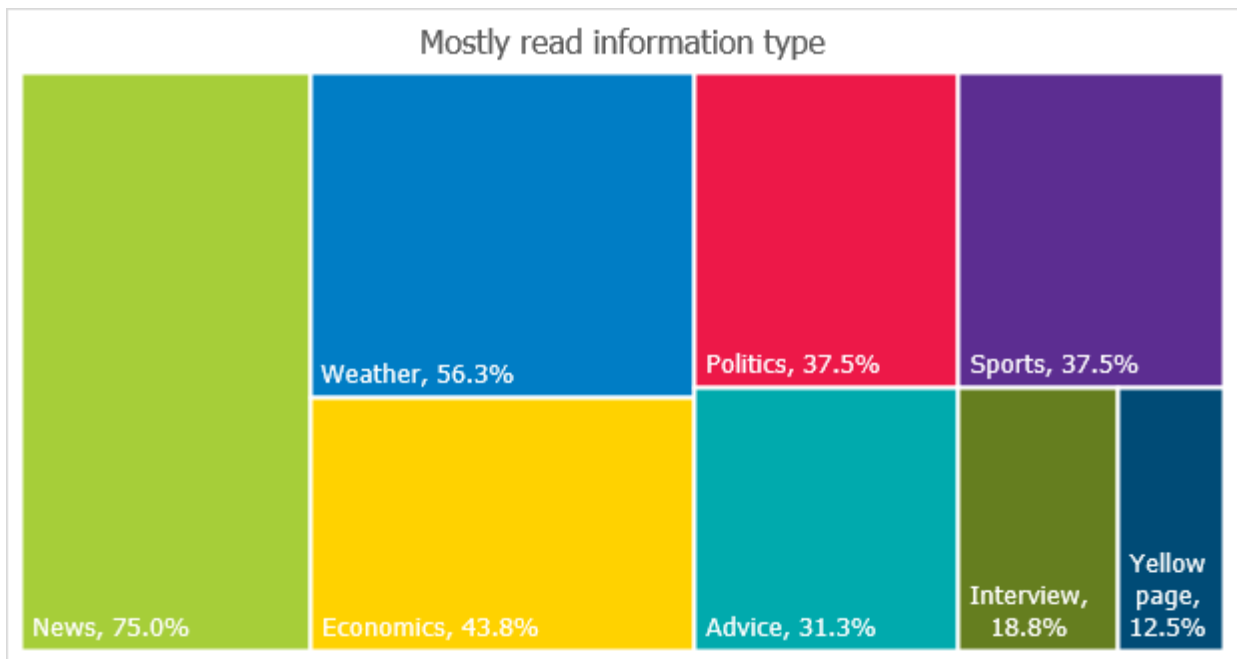
34.7% of the respondents use gogo.mn, and 29.5% use ikon.mn websites on the Internet.
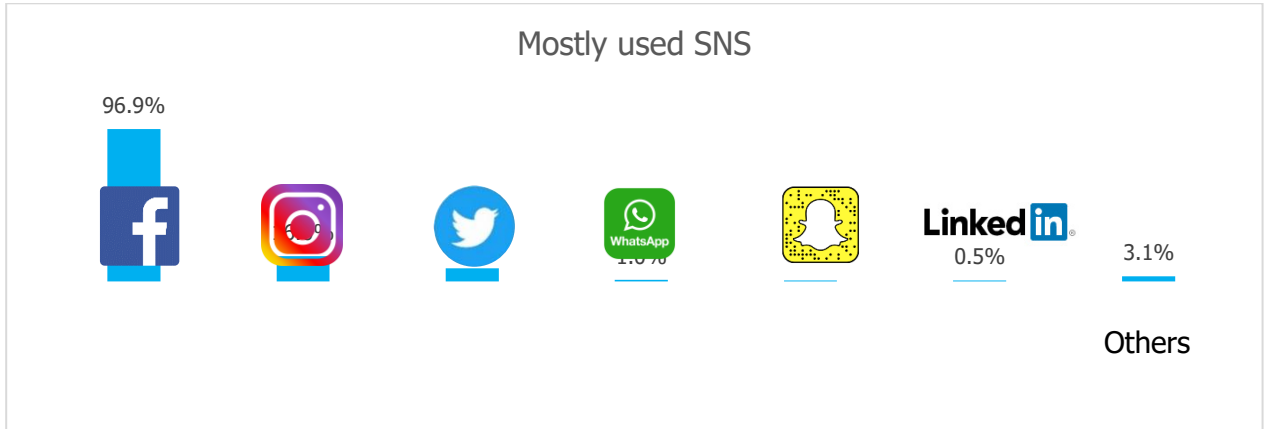
Graphic 33 Mostly used website

The respondents mostly read current news and health information.

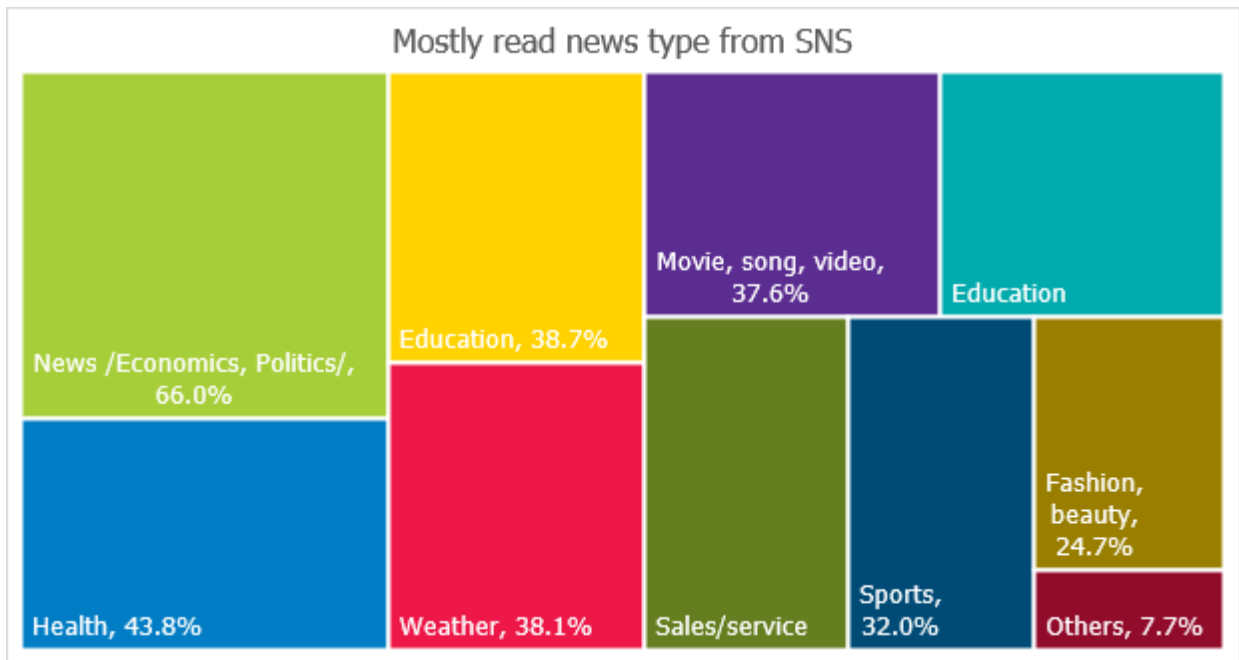*Graphic 34 Information type from websites*

96.9% of all respondents use Facebook and 16% use Instagram.

Graphic 35 Mostly used social network

Mostly used SNS

96.9%

0.5%   3.1%

Others

The respondents mostly read the current news and health programs from social media.

Graphic 36 Mostly read news type from SNS

Mostly read news type from SNS

News /Economics, Politics/, 66.0%

Education, 38.7%

Movie, song, video, 37.6%

Education

Health, 43.8%

Weather, 38.1%

Sales/service

Sports, 32.0%

Fashion, beauty, 24.7%

Others, 7.7%

PART 4 CONCLUSION

The respondent citizens and entities strongly agree that the construction sector has been expanding as well as the amount of construction waste is increasing recently.

76% of the construction SMEs and 56% of the construction material manufacturers agree that the construction waste has less negative impacts on the environment, which shows poor knowledge of the respondents on this issue.

72% of the construction SMEs and 82% of the construction material manufacturers agree that there is a high opportunity to reuse the waste from the construction site. 80% of the construction SMEs and 74% of the construction material manufacturers know what kind of construction waste is reusable. 87% of the construction SMEs and 84% of the construction material manufacturers agree that there is no plant which recycles construction waste in Mongolia.

The results show that the construction SMEs and the construction material manufacturers have relatively good knowledge about the high opportunity to reuse the construction waste and what kind of construction waste is reusable. However, they have no information about the plants/entities, which recycle such construction waste and do not know how to contact them. They do not believe fully in the quality of recycled construction materials. The respondents mentioned that the quality of recycled construction materials are the same as the non-recycled materials, which is proved, and if the cost of the recycled material is cheaper, they will choose it and use in their works.

28% of the construction SMEs and 44% of the construction material manufacturers heard about 3R methodology of reducing, reusing and recycling waste at the source.

91% of the citizens, 94% of the construction SMEs and 80% of the construction material manufacturers agree that it is necessary to prohibit the landfilling the reusable construction materials.

The citizens, the construction SMEs and construction material manufacturers agree that they have no information and knowledge about the laws and regulations about the laws and regulations on the waste of construction material waste, which shows that the practice of the enforcement is low. The entities engaged in construction sector consider that it is necessary to conduct regular inspections and public inspections in the sector.

52% of the construction SMEs implement construction waste management in their activities, and 58% have financial problems in implementing the classification of the waste. 62% of the construction material manufacturers implement construction waste management in their activities, and 68% have financial problems in implementing the classification of the waste.

The construction SMEs consider that classifying construction waste is very expensive and do not know where to apply, therefore, dispose in the dumpsite and use the solid waste for refilling and dispose of waste by paying private drives of trucks. Therefore, it is necessary to advertise and promote the companies which recycle construction waste, expand cooperation and improve the coherence.

90% of the construction SMEs and 88% of the construction material manufacturers need information about the construction waste-based management and products. It shows a high demand for such information for these kinds of entities.

The construction SMEs and the construction material manufacturers need more information about the possibilities to recycle construction waste and classify the waste. Such information would be more efficient on the electronic digital source and TV programs.

If the information on the possibilities of recycling construction waste, classification and production construction waste-based products would be more efficient on television, social sites and FM radios.

Tas for the television, MNB, Education channel, Mongol TV and TV-9 channels are the most commonly used especially after 6 p.m. The respondents mostly watch the current news, cognitive programs and serials, so the advertisement and information about construction waste and related information during these programs would be more efficient.

As for social media, 97% of the respondents use the social media, so the opportunities for recycling construction waste and information about construction waste would be more efficient in the form of digital video contents and interesting infographics.

34.7% of the respondents use gogo.mn, 29.5% use Ikon.mn, and 24.2% use the news.mn websites.

The respondents mostly listen to the family radio 104.5, new wave 107.5 in the morning or between 7-12 am. The respondents mostly listen to music programs and current news.

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