Presentation of
SAWYER FORECASTING SURVEY RESULTS
for

- SAWYER WORKSHOP, 4th December 2019 -
Forecasting the Furniture Sector Scenario in 2030

LEAD PARTNER:

PARTNER ORGANIZATIONS:

| European Federation of Building and Woodworkers | European Furniture Manufacturers Federation | European Furniture Manufacturers Federation | FederlegnoArredo |

LIST OF FACT SHEETS

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1. TABLE RESULTS

ID	LEGISLATIVE INSTRUMENTS	Forecasted Evolution	PROBABILITY (mean value)	PROBABILITY (Standard Deviation)	IMPACT (mean value)	IMPACT (Standard Deviation)	IMPORTANCE (PROB x IMP.)
1.1	Circular Economy Package of the EC	The furniture sector is considered a priority in the review of the Circular Economy Package of the EC (COM (2015) 614), developing specific legislation in this regard to increase the reuse and recycling of its products, setting specific objectives of recovery (similar to the current initiative in the plastics sector).	67,18	17	7,23	1,53	485,63
1.2	Circular Economy Package of the EC	Wood is considered a priority raw material in the review of the Action Plan in Circular Economy of the European Commission (COM (2015) 614), developing specific legislation in this regard to promote its efficient use and recovery.	65,45	15	6,98	1,63	456,79
1.3	Circular Economy Package of the EC	Business models of the furniture sector based on servitization are generalized, where the manufacturer owns the product and offers as service the use of furniture to the consumer in exchange of a periodic payment, which covers its maintenance, replacement, etc.	64,47	24	7,02	2,24	452,67
1.4	Circular Economy Package of the EC	The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) generates changes in the productive models of the furniture sector, developing processes and machinery more efficient and with less waste generation, based on new ICT technologies (Industry 4.0).	74,57	16	7,13	1,91	531,30
1.5	Circular Economy Package of the EC	The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) produces changes in the customer service models, increasing the information to be provided to the customer (for example: content of hazardous substances, product durability, manuals for repair and maintenance, instructions for the end of life management, etc.).	77,33	19	6,31	2,05	488,17
1.6	Circular Economy Package of the EC	The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) produces changes in the customer service models, increasing the guarantee period that must be offered to the customer and the time of spare parts availability.	65,51	21	6,13	2,07	401,25
2.1	WEEE Directive	Furniture sector products that contain electrical and electronic components are affected by the requirements of the WEEE Directive (2012/19/EU), and therefore they require a circuit for their collection and treatment at the end of their life cycle.	69,61	22	6,13	2,20	426,53
2.2	WEEE Directive	Furniture sector products that contain electrical and electronic components are affected by the requirements of the WEEE Directive (2012/19 / EU), and specific objectives are set for their recovery and preparation for their reuse and recycling.	68,02	21	6,11	2,05	415,36
3.1	RoHS Directive	Furniture sector products that contain electrical and electronic components are affected by the requirements of the RoHS Directive (EU) 2017/2102), and therefore their components cannot contain substances such as brominated flame retardants (PBDE, PBB) or heavy metals such as lead, mercury, cadmium or hexavalent chromium.	74,65	20	5,31	2,15	396,49
4.1	ErP Directive	Ecological design requirements are defined, under the eco-design (ErP) directive framework (2009/125/EC), for products not-related with energy, such in the case of furniture sector products. These criteria include aspects of materials efficiency such as durability requirements, reparability, spare parts availability, disassembling easiness, use of materials, etc.	67,56	24	7,23	1,63	488,73
5.1	EPR schemes	A European directive defining an Extended Producer Responsibility scheme or take-back scheme is published for the furniture sector products, forcing to define a system for the collection and treatment of these products at the end of their life cycle, being the manufacturers the ones responsible for covering the associated costs.	69,52	23	7,68	1,79	533,97
5.2	EPR schemes	A voluntary agreement among the manufacturers of the furniture sector at European level is agreed to define an Extended Producer Responsibility scheme or take-back scheme, which allows the sector products collection, return and treatment at the end of their life cycle, without any cost for the final users.	54,72	26	6,06	2,39	331,81
6.1	REACH Regulation	The REACH Regulation (EC 1907/2006) classifies some of the substances used in the furniture products manufacturing as restricted substances (Annex XVII), in the list of candidates or as extremely worrying substances (substances of very high concern - SVHC-) that require authorization (Annex XIV).	73,51	20	6,47	1,93	475,37
6.2	REACH Regulation	The proposal presented within the REACH Regulation framework is approved to restrict the placing on the market or the use of items that emit formaldehyde at concentration levels equal or greater than 0.124 mg/m3 (equivalent to category E1).	76,77	17	6,43	2,06	493,78
7.1	Formaldehyde emissions	The European Commission decides to regulate the emission of formaldehyde of products at European level, fixing a value lower than category E1 (<0.124 mg / m3), currently fixed in several European countries and in the voluntary agreement of EPF (European Panel Federation) members.	76,94	17	6,44	1,92	495,81
7.2	Formaldehyde emissions	The European Commission decides to reduce the formaldehyde occupational exposure limit below the current value of 0.3 ppm.	70,96	18	5,62	1,73	398,95
7.3	Formaldehyde emissions	Consumers appreciates that the product does not emit formaldehyde, thus a specific label of "formaldehyde-free" is created to inform consumers the product comply with it.	68,57	23	6,24	2,27	427,83
8.1	End-of-waste criteria	End-of-life waste criteria are defined for wood waste (Directive 2008/98/EC), which will produce quality standards for secondary raw materials (similar to copper and steel scrap currently).	67,70	17	6,59	1,98	445,94
8.2	End-of-waste criteria	There is a market and a consolidated demand for wood waste that will be used as secondary raw materials in different sectors, securing their quality and traceability.	73,64	19	6,40	1,83	471,61
9.1	Flame retardants	The use of flame retardants in furniture products is forbidden. Compliance with the flammability requirements set by current legislation will be secured by the use of alternatives products with lower risk for people and the environment.	69,65	18	6,09	1,67	424,11
9.2	Flame retardants	Consumers appreciates that the product does not contain dangerous flame retardants, thus a specific label of "flame retardant-free" is created to inform consumers the product comply with it.	66,67	23	5,43	2,00	362,36
10.1	Energy Directive	Wood furniture and panels waste are used to produce second generation biofuels, which meet the sustainability requirements set out in Directive 2018/2001/EU. Because of this, specific collection circuits are deployed for this waste.	57,78	22	5,74	1,98	331,93
11.1	Illegal logging and illegal timber trade	The type of products covered by the Regulation (EU) No. 995/2010 or EUTR is extended, reducing the number of exceptions and extending the scope to recycled products, medical furniture and seating furniture.	68,25	17	5,82	1,92	397,37
11.2	Illegal logging and illegal timber trade	The number of countries that sign voluntary association agreements with the EU under the umbrella of the FLEGT Regulation (Regulation (EC) No 2173/2005) is significantly increased, covering most of the world countries.	64,27	18	5,44	1,83	349,92

ID	VOLUNTARY INSTRUMENTS	Forecasted Evolution	PROBABILITY (mean value)	PROBABILITY (Standard Deviation)	IMPACT (mean value)	IMPACT (Standard Deviation)	IMPORTANCE (PROB x IMP.)
12.1	Green Public Procurement	The objective that 50% of public procurement tenders for furniture in Europe include environmental criteria is achieved, following the green public procurement criteria set by the European Union or by criteria set in each country.	74,44	17	7,09	1,69	527,55
12.2	Green Public Procurement	All European countries have developed Green Public Procurement criteria for furniture, either by adopting the EU recommendations or by developing their own criteria (the State of art report shows which countries have developed these criteria in 2017).	72,20	18	6,79	1,56	490,04
13.1	Environmental Management Systems ISO14001/EMAS	In Europe, 25% of companies of the furniture sector have a certified environmental management system, either EMAS or ISO-14001 (the number of companies that currently have these systems certified is indicated in the State of art report).	62,18	24	5,78	2,00	359,58
13.2	Environmental Management Systems ISO14001/EMAS	Customers, final (B2C) or intermediate customers (B2B), value positively that the furniture products supplier in the sector has a certified environmental management system, either EMAS or ISO-14001, which has become a competitive advantage.	64,18	20	5,72	2,14	366,96
14.1	Ecodesign ISO14006	10% of the European furniture sector companies have an Ecodesign ISO-14006 management system.	55,14	23	6,07	1,90	334,45
14.2	Ecodesign ISO14006	Customers, final customers (B2C) or intermediate customers (B2B), positively value that the furniture products supplier in the sector has an Eco-design ISO-14006 management system, which has become a competitive advantage.	58,16	24	5,72	1,82	332,54
14.3	Ecodesign ISO14006	The furniture is designed to reduce the impact of used raw materials (use of recycled material, reduction of hazardous substances content, use of wood with lower environmental impact, use of proximity wood, etc.).	74,98	15	7,48	1,61	560,72
14.4	Ecodesign ISO14006	The furniture is designed to extend its life cycle (more resistant materials/joints, facilitate its repair and maintenance, etc.).	69,76	19	7,09	1,84	494,35
14.5	Ecodesign ISO14006	The furniture is designed to optimize its recovery at the end of its life cycle (to facilitate materials disassembly and separation, modularity for reuse of certain parts, reuse and remanufacturing enhancement, etc.).	73,47	18	7,30	1,61	536,65
15.1	Ecolabels (Type I, II, III)	Customers (final or intermediate customers) positively value that the furniture products have a Type I ecolabel (according to ISO 14024), which has become a competitive advantage.	61,51	22	6,07	1,78	373,07
15.2	Ecolabels (Type I, II, III)	Customers final customers (B2C) or intermediate customers (B2B), positively value that the furniture products have a Type II ecolabel (according to ISO 14021), which has become a competitive advantage.	56,84	21	5,58	1,93	317,02
15.3	Ecolabels (Type I, II, III)	Customers final customers (B2C) or intermediate customers (B2B), positively value that the furniture products have a Type III ecolabel (according to ISO 14025), which has become a competitive advantage.	60,60	21	6,02	2,02	364,95
15.4	Ecolabels (Type I, II, III)	The different Type I ecolabels criteria that affect the furniture sector are unified, facilitating their understanding by customers (for example European label, Blue Angel, Nordic Swan, etc.).	56,31	25	5,71	2,18	321,61
15.5	Ecolabels (Type I, II, III)	50% of the furniture sector products have at least one type of environmental ecolabel, either type I, II or III.	62,50	20	6,13	1,55	383,33
16.1	Chain of Custody FSC/PEFC	Customers, final customers (B2C) or intermediate customers (B2B), positively value that the furniture product has a chain of custody certification, according to existing schemes (FSC, PEFC, etc.), which have become a competitive advantage.	78,02	16	6,57	1,96	512,46
16.2	Chain of Custody FSC/PEFC	70% of the furniture sector products have at least one type of Chain of Custody certification - CoC, whether FSC, PEFC or similar.	68,73	18	6,42	1,77	441,39
16.3	Chain of Custody FSC/PEFC	Customers, final customers (B2C) or intermediate customers (B2B), positively value that the furniture product uses wood from forests with certified management according to systems such as FSC, PEFC, or others equivalent, which have become a competitive advantage.	77,67	16	6,36	1,95	494,24
16.4	Chain of Custody FSC/PEFC	New technologies (e.g. Internet of Things - IoT, blockchain, etc.) are used to improve the traceability of wood products and ensure the chain of custody along the whole value chain.	75,08	14	7,04	1,54	528,84
17.1	Green building certification BREEAM/LEED	The criteria associated with the use of furniture that uses sustainable materials acquires greater relevance in the systems of Green building certification (e.g. LEED or BREEAM), encouraging their use in those buildings that aim to obtain this type of certification.	74,06	17	6,60	1,77	488,81

ID	OTHER POLICIES AND STRATEGIES	Forecasted Evolution	PROBABILITY (mean value)	PROBABILITY (Standard Deviation)	IMPACT (mean value)	IMPACT (Standard Deviation)	IMPORTANCE (PROB x IMP.)
18.1	Cascading use of wood	The European Commission reinforces its circular economy strategy by regulating the strategy of cascading use in the furniture sector, promoting the recovery of wood in the different stages of the product, recycling or reusing it repetitively before moving it to the next stage.	69,96	19	6,96	1,71	486,67
19.1	EU industry policy for Forestry	The EU industry policy for Forestry (COM (2013) 659 final), extends beyond forests, also covering aspects of its value chain, such as how forest resources are used to produce products or services.	63,57	21	6,22	1,48	395,56
19.2	EU industry policy for Forestry	The activities of greenhouse gas emissions compensation generate a reactivation of forest resources, making necessary their better management that allows greater traceability and monitoring.	71,00	18	6,20	2,05	439,89
20.1	Forest Based Industries Blueprint	A strategic vision and its needed actions are set to secure the competitiveness of the furniture sector in 2050. Sector companies establish concrete and binding commitments, based on the update version of the study carried out in 2013 (SWD(2013) 343 final).	63,54	18	6,60	1,40	419,38
21.1	Bioeconomy	The European Bioeconomy strategy identifies the furniture sector as a relevant sector to achieve its objective, setting concrete actions that bind sector companies.	67,11	15	6,32	1,63	423,99
21.2	Bioeconomy	Based on the European Bioeconomy strategy, significant synergies with other sectors of primary production that use and produce biological resources arise, optimizing raw materials consumption and minimizing generation of waste.	67,28	16	6,41	1,73	431,18

2. General Classification

Class	ID	INSTRUMENTS	Forecasted Evolution	IMPORTANCE (PROB x IMP.)	PROBABILITY (mean value)	PROBABILITY (Standard Deviation)	IMPACT (mean value)	IMPACT (Standard Deviation)
1	14.3	Ecodesign ISO14006	The furniture is designed to reduce the impact of used raw materials (use of recycled material, reduction of hazardous substances content, use of wood with lower environmental impact, use of proximity wood, etc.).	561	74,98	15	7,48	1,61
2	14.5	Ecodesign ISO14006	The furniture is designed to optimize its recovery at the end of its life cycle (to facilitate materials disassembly and separation, modularity for reuse of certain parts, reuse and remanufacturing enhancement, etc.).	537	73,47	18	7,30	1,61
3	5.1	EPR schemes	A European directive defining an Extended Producer Responsibility scheme or take-back scheme is published for the furniture sector products, forcing to define a system for the collection and treatment of these products at the end of their life cycle, being the manufacturers the ones responsible for covering the associated costs.	534	69,52	23	7,68	1,79
4	1.4	Circular Economy Package of the EC	The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) generates changes in the productive models of the furniture sector, developing processes and machinery more efficient and with less waste generation, based on new ICT technologies (Industry 4.0).	531	74,57	16	7,13	1,91
5	16.4	Chain of Custody FSC/PEFC	New technologies (e.g. Internet of Things - IoT, blockchain, etc.) are used to improve the traceability of wood products and ensure the chain of custody along the whole value chain.	529	75,08	14	7,04	1,54
6	12.1	Green Public Procurement	The objective that 50% of public procurement tenders for furniture in Europe include environmental criteria is achieved, following the green public procurement criteria set by the European Union or by criteria set in each country.	528	74,44	17	7,09	1,69
7	16.1	Chain of Custody FSC/PEFC	Customers, final customers (B2C) or intermediate customers (B2B), positively value that the furniture product has a chain of custody certification, according to existing schemes (FSC, PEFC, etc.), which have become a competitive advantage.	512	78,02	16	6,57	1,96
8	7.1	Formaldehyde emissions	The European Commission decides to regulate the emission of formaldehyde of products at European level, fixing a value lower than category E1 (<0.124 mg / m3), currently fixed in several European countries and in the voluntary agreement of EPF (European Panel Federation) members.	496	76,94	17	6,44	1,92
9	14.4	Ecodesign ISO14006	The furniture is designed to extend its life cycle (more resistant materials/joints, facilitate its repair and maintenance, etc.).	494	69,76	19	7,09	1,84
10	16.3	Chain of Custody FSC/PEFC	Customers, final customers (B2C) or intermediate customers (B2B), positively value that the furniture product uses wood from forests with certified management according to systems such as FSC, PEFC, or others equivalent, which have become a competitive advantage.	494	77,67	16	6,36	1,95
11	6.2	REACH Regulation	The proposal presented within the REACH Regulation framework is approved to restrict the placing on the market or the use of items that emit formaldehyde at concentration levels equal or greater than 0.124 mg/m3 (equivalent to category E1).	494	76,77	17	6,43	2,06
12	12.2	Green Public Procurement	All European countries have developed Green Public Procurement criteria for furniture, either by adopting the EU recommendations or by developing their own criteria (the State of art report shows which countries have developed these criteria in 2017).	490	72,20	18	6,79	1,56
13	17.1	Green building certification BREEAM/LEED	The criteria associated with the use of furniture that uses sustainable materials acquires greater relevance in the systems of Green building certification (e.g. LEED or BREEAM), encouraging their use in those buildings that aim to obtain this type of certification.	489	74,06	17	6,60	1,77
14	4.1	ErP Directive	Ecological design requirements are defined, under the eco-design (ErP) directive framework (2009/125/EC), for products not-related with energy, such in the case of furniture sector products. These criteria include aspects of materials efficiency such as durability requirements, reparability, spare parts availability, disassembling easiness, use of materials, etc.	489	67,56	24	7,23	1,63
15	1.5	Circular Economy Package of the EC	The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) produces changes in the customer service models, increasing the information to be provided to the customer (for example: content of hazardous substances, product durability, manuals for repair and maintenance, instructions for the end of life management, etc.).	488	77,33	19	6,31	2,05
16	18.1	Cascading use of wood	The European Commission reinforces its circular economy strategy by regulating the strategy of cascading use in the furniture sector, promoting the recovery of wood in the different stages of the product, recycling or reusing it repetitively before moving it to the next stage.	487	69,96	19	6,96	1,71
17	1.1	Circular Economy Package of the EC	The furniture sector is considered a priority in the review of the Circular Economy Package of the EC (COM (2015) 614), developing specific legislation in this regard to increase the reuse and recycling of its products, setting specific objectives of recovery (similar to the current initiative in the plastics sector).	486	67,18	17	7,23	1,53
18	6.1	REACH Regulation	The REACH Regulation (EC 1907/2006) classifies some of the substances used in the furniture products manufacturing as restricted substances (Annex XVII), in the list of candidates or as extremely worrying substances (substances of very high concern -SVHC-) that require authorization (Annex XIV).	475	73,51	20	6,47	1,93
19	8.2	End-of-waste criteria	There is a market and a consolidated demand for wood waste that will be used as secondary raw materials in different sectors, securing their quality and traceability.	472	73,64	19	6,40	1,83
20	1.2	Circular Economy Package of the EC	Wood is considered a priority raw material in the review of the Action Plan in Circular Economy of the European Commission (COM (2015) 614), developing specific legislation in this regard to promote its efficient use and recovery.	457	65,45	15	6,98	1,63
21	1.3	Circular Economy Package of the EC	Business models of the furniture sector based on servitization are generalized, where the manufacturer owns the product and offers as service the use of furniture to the consumer in exchange of a periodic payment, which covers its maintenance, replacement, etc.	453	64,47	24	7,02	2,24
22	8.1	End-of-waste criteria	End-of-life waste criteria are defined for wood waste (Directive 2008/98/EC), which will produce quality standards for secondary raw materials (similar to copper and steel scrap currently).	446	67,70	17	6,59	1,98
23	16.2	Chain of Custody FSC/PEFC	70% of the furniture sector products have at least one type of Chain of Custody certification - CoC, whether FSC, PEFC or similar.	441	68,73	18	6,42	1,77
24	19.2	EU industry policy for Forestry	The activities of greenhouse gas emissions compensation generate a reactivation of forest resources, making necessary their better management that allows greater traceability and monitoring.	440	71,00	18	6,20	2,05

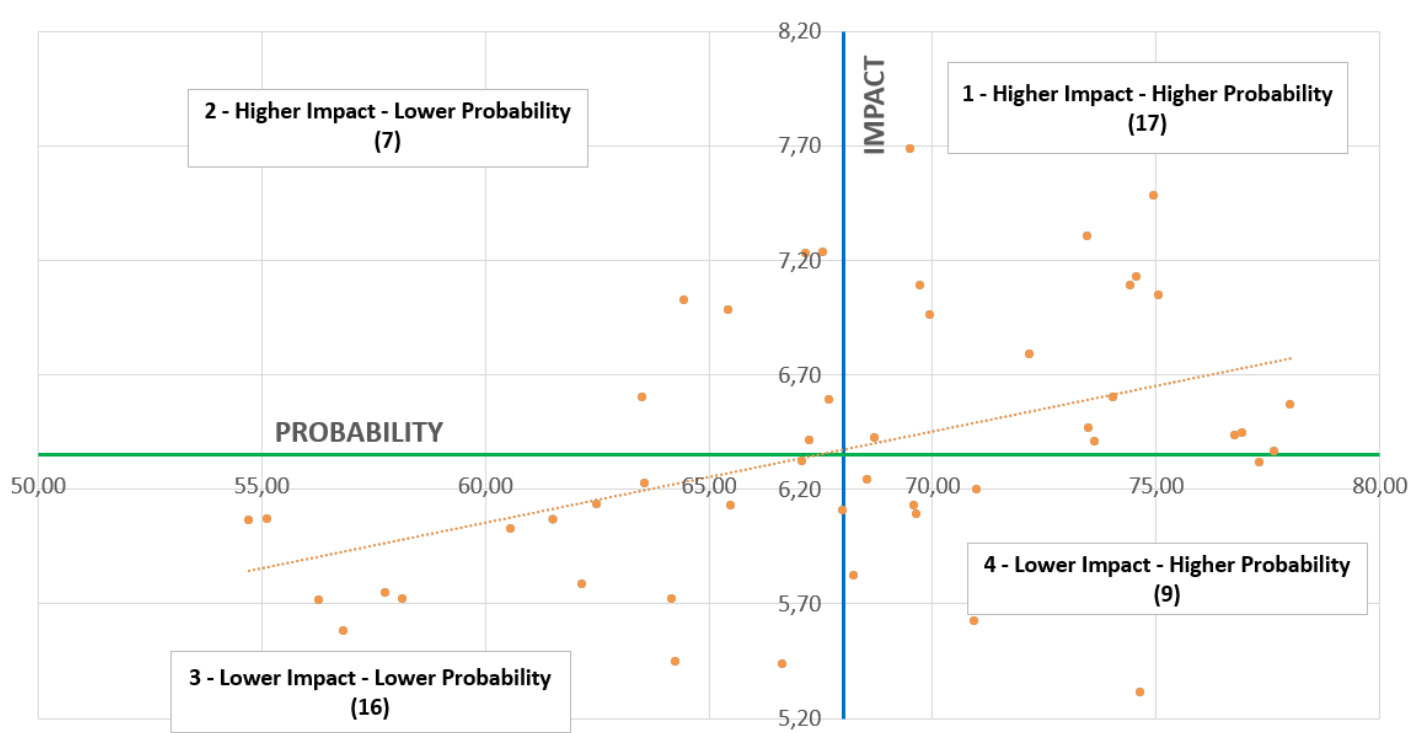| Class.	ID	INSTRUMENTS	Forecasted Evolution	IMPORTANCE (PROB x IMP.)	PROBABILITY (mean value)	PROBABILITY (Standard Deviation)	IMPACT (mean value)	IMPACT (Standard Devation)
25	21.2	Bioeconomy	Based on the European Bioeconomy strategy, significant synergies with other sectors of primary production that use and produce biological resources arise, optimizing raw materials consumption and minimizing generation of waste.	431	67,28	16	6,41	1,73
26	7.3	Formaldehyde emissions	Consumers appreciates that the product does not emit formaldehyde, thus a specific label of "formaldehyde-free" is created to inform consumers the product comply with it.	428	68,57	23	6,24	2,27
27	2.1	WEEE Directive	Furniture sector products that contain electrical and electronic components are affected by the requirements of the WEEE Directive (2012/19/EU), and therefore they require a circuit for their collection and treatment at the end of their life cycle.	427	69,61	22	6,13	2,20
28	9.1	Flame retardants	The use of flame retardants in furniture products is forbidden. Compliance with the flammability requirements set by current legislation will be secured by the use of alternatives products with lower risk for people and the environment.	424	69,65	18	6,09	1,67
29	21.1	Bioeconomy	The European Bioeconomy strategy identifies the furniture sector as a relevant sector to achieve its objective, setting concrete actions that bind sector companies.	424	67,11	15	6,32	1,63
30	20.1	Forest Based Industries Blueprint	A strategic vision and its needed actions are set to secure the competitiveness of the furniture sector in 2050. Sector companies establish concrete and binding commitments, based on the update version of the study carried out in 2013 (SWD(2013) 343 final).	419	63,54	18	6,60	1,40
31	2.2	WEEE Directive	Furniture sector products that contain electrical and electronic components are affected by the requirements of the WEEE Directive (2012/19 / EU), and specific objectives are set for their recovery and preparation for their reuse and recycling.	415	68,02	21	6,11	2,05
32	1.6	Circular Economy Package of the EC	The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) produces changes in the customer service models, increasing the guarantee period that must be offered to the customer and the time of spare parts availability.	401	65,51	21	6,13	2,07
33	7.2	Formaldehyde emissions	The European Commission decides to reduce the formaldehyde occupational exposure limit below the current value of 0.3 ppm.	399	70,96	18	5,62	1,73
34	11.1	Illegal logging and illegal timber trade	The type of products covered by the Regulation (EU) No. 995/2010 or EUTR is extended, reducing the number of exceptions and extending the scope to recycled products, medical furniture and seating furniture.	397	68,25	17	5,82	1,92
35	3.1	RoHS Directive	Furniture sector products that contain electrical and electronic components are affected by the requirements of the RoHS Directive (EU) 2017/2102, and therefore their components cannot contain substances such as brominated flame retardants (PBDE, PBB) or heavy metals such as lead, mercury, cadmium or hexavalent chromium.	396	74,65	20	5,31	2,15
36	19.1	EU industry policy for Forestry	The EU industry policy for Forestry (COM (2013) 659 final), extends beyond forests, also covering aspects of its value chain, such as how forest resources are used to produce products or services.	396	63,57	21	6,22	1,48
37	15.5	Ecolabels (Type I, II, III)	50% of the furniture sector products have at least one type of environmental ecolabel, either type I, II or III.	383	62,50	20	6,13	1,55
38	15.1	Ecolabels (Type I, II, III)	Customers (final or intermediate customers) positively value that the furniture products have a Type I ecolabel (according to ISO 14024), which has become a competitive advantage.	373	61,51	22	6,07	1,78
39	13.2	Environmental Management Systems ISO14001/EMAS	Customers, final (B2C) or intermediate customers (B2B), value positively that the furniture products supplier in the sector has a certified environmental management system, either EMAS or ISO-14001, which has become a competitive advantage.	367	64,18	20	5,72	2,14
40	15.3	Ecolabels (Type I, II, III)	Customers final customers (B2C) or intermediate customers (B2B), positively value that the furniture products have a Type III ecolabel (according to ISO 14025), which has become a competitive advantage.	365	60,60	21	6,02	2,02
41	9.2	Flame retardants	Consumers appreciates that the product does not contain dangerous flame retardants, thus a specific label of "flame retardant-free" is created to inform consumers the product comply with it.	362	66,67	23	5,43	2,00
42	13.1	Environmental Management Systems ISO14001/EMAS	In Europe, 25% of companies of the furniture sector have a certified environmental management system, either EMAS or ISO-14001 (the number of companies that currently have these systems certified is indicated in the State of art report).	360	62,18	24	5,78	2,00
43	11.2	Illegal logging and illegal timber trade	The number of countries that sign voluntary association agreements with the EU under the umbrella of the FLEGT Regulation (Regulation (EC) No 2173/2005) is significantly increased, covering most of the world countries.	350	64,27	18	5,44	1,83
44	14.1	Ecodesign ISO14006	10% of the European furniture sector companies have an Ecodesign ISO-14006 management system.	334	55,14	23	6,07	1,90
45	14.2	Ecodesign ISO14006	Customers, final customers (B2C) or intermediate customers (B2B), positively value that the furniture products supplier in the sector has an Eco-design ISO-14006 management system, which has become a competitive advantage.	333	58,16	24	5,72	1,82
46	10.1	Energy Directive	Wood furniture and panels waste are used to produce second generation biofuels, which meet the sustainability requirements set out in Directive 2018/2001/EU. Because of this, specific collection circuits are deployed for this waste.	332	57,78	22	5,74	1,98
47	5.2	EPR schemes	A voluntary agreement among the manufacturers of the furniture sector at European level is agreed to define an Extended Producer Responsibility scheme or take-back scheme, which allows the sector products collection, return and treatment at the end of their life cycle, without any cost for the final users.	332	54,72	26	6,06	2,39
48	15.4	Ecolabels (Type I, II, III)	The different Type I ecolabels criteria that affect the furniture sector are unified, facilitating their understanding by customers (for example European label, Blue Angel, Nordic Swan, etc.).	322	56,31	25	5,71	2,18
49	15.2	Ecolabels (Type I, II, III)	Customers final customers (B2C) or intermediate customers (B2B), positively value that the furniture products have a Type II ecolabel (according to ISO 14021), which has become a competitive advantage.	317	56,84	21	5,58	1,93

3. Classification for Instruments Groups

Class	ID	LEGISLATIVE INSTRUMENTS	Forecasted Evolution	IMPORTANCE (PROB x IMP.)	PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)
1	5.1	EPR schemes	A European directive defining an Extended Producer Responsibility scheme or take-back scheme is published for the furniture sector products, forcing to define a system for the collection and treatment of these products at the end of their life cycle, being the manufacturers the ones responsible for covering the associated costs.	534	70	23	7,68	1,79
2	1.4	Circular Economy Package of the EC	The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) generates changes in the productive models of the furniture sector, developing processes and machinery more efficient and with less waste generation, based on new ICT technologies (Industry 4.0).	531	75	16	7,13	1,91
3	7.1	Formaldehyde emissions	The European Commission decides to regulate the emission of formaldehyde of products at European level, fixing a value lower than category E1 (<0.124 mg / m3), currently fixed in several European countries and in the voluntary agreement of EPF (European Panel Federation) members.	496	77	17	6,44	1,92
4	6.2	REACH Regulation	The proposal presented within the REACH Regulation framework is approved to restrict the placing on the market or the use of items that emit formaldehyde at concentration levels equal or greater than 0.124 mg/m3 (equivalent to category E1).	494	77	17	6,43	2,06
5	4.1	ErP Directive	Ecological design requirements are defined, under the eco-design (ErP) directive framework (2009/125/EC), for products not-related with energy, such in the case of furniture sector products. These criteria include aspects of materials efficiency such as durability requirements, reparability, spare parts availability, disassembling easiness, use of materials, etc.	489	68	24	7,23	1,63
6	1.5	Circular Economy Package of the EC	The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) produces changes in the customer service models, increasing the information to be provided to the customer (for example: content of hazardous substances, product durability, manuals for repair and maintenance, instructions for the end of life management, etc.).	488	77	19	6,31	2,05
7	1.1	Circular Economy Package of the EC	The furniture sector is considered a priority in the review of the Circular Economy Package of the EC (COM (2015) 614), developing specific legislation in this regard to increase the reuse and recycling of its products, setting specific objectives of recovery (similar to the current initiative in the plastics sector).	486	67	17	7,23	1,53
8	6.1	REACH Regulation	The REACH Regulation (EC 1907/2006) classifies some of the substances used in the furniture products manufacturing as restricted substances (Annex XVII), in the list of candidates or as extremely worrying substances (substances of very high concern -SVHC-) that require authorization (Annex XIV).	475	74	20	6,47	1,93
9	8.2	End-of-waste criteria	There is a market and a consolidated demand for wood waste that will be used as secondary raw materials in different sectors, securing their quality and traceability.	472	74	19	6,40	1,83
10	1.2	Circular Economy Package of the EC	Wood is considered a priority raw material in the review of the Action Plan in Circular Economy of the European Commission (COM (2015) 614), developing specific legislation in this regard to promote its efficient use and recovery.	457	65	15	6,98	1,63
11	1.3	Circular Economy Package of the EC	Business models of the furniture sector based on servitization are generalized, where the manufacturer owns the product and offers as service the use of furniture to the consumer in exchange of a periodic payment, which covers its maintenance, replacement, etc.	453	64	24	7,02	2,24
12	8.1	End-of-waste criteria	End-of-life waste criteria are defined for wood waste (Directive 2008/98/EC), which will produce quality standards for secondary raw materials (similar to copper and steel scrap currently).	446	68	17	6,59	1,98
13	7.3	Formaldehyde emissions	Consumers appreciates that the product does not emit formaldehyde, thus a specific label of "formaldehyde-free" is created to inform consumers the product comply with it.	428	69	23	6,24	2,27
14	2.1	WEEE Directive	Furniture sector products that contain electrical and electronic components are affected by the requirements of the WEEE Directive (2012/19/EU), and therefore they require a circuit for their collection and treatment at the end of their life cycle.	427	70	22	6,13	2,20
15	9.1	Flame retardants	The use of flame retardants in furniture products is forbidden. Compliance with the flammability requirements set by current legislation will be secured by the use of alternatives products with lower risk for people and the environment.	424	70	18	6,09	1,67
16	2.2	WEEE Directive	Furniture sector products that contain electrical and electronic components are affected by the requirements of the WEEE Directive (2012/19 / EU), and specific objectives are set for their recovery and preparation for their reuse and recycling.	415	68	21	6,11	2,05
17	1.6	Circular Economy Package of the EC	The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) produces changes in the customer service models, increasing the guarantee period that must be offered to the customer and the time of spare parts availability.	401	66	21	6,13	2,07
18	7.2	Formaldehyde emissions	The European Commission decides to reduce the formaldehyde occupational exposure limit below the current value of 0.3 ppm.	399	71	18	5,62	1,73
19	11.1	Illegal logging and illegal timber trade	The type of products covered by the Regulation (EU) No. 995/2010 or EUTR is extended, reducing the number of exceptions and extending the scope to recycled products, medical furniture and seating furniture.	397	68	17	5,82	1,92
20	3.1	RoHS Directive	Furniture sector products that contain electrical and electronic components are affected by the requirements of the RoHS Directive (EU) 2017/2102), and therefore their components cannot contain substances such as brominated flame retardants (PBDE, PBB) or heavy metals such as lead, mercury, cadmium or hexavalent chromium.	396	75	20	5,31	2,15
21	9.2	Flame retardants	Consumers appreciates that the product does not contain dangerous flame retardants, thus a specific label of "flame retardant-free" is created to inform consumers the product comply with it.	362	67	23	5,43	2,00
22	11.2	Illegal logging and illegal timber trade	The number of countries that sign voluntary association agreements with the EU under the umbrella of the FLEGT Regulation (Regulation (EC) No 2173/2005) is significantly increased, covering most of the world countries.	350	64	18	5,44	1,83
23	10.1	Energy Directive	Wood furniture and panels waste are used to produce second generation biofuels, which meet the sustainability requirements set out in Directive 2018/2001/EU. Because of this, specific collection circuits are deployed for this waste.	332	58	22	5,74	1,98
24	5.2	EPR schemes	A voluntary agreement among the manufacturers of the furniture sector at European level is agreed to define an Extended Producer Responsibility scheme or take-back scheme, which allows the sector products collection, return and treatment at the end of their life cycle, without any cost for the final users.	332	55	26	6,06	2,39

Class	ID	VOLUNTARY INSTRUMENTS	Forecasted Evolution	IMPORTANCE (PROB x IMP.)	PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)
1	14.3	Ecodesign ISO14006	The furniture is designed to reduce the impact of used raw materials (use of recycled material, reduction of hazardous substances content, use of wood with lower environmental impact, use of proximity wood, etc.).	561	75	15	7,48	1,61
2	14.5	Ecodesign ISO14006	The furniture is designed to optimize its recovery at the end of its life cycle (to facilitate materials disassembly and separation, modularity for reuse of certain parts, reuse and remanufacturing enhancement, etc.).	537	73	18	7,30	1,61
3	16.4	Chain of Custody FSC/PEFC	New technologies (e.g. Internet of Things - IoT, blockchain, etc.) are used to improve the traceability of wood products and ensure the chain of custody along the whole value chain.	529	75	14	7,04	1,54
4	12.1	Green Public Procurement	The objective that 50% of public procurement tenders for furniture in Europe include environmental criteria is achieved, following the green public procurement criteria set by the European Union or by criteria set in each country.	528	74	17	7,09	1,69
5	16.1	Chain of Custody FSC/PEFC	Customers, final customers (B2C) or intermediate customers (B2B), positively value that the furniture product has a chain of custody certification, according to existing schemes (FSC, PEFC, etc.), which have become a competitive advantage.	512	78	16	6,57	1,96
6	14.4	Ecodesign ISO14006	The furniture is designed to extend its life cycle (more resistant materials/joints, facilitate its repair and maintenance, etc.).	494	70	19	7,09	1,84
7	16.3	Chain of Custody FSC/PEFC	Customers, final customers (B2C) or intermediate customers (B2B), positively value that the furniture product uses wood from forests with certified management according to systems such as FSC, PEFC, or others equivalent, which have become a competitive advantage.	494	78	16	6,36	1,95
8	17.1	Green building certification BREEAM/LEED	The criteria associated with the use of furniture that uses sustainable materials acquires greater relevance in the systems of Green building certification (e.g. LEED or BREEAM), encouraging their use in those buildings that aim to obtain this type of certification.	489	74	17	6,60	1,77
9	12.2	Green Public Procurement	All European countries have developed Green Public Procurement criteria for furniture, either by adopting the EU recommendations or by developing their own criteria (the State of art report shows which countries have developed these criteria in 2017).	490	72	18	6,79	1,56
10	16.2	Chain of Custody FSC/PEFC	70% of the furniture sector products have at least one type of Chain of Custody certification - CoC, whether FSC, PEFC or similar.	441	69	18	6,42	1,77
11	15.5	Ecolabels (Type I, II, III)	50% of the furniture sector products have at least one type of environmental ecolabel, either type I, II or III.	383	63	20	6,13	1,55
12	15.1	Ecolabels (Type I, II, III)	Customers (final or intermediate customers) positively value that the furniture products have a Type I ecolabel (according to ISO 14024), which has become a competitive advantage.	373	62	22	6,07	1,78
13	15.3	Ecolabels (Type I, II, III)	Customers final customers (B2C) or intermediate customers (B2B), positively value that the furniture products have a Type III ecolabel (according to ISO 14025), which has become a competitive advantage.	365	61	21	6,02	2,02
14	13.2	Environmental Management Systems ISO14001/EMAS	Customers, final (B2C) or intermediate customers (B2B), value positively that the furniture products supplier in the sector has a certified environmental management system, either EMAS or ISO-14001, which has become a competitive advantage.	367	64	20	5,72	2,14
15	13.1	Environmental Management Systems ISO14001/EMAS	In Europe, 25% of companies of the furniture sector have a certified environmental management system, either EMAS or ISO-14001 (the number of companies that currently have these systems certified is indicated in the State of art report).	360	62	24	5,78	2,00
16	14.2	Ecodesign ISO14006	Customers, final customers (B2C) or intermediate customers (B2B), positively value that the furniture products supplier in the sector has an Eco-design ISO-14006 management system, which has become a competitive advantage.	333	58	24	5,72	1,82
17	14.1	Ecodesign ISO14006	10% of the European furniture sector companies have an Ecodesign ISO-14006 management system.	334	55	23	6,07	1,90
18	15.2	Ecolabels (Type I, II, III)	Customers final customers (B2C) or intermediate customers (B2B), positively value that the furniture products have a Type II ecolabel (according to ISO 14021), which has become a competitive advantage.	317	57	21	5,58	1,93
19	15.4	Ecolabels (Type I, II, III)	The different Type I ecolabels criteria that affect the furniture sector are unified, facilitating their understanding by customers (for example European label, Blue Angel, Nordic Swan, etc.).	322	56	25	5,71	2,18
Class	ID	OTHER POLICIES AND STRATEGIES	Forecasted Evolution	IMPORTANCE (PROB x IMP.)	PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)
1	18.1	Cascading use of wood	The European Commission reinforces its circular economy strategy by regulating the strategy of cascading use in the furniture sector, promoting the recovery of wood in the different stages of the product, recycling or reusing it repetitively before moving it to the next stage.	487	70	19	6,96	1,71
2	19.2	EU industry policy for Forestry	The activities of greenhouse gas emissions compensation generate a reactivation of forest resources, making necessary their better management that allows greater traceability and monitoring.	440	71	18	6,20	2,05
3	21.2	Bioeconomy	Based on the European Bioeconomy strategy, significant synergies with other sectors of primary production that use and produce biological resources arise, optimizing raw materials consumption and minimizing generation of waste.	431	67	16	6,41	1,73
4	21.1	Bioeconomy	The European Bioeconomy strategy identifies the furniture sector as a relevant sector to achieve its objective, setting concrete actions that bind sector companies.	424	67	15	6,32	1,63
5	20.1	Forest Based Industries Blueprint	A strategic vision and its needed actions are set to secure the competitiveness of the furniture sector in 2050. Sector companies establish concrete and binding commitments, based on the update version of the study carried out in 2013 (SWD(2013) 343 final).	419	64	18	6,60	1,40
6	19.1	EU industry policy for Forestry	The EU industry policy for Forestry (COM (2013) 659 final), extends beyond forests, also covering aspects of its value chain, such as how forest resources are used to produce products or services.	396	64	21	6,22	1,48

9

4. Results Graphic

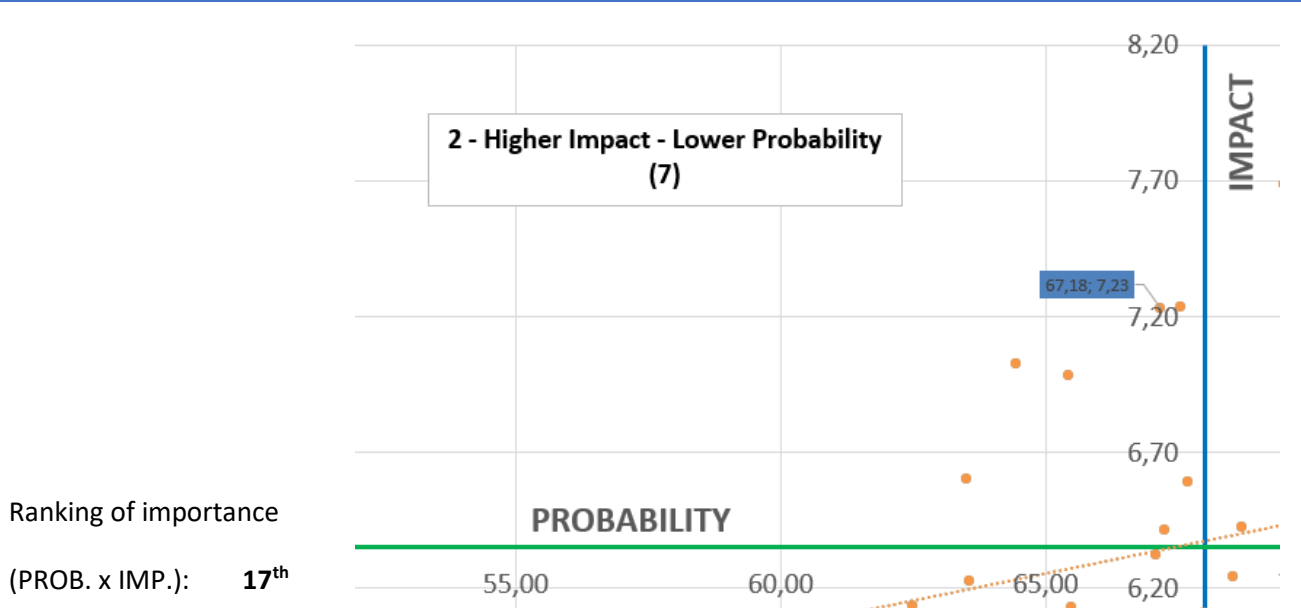## 5. Forecasted Evolution

Forecasted Evolution:

LEGISLATIVE INSTRUMENT

1.1 - CIRCULAR ECONOMY PACKAGE OF THE EC

The furniture sector is considered a priority in the review of the Circular Economy Package of the EC (COM (2015) 614), developing specific legislation in this regard to increase the reuse and recycling of its products, setting specific objectives of recovery (similar to the current initiative in the plastics sector).

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **17th**

Chart showing: 2 - Higher Impact - Lower Probability (7). Data point labeled 67,18; 7,23. IMPACT axis: 8,20 / 7,70 / 7,20 / 6,70 / 6,20. PROBABILITY axis: 55,00 / 60,00 / 65,00.

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
67,18	17	**7,23**	1,53	**485,63**

Survey respondents' comments:

Probability

- This sector seems not to be of core interest for enough number of EU countries interested in setting up specific EU legislation.
- There will probably be new requirements proposed/put in place for the furniture sector, but not sure whether it will be as comprehensive & detailed as for the plastics sector (targets, etc.). Furniture is seen as a priority sector under the product policy initiatives and will most probably be affected by potential new requirements under the new Circular Economy Package regarding the right to re-use/repair/information to be provided to consumers.
- The problem with introducing legal regulations is the need for broad consensus. The European Commission's efforts are good, but the implementation period may be well beyond 2030.
- The Circular Economy Action Plan is at the moment in implementation phase by the states of the European Union. My opinion is that they will act first on the priority sectors and waste streams, and after that they will act on the rest of the sectors.
- Other sectors are more likely to be forced by consumers to change its sustainable practices. The impact of furniture (a long term good) is limited and during its lifetime use there is no impact. This

could change if some important actors (IKEA for instance) create a trend and a consumer's demand.

- not sure by 2030 there will be a shift towards reuse, for sure recycling will be higher,
- Making legislation in EU is extremely time consuming
- In my opinion, it will take longer. Training is necessary. In small factories, the actions will take longer than in large factories.
- I am not so sure it will be considered as a priority. I think it would be rather impacted by other product categories considered more important (e.g. electronics, textile, metals) and the requirements regarding those products / materials could gradually impact the furniture sector.
- Extender product responsibility is applied to the furniture sector (end of life responsibility) with recovery and recycling rates but not at the same level of other main topics as plastic.

Impact
- This instrument will completely change the structure of fixed assets used, the labor / capital ratio and the inventory management.
- upcoming evidence related to new research funding (h2020) shows a growing interest in tackling circular economy in the furniture sector. results of this research and innovation will most likely influence how targets/indicators are set, how some instruments (EPR for instance) might be developed further.
- The way in which furniture is produced and consumed will have to change significantly by 2030 to incorporate the principles of the circular economy: ecodesign, reparability, remanufacturing, servitization, ...
- The transition to circular and low-carbon economy will boost the competitiveness of the European Union furniture enterprises by protecting the businesses against insufficiency of natural resources by sustainably increasing the primary production and conversion of waste into value-added products, enhanced production and resource efficiency. This will help to create new business opportunities, new jobs at all skill levels and innovative, more efficient ways of producing and consuming.
- The revision of the Circular Economy Package in the EU context, will put binding from the regulatory point of view to work on the eco-design of the product during the realization phase, paying a lot of attention to the concept of assembling the components for their subsequent re-use. The articles will have to be realized considering more and more a percentage of renewable material or destined to the recycling phase.
- The raw material wood becomes more and more expensive. Due to climate change, forests are subject to a high level of protection. The quality of the wood becomes worse and worse.
- The implementation of specific legislation to favour the reuse/recycling of furniture products would have a significant impact in the sector, changing the way the products are conceived (more focused on end-of-life) and making necessary the deployment of the required infrastructures to achieve the recycling targets (e.g. recycling/recovery facilities, etc.). Also, it should be needed to define specific collection circuits for this type of waste.
- The impact could be very high. There are many actions to be done that could reduce the use of materials, waste, energy and emissions of toxic substances. In particular, the impact on human health by eliminating toxic flame retardants would have a huge high impact. In turn, it could be an economic benefit for companies in the sector.
- The consumer is going to pay attention to this, so the furniture companies must consider this a priority.
- The circular economy package will have a strong impact in the mobile sector. But only if the actions lead to a substantial change in business models. Acting only on materials (e.g. recycling, ecomaterials) could have much less of an impact.

- Resources scarcity will lead to implementation of policy as Natural protocol...
- It will give considerable design constraints (materials, connections) to reach the objective
- In parallel to other manufacturing sectors, in next decade, waste minimization, recycling, reusing, ... will be specially considered.
- If the recycling will be more of a producer responsibility. There will be new production methods, that include easier ways to disassemble the furniture. Also new logistic system for collecting the used furniture.
- If we assume that the products will be recycled, new demands will be placed on the raw materials and even more on industrial processing. The following questions have to be answered: 1. types of connection with regard to easy separation, disassembly and reuse 2. materials used with regard to pure, efficient separation and reprocessing 3. additives used with regard to their environmental compatibility and safety for the health of workers 4. energy efficiency issues in the recycling cycle
- If this transition happens, it will impact both supply chain and production. It will likely also impact pricing and marketing. The impact in this case can only be big.
- If there is legislation, parties can be enforced to comply. At least the is a warning that this is taken very seriously and will also make parties reconsider their current strategies and marketing policies.
- I think new objectives of recycling and recovering will boost new business models in the furniture sector related with recovery of used furniture, or new designs to facilitate its recycling
- I think it can give a good boost to the conception of the value chains of the furniture and especially to its reputation for the final consumer, showing its commitment to the circular economy.
- I think in 2030 there will be the necessity in all EU countries to have a kind of product responsibility towards recycling, re-use. So there will be an obligation for all furniture companies to develop their products for easy recycling or re-use, ex. it must be possible to separate easily the different kinds of materials and waste. There will also be some obligation to take back products that aren't functional anymore (as this exist already for electronics).
- Higher costs for manufacturers because of manufacturing technology changes and better product design needs as well as because of the potential need to invest in larger warehouse facilities, especially due to recycling requirements.
- Even if it is just "7" I would like to comment. Regulation needs a lot of effort (and money) in whole chain. It could be costly to change way of working, infrastructure, communication channel and so on. It could also influence non-European producers which are strongly connected with European production. In the end I am afraid that costs will increase, what influence whole sector.
- Circular economy in the furniture sector has the potential to create a regenerative and restorative design of interiors by promoting the use of biological materials when possible and the use of technical materials that can be after reuse, repair, refurbish, remanufacture and recycle. Moreover, furniture is the building layer that changes more frequently (generally every 10 years), therefore circular economy can have a strong impact.
- Because some strategies such as servitization affect the core business of companies
- Although furniture is (from a product point-of-view) a rather simple product (not much different components needed per se), a lot will change in terms of what materials to use, bio-materials, changes in use of plastics, but above all business model innovation wise, making a very big change in the direction of servicing clients and closing the loop in a decentralised way.
- Already in the Netherlands we have a mandatory EPR scheme for matrasses, in a few years we will have one for furniture as well. So the government is strongly pressing producers in this direction.
- It is having a big influence in almost every sector, so it will provoke a big impact also in furniture. Green architecture is also a trend, so buildings with better environmental impacts will be furnished with furniture with the same criteria.
- many of the current practices will have to change

- Higher costs for manufacturers because of manufacturing technology changes and the needs of better product design, as well as because of the potential need to invest in large warehouse facilities, especially due to recycling requirements (dismantling and sorting requirements etc). A second option would be changing the business model, but higher costs are also very probable.
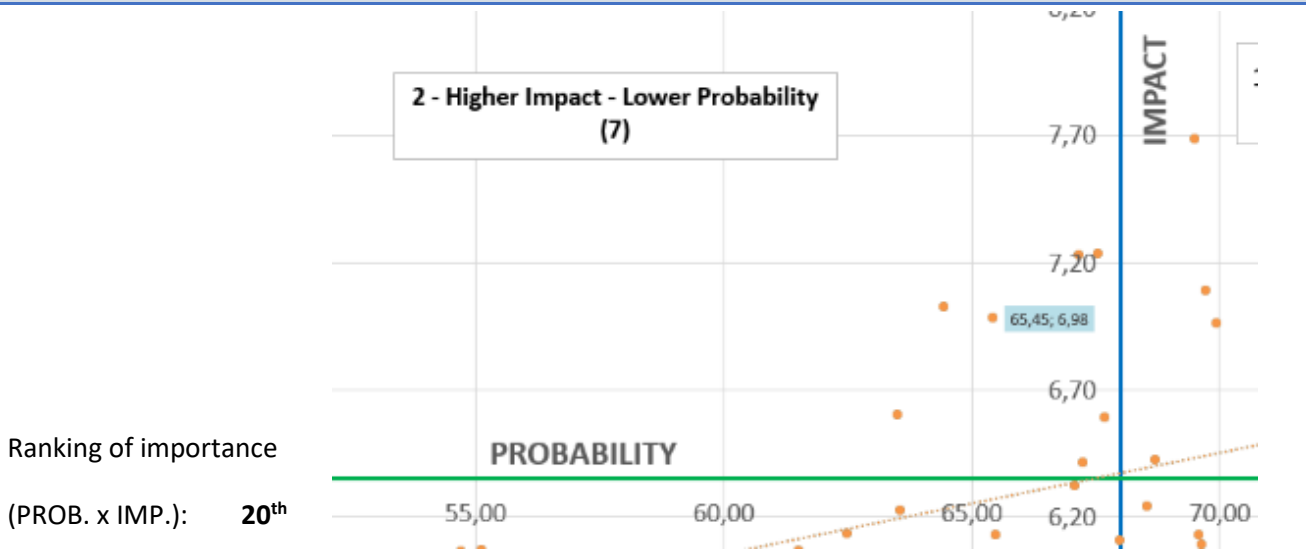
Forecasted Evolution:

LEGISLATIVE INSTRUMENT

1.2 - CIRCULAR ECONOMY PACKAGE OF THE EC

Wood is considered a priority raw material in the review of the Action Plan in Circular Economy of the European Commission (COM (2015) 614), developing specific legislation in this regard to promote its efficient use and recovery.

Summary of statistics:

Ranking of importance

(PROB. x IMP.): **20th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
65,45	**15**	**6,98**	**1,63**	**456,79**

Survey respondents' comments:

Probability

- Wood is not only a raw material. see below.
- There is an abundant amount of sustainable produced wood available and there are other priority sectors that need much more attention from the EU
- There are informal indications from the Commission that the Forest-based industries vision for 2050 (http://www.cei-bois.org/2019/11/18/eu-forest-based-industries-2050-a-vision-of-sustainable-choices-for-a-climate-friendly-future/) will feed into an Industrial policy for 2030 which will be coupled with the Circular Economy 2.0 Action Plan.
- I think the wood sector is not sensible enough (the majority of stakeholders are not oriented to change their business for environmental reason if not forced by a law) the priority raw material for me have to be recycled plastic and recycled fibres.
- I didn't enter any more value because I think there are more critical raw materials. This could shift efforts and resources to different sectors.
- energy target are much stronger than efficient use principles because they are enforced with monetary incentives

Impact

- In many countries, the use of wood and furniture waste has evolved over the years as a result of entrepreneurship and economic knowledge.

- Wood, intended as a renewable material and natural carbon sink, will prove to be the central element not only in the production of furniture or furnishing accessories but in particular in the building sector, as an alternative to materials that have a greater impact on the environment. such as cement and concrete: these elements were recalled in the recent Community update of the Bioeconomy strategy
- Wood is not only a raw material. Trees also provide CO2 reduction. and are important for leisure. This legislation could promote seeing wood as a valuable raw materials worth while to recycle, instead of the low value image it has now.
- Wood is a key raw material to get circular economy in furniture sector
- Wood as a material might be more tackled within bioeconomy policies that directly under CE package.
- The implementation of specific legislation on wood use and recovery, associated to the Action Plan in Circular Economy, would have a significant impact because it is a basic raw material for furniture sector. This would imply the definition for example of recycling targets for wood waste or the requirement of using recycled wood.
- The furniture industry will welcome initiatives to enhance the use of wood as a raw material, however a number of other materials are necessary in the sector to achieve specific functions in a number of furniture products, which will be difficult to replace with wood.
- The challenges are becoming immense - possibly even counterproductive in terms of the application of new production techniques that are still being developed.   With 3D printing technology, new areas of application are opening up for the furniture industry.
- See answer on Q.5: recovery, re-use etc... as long as possible
- Same thing is for the previous topic, really. If this transition happens, it will impact both supply chain and production. It will likely also impact pricing and marketing. The impact in this case can only be big. Of course, the question remains, will the change really happen?
- Same as previous: Recovering and re-using wood will require a (probably decentralized) take-back system, product and production redesign for disassembly and re-assembly, and probably a shift towards either longer lasting furniture (durability), or highly adaptive and modular systems.   Since the recycling of wood is most efficient and effective when the materials remains largely in the same formation, the use of more standardized components might also grow.
- One of the multiples issues will be to find more / new applications to recycled wood.
- Meeting the circular economy demands requires actions in a variety of areas, from the sustainable management of forests, to the more resource efficient use of wood in society. Cascading use of wood resources, with several reuse and recycling cycles, should be encouraged as one of the leading principles in the transition to circular economy. The promotion of innovations and sharing best practices in the field will definitely have a positive impact.
- Many companies see wood as the ideal material to respond to the needs of the circular economy. Its origin is renewable and, if it is used correctly throughout the furniture's life cycle, its end of life may be more respectful than other traditional materials in this sector.
- It will change the rules. It will create new opportunities o loyalty for the brands. It will also have an immediate impact on cost that could generate some negative reaction from furniture manufacturers.
- It will be many branches that want to use wood, energy, construction, furniture, new innovations that use wood. So there is a need for some hierarchy of the use of wood. But also better methods to take care of the material in a more proper way.
- In order to have a significant impact, legislative developments must not be limited to constraints. It is important for legislative action to encourage the adoption by the entire supply chain of the strategies needed to promote the efficient use of wood.

- In Europe there is a growing perception of the need of decarbonisation of the services and products. Renewable materials as wood or derivatives will be preferred in comparison with plastics, composites or other non renewables.
- If you want to keep production in Europe you may have not any other choice
- First of all, food is and will be a key material for the bioeconomy sector. It will be extensively used in the furniture sector and in the construction building in general instead of materials from fossil fuels. Next to it, though, there will be more use of wood-like materials that are created from plant based fibres and resins.   Second of all, the second hand market of furniture will increase strongly keeping in use for longer highest quality products.
- As it is defined now, wood is the only renewable material and it is considered having a negative impact in terms of embodied carbon during the Lifecycle Assessment. However, if not source locally and from sustainably manage forests certified PEFC/FSC, the embodied carbon impact of this material can be comparable to the one of concrete. Furthermore, strategies for the wood end-of-life are recommended with energy recovery and down-cycling as the last option after reuse, repair, refurbish and up-cycling.
- To recover wood in a proper way it will have to use more sustainable treatments, so a lot of actual materials and treatments will disappear and many new ones will be introduced.
- Increased costs as a result of the potential application of extended schemes of the manufacturer responsibility with the aim of having high-quality recycling.
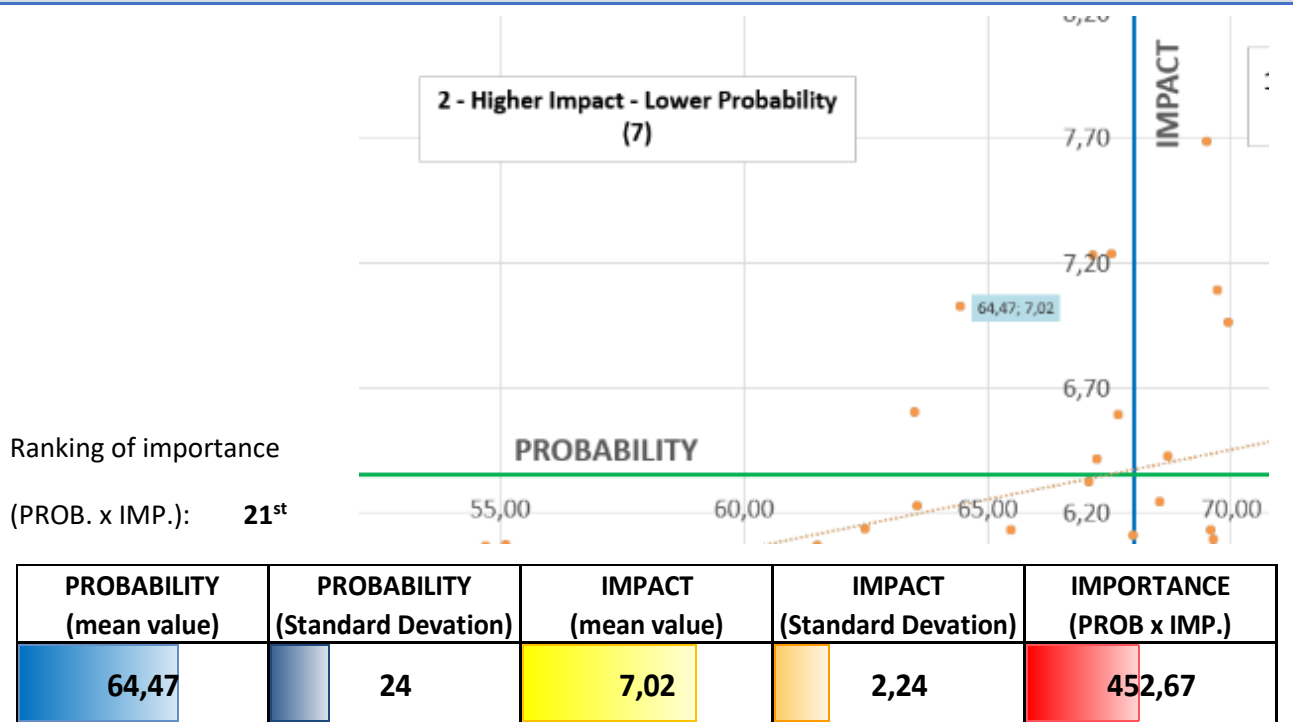
Forecasted Evolution:

LEGISLATIVE INSTRUMENT

1.3 - CIRCULAR ECONOMY PACKAGE OF THE EC

Business models of the furniture sector based on servitization are generalized, where the manufacturer owns the product and offers as service the use of furniture to the consumer in exchange of a periodic payment, which covers its maintenance, replacement, etc.

Summary of statistics:

2 - Higher Impact - Lower Probability (7)

64,47; 7,02

IMPACT

Ranking of importance

(PROB. x IMP.):   **21st**

PROBABILITY

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
64,47	**24**	**7,02**	**2,24**	**452,67**

Survey respondents' comments:

Probability

- Success stories of sharing economy solution regarding physical goods (vice versa to services) are not very popular which makes me very sceptical about this scenario. Unless generation changes (demographics connected with change of lifestyle) speed up, but definitely not till 2030.
- This evolution has great potential, especially in Western European countries. In the countries of the former socialist bloc (Council for Mutual Economic Assistance until 1989), many households own their own home and would prefer their own furniture. Potential can be found in office furniture.
- The trend is correct, but in a sector customer oriented such as Furniture sector, it will depend on the quality of the service and on the balance between cost and benefit related
- The idea is good, but I am not very optimistic in the future of ten years. It's too soon. The answer will also depend on the countries and their culture. For young people who change their homes quite often it is a fantastic idea. Currently many of them already buy second-hand furniture.
- Speaking for the Belgium, I think it's a fairly safe guess to say that the market isn't ready. People like to own their furniture. This similar business model has been attempted by start-up in fashion, non to this point have been successful. Of course, this might merely be a matter of investment: if something is big enough, it will catch on.
- Not so clear in the domestic sector. Prices will remain relatively low and furniture do not require maintenance.   This probability could be higher 60% in the case of furniture for company offices or in apartments   for rent.

- Maybe these business models are not generalized, but majors agents in furniture sectors offer this option to their clients.
- Leasing is in its first steps in the furniture sector but will most probably become more important, especially in the contract market. This will probably be less common in the domestic market.
- It will depend of the regulations and the impact of possible game-changing players (Ikea).
- it will be bigger for contract sector but not for mass market. but with new generation maybe it will be change in 2035-2040...
- I think so because the production nowadays is in such quantity and as result we have lower prices that people prefer to buy and to own the product(furniture)
- I am afraid that people don't want to participate in this kind of programs (pay additional money), especially when they buy low or medium price furniture. That could be also very hard to judge what is "ok" to fix and what kind demolishing is done by purpose just because somebody want to have new furniture. It will be some regulations regarding using those furniture, limitations? In my opinion it could only work with high price furniture, especially made from solid wood. /I am writing having in mind Polish market and mentality/
- Furniture is something very individual and some have a high value for the owner. This future I don't see at all.
- discriminate between household furniture and professional use. For professional use this cs possible, and already happening. For consumer use this is questionable.
- SMEs need extra efforts to see a real evolution

Impact
- This will totally change the way you do business. It just make sense as it aligns the business and environmental needs, building business models that are future proofed. Infinite growth on a finite resource planet is just not possible.
- The transition from the sale of products to the offer of services requires new business models. These models are simple to apply for some sectors (office) while more complex for others (domestic)
- The servitization can transform the way we maintain the value of the furniture in time, increasing the chances to get to a more circular model. Nevertheless, achieving a greater impact (and consequently more attractive incentives for companies to embrace this type of business model) will be depending on the degree of Ecodesign achieved.   Without a ambitious rethinking and redesign of the product, service and customer relationship all the efforts could be not leading to the desired circularity level.
- The implementation of servitization business models in the sector would have a significant impact because it would change the way the manufacturer interact with the consumers. It would be needed a more continuous contact (maintenance services, etc.), define reverse logistics (to recover used furniture) and increase the remanufacturing/refurbishment activities.
- The impact would be enormous since the stream of raw material would be completely under control. it could increase the efficiency in reuse considerably.
- The impact will be important because in case of business model based on servitization probably furniture can be designed for less durability and more "fashionable" because they have to be renewed more frequently. For private domestic use in a property house probably a durable model will be preferred by owners.
- The furniture design will have to adapt to this new business model, with reusable, repairable, remanufactured elements, ... Companies will also have to convert and evolve, since their business will no longer be sell furniture, but sell services
- The first product as a service models in the sector are already coming in with Ikea running pilot project. With more and more young people embracing a nomad/ flexible life the servitization of

furniture will be a great challenge and a great opportunity for companies building high quality products, the only one deserving and actually able to be kept in the loop for longer.   Once the financing of these models will be fixed and the consumers will find the PaaS model as the new normal, companies that have already experimented with it in the decade 2020-2030 will have a great competitive advantage (as it is already happening in the appliances sector with Philips, Bosch, etc.).

- The creation of new companies or changes in business models, specially in those companies specialized in office furniture, will suppose a great impact in the sector. Big companies and SMEs that have implemented circular economy tools for years will be ready for this new scenario. Moreover, it will facilitate the appearance of new start-ups with new market objectives.
- Products as a service will have a considerable impact on the economical position of the furniture sector as funds are needed tot set up such a system. Banks may be willing to provide loans, but this will add extra costs.
- Product as a service model will have a huge growth in the next years. Access over ownership will be prioritized with consequent social and environmental benefits. Product manufacturers will keep the ownership and recover the furniture material and components at the end of their service life. Also digitalization will boost this business model even more, with continuous tracking of materials and components over time, enabled by the use of material passports (developed through BIM, blockchain, RFID sensors, QR codes, etc.).
- New design options must be include to develop more durable products.
- It will completely re-define the business rules and will put at risk the smallest and less dynamic companies
- ikea is experimenting with this business model now. Ikea is a big percentage of the furniture industry, and if they do it the rest has to consider it at least.
- If the transition happens, the impact will be big. Less emphasis will be on the production and more on the maintenance. This means changes for job content, marketing, production, organisation of work and likely also localization of work. (Whereas you may produce furniture somewhere far, maintenance of furniture is more likely to happen close to or at home.)
- IF it happens, it will be disruptive and in that case I foresee very big players gaining market shares and many small and medium producers lagging behind because design won't suffice. it will need a strong logistic systems that sme's don't have.
- I would consider it a general trend for several sectors, including of course the furniture industry (with a rising importance in the B2B).   I am not sure it will necessarily fall under that Policy package however.
- I am sorry, but I cannot see this solution in Poland in 2030.
- factory has to change completely their structure, repair more and produce less (see Martela in Finland)
- Especially in the non-consumer furniture sector, I believe that most of the furniture are provided as a service. Even consumers are more and more interested this kinds of 'leasing' possibilities (cf. arts as a interior).
- Enterprises have to review all the supply chain processes and gain new customer service orientation
- Consuming services rather than end products will definitely support the development of the circular economy. However, at present the aforementioned business model of offering the furniture to the consumers against periodic payment is probably applicable to business clients (e.g. office furniture). Efficient information campaign on these new consumption models at EU, national and regional level is needed.
- Companies will need to significantly change their product design (e.g. long-life, repairable, re-manufacturable etc), value chain (including new strategic alliances for multiple life products, e.g.

return logistics), organisational culture (e.g. sales) and staff roles/remits (e.g. accountants) and client relationship models to meet the requirements for this servitization business model.

- By changing / evolving part of the business model all the associated operations go behind it. Product design, materials, durability, repairability, service offering... will be changed
- Big companies like IKEA are testing this business model. Once it is implemented in the market, the rest of the competitors will see the advantages and try to do the same.
- Because this will have a huge impact on the business models
- Already answered in 9 and 5, the biggest impact of the circular economy imo lies in the shift in business models and customer relations.
- A servitization model for furniture companies will have a significant impact on a number of areas within a company such as: sales team rewards, financial management: customer relations & logistics (reverse). To make commercial success of servitization companies will need to redesign their products to last longer, be readily repairable and updated etc. This will require significant culture changes from the current linear models where companies are not responsible for their products post sales. This may require major shifts in their value to ensure multiply lives for their products.
- It won't happen in every sector but in others it will become the standard business model, like in public buildings or big corporate spaces where to pay a monthly fee for furniture makes a lot of sense.   Not as sure about having servitization in furniture for smaller private spaces or housing, where it's less efficient because less furniture pieces are together.
- rental and leasing are not common practices today and manufacturing companies are not organized to offer these services
- It will modify the current structure of costs and will increase the need of certain skills in the industry. Additional effort (marketing costs) will be needed to increase customer trust in this new business model and a potential shock in the market with shifting demand towards imports should also be considered.

Forecasted Evolution:

LEGISLATIVE INSTRUMENT

1.4 - CIRCULAR ECONOMY PACKAGE OF THE EC

The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) generates changes in the productive models of the furniture sector, developing processes and machinery more efficient and with less waste generation, based on new ICT technologies (Industry 4.0).

Summary of statistics:
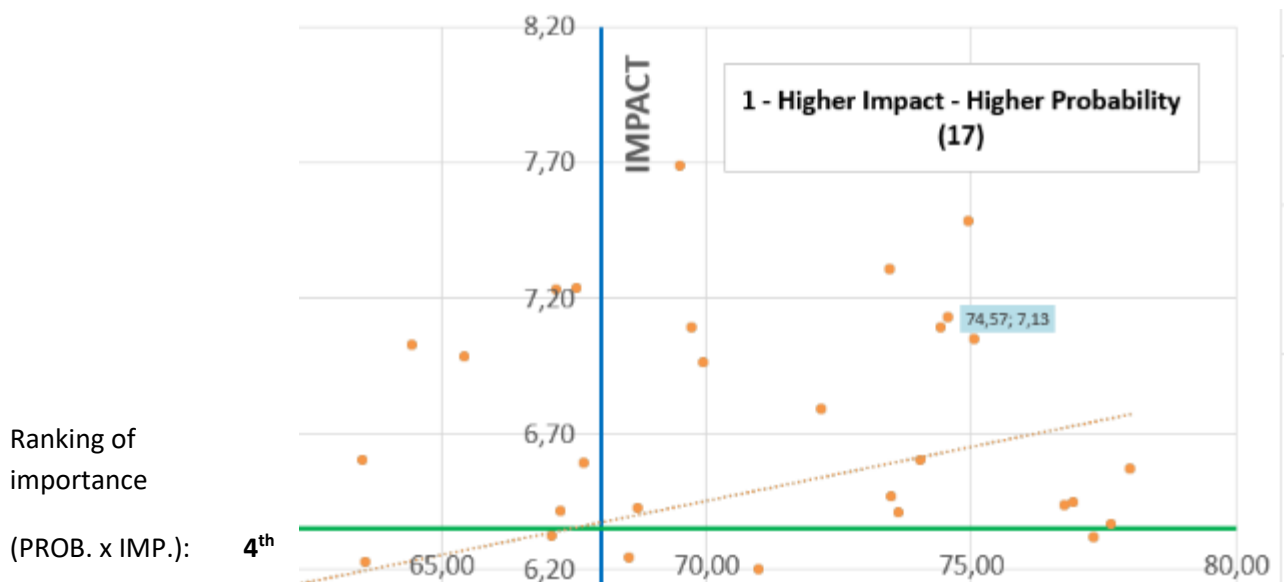
Ranking of importance

(PROB. x IMP.): **4**th

PROBABILITY (mean value)	**PROBABILITY (Standard Devation)**	**IMPACT (mean value)**	**IMPACT (Standard Devation)**	**IMPORTANCE (PROB x IMP.)**
74,57	**16**	**7,13**	**1,91**	**531,30**

Survey respondents' comments:

Probability

- As I mentioned before, the effect of the instrument is mostly based on consensus.
- threshold for applying to these kind of incentives are quite high for the medium Italian furniture company. as we speak, only few furniture companies in Italy used those measures
- only big factory can follow it quickly, more difficult for the medium and small companies
- I do not expect disruptive changes in the productive models of the furniture sector.

Impact

- You can have a 30 to 50% loss rate in production so any improvement will be significantly efficient. But on the other hand manufacturers already try to optimise the losses for economic reasons
- Within the new technologies, miniaturisation and decentralisation of manufacturing might enabling new scenarios where furniture life cycle can be tuned to a local production-consumption environment, promoting a more efficient way of use resources and keep them on cycles.   New technologies (additive manufacturing, sensorisation and big data management) might facilitate new players to enter the market, leading to a higher contextualisation of the design and production and even a higher customisation.   Another aspect in this trend is related with the on-demand feature, that will be probably defying BAU models (based on scale economy and marketing aggressive strategies) leading to a more competitive market.

- To survive as a producer this is needed to achieve competitiveness. When more branches will use the material you need to use it in a effective way and as much as possible in different ways.
- this is where the real innovation takes place. ICT and/or blockchain tech could help make stream of material not only visible and transparent but also provide databases for other use.
- This could have a significant impact on jobs, potentially reducing certain roles within the company, replacing the roles with machines, while requiring different skills and expertise, hence the need for upskilling. It could also have an impact on manufacturing location, with localised batch production growing, replacing global value chains, and their related impacts.
- The whole production system need to change starting from the design of the products that need to be different to better fit the new models.   The producer that doesn't sell the product, but the service and keeps the responsibility of the products and the materials, will have the biggest interest to create modular products or products that can be easily maintained and repaired.   Also the location of the production and the logistic need to adapt to the new models.   Industry 4.0, 3D printing and other technologies allow to produce with less waste and at the same time create unique and personalized products that can be sold at premium price.
- The development of new digital models of business management based on artificial intelligence and domotics will allow companies in the wood-furniture supply chain, with particular reference to the companies of the first processing, to rationalize their business activities with lower management costs, greater management waste and the possibility of opening up and adapting faster to market demands and fluctuations
- The companies in the sector are constantly working on improving their production processes. The Circular Economy Action Plan will tell them from now on where focus on these improvements.
- Technology development is going to significantly adapt the way all products are produced, used and recycled. Being in the CE Package is likely to lead to further research and innovation but businesses are already doing this so whether included or not it will be significant by 2030.
- Saving materials will in the end save costs. However this will also have impact on the freedom of design
- member states with a bigger typical enterprise would perform better.
- it is of key importance to have a competitive production process, and it has to be based on resource and energy efficiency, reduction of waste streams, etc.
- It is clear that new materials made with organic wastes and reused wood products will be developed. As other manufacturing industries robotization will be generally implemented.
- It is already happen in the companies.
- Is already going on, see Industry 4.0. Machines will be more efficient in energy use and will produce less waste thanks to (new) ICT technologies and information on all data (big data) + robotization + automatic selection of panels etc...
- Industry 4.0 could lead to a number of new models for the furniture industry such as redistributed manufacturing in localized, micro factories producing customized on demand products.   This will change the current value changes to more decentralized altering the employment outlook in the sector.   These changes would reduce the GHGs associated with bulky logistics as well as reducing producing and overstocking waste.
- Industry 4.0 and new digital tools will allow for material savings during process optimization. For the manufacturers will be more convenient to develop long-lasting products in the furniture sector so as to make more revenues in the product as a service business models.
- Industry 4.0 and data management is an enabler for servitization
- In order to rethink the ways of producing and consuming, and to transform waste into high value-added products, the EU furniture sector will definitely need new technologies, production processes and business models. The transition to industry 4.0 which has already begun in some member states, will play a key part in this transition and will contribute to the competitiveness of

the EU furniture companies. In this respect, further support of research and innovation initiatives is needed.

- In a period of 10 years, we don´t think that the companies will be ready and sensitive to these changes. For this reason, the implementation of such measures would be enormous. There is the need to change mentalities and financial resources to make the proposed changes.
- Impact of ICT solution will develop new models in the field of waste management and more effective traceability from row materials to the end-product
- If implemented, it will be of great importance precisely on processes and equipment.
- I believe that the evolution of the Circular Economy Package is increasing day after day. The actions to be performed are not very complex.   According to scenario 2030, it could have been adapted in most companies (small and large) and the impact on the use and recycling of plastic packaging would have a great impact.
- For sure, machineries will be updated with new legislation taking for objective to avoid waste generation.   Thus, processes will be modified and updated to the industry4.0 technologies. For instance, the used of additive manufacturing technologies in the design stage or collaborative robots in the packaging will be highly extended.
- For sure industrial processes and machinery are going to adapt to this new reality, with the ones we have now we wouldn't achieve the sustainability goals that we set, so they will evolve radically.
- Additional pressure will be put on the manufacturers due to costs resulting from the need to invest in new technologies and re-skilling of staff, while in factories based on a more traditional approach of production (high craft-oriented approach) additional investment in the management of change and take up of changes by staff are also very likely to occur.

Forecasted Evolution:

LEGISLATIVE INSTRUMENT

1.5 - CIRCULAR ECONOMY PACKAGE OF THE EC

The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) produces changes in the customer service models, increasing the information to be provided to the customer (for example: content of hazardous substances, product durability, manuals for repair and maintenance, instructions for the end of life management, etc.).

Summary of statistics:
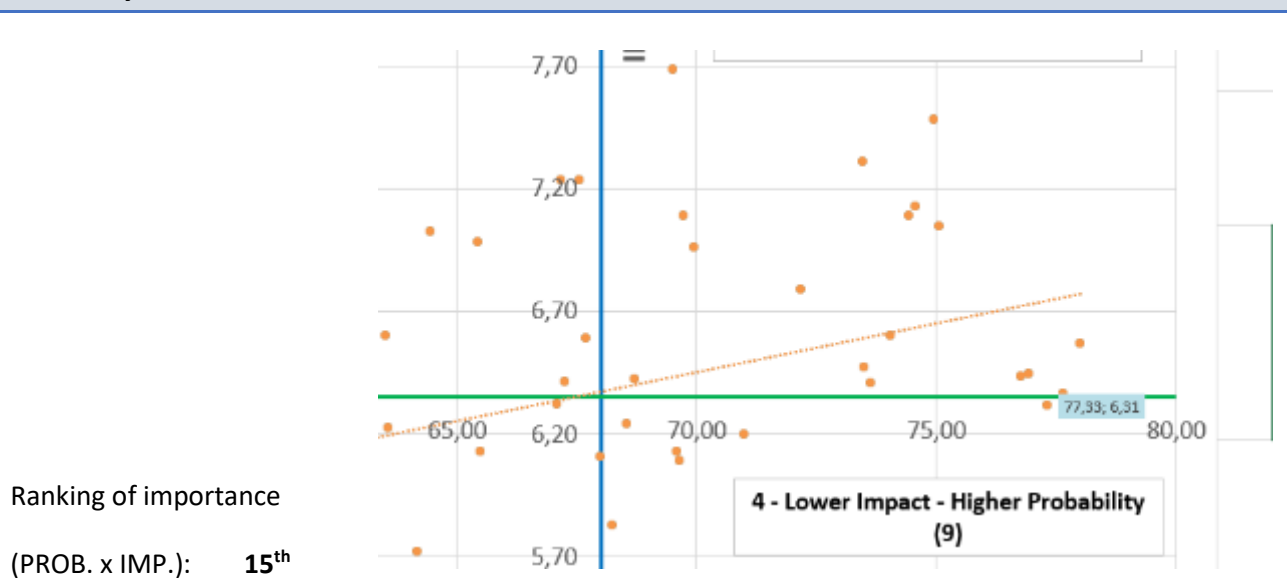
Ranking of importance

(PROB. x IMP.):   **15th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
77,33	**19**	**6,31**	**2,05**	**488,17**

Survey respondents' comments:

Probability
- This will be very probable if the producers are only big companies and the production process is mostly robotize . There is variety in the sector so for example in my country there are more micro and small producers which are going to need longer time to implement those changes due to the fact that they don't have the capacity.
- This is very probable indeed, taking into account that from the leaked Commission priorities we see that there will be a circular economy package which will focus on a number of voluntary and mandatory measures, among which the right to reuse/repair, the tracking of a product so that it can be more easily repaired, etc. Information on hazardous substances, durability, etc. is an important component as consumers can make a difference in the implementation of a circular economy, therefore requirements will most probably be put in place (according to the leaked priorities there will be a cross-Commission proposal on consumers).
- There is no tradition from the customers   to require such information. The biggest concern   of the customer, is first of all the price. Clients are not available to assume the cost of a green mentality.
- The provision of additional information before and after the sale has lower requirements for manufacturers, as well as less financial resources, which makes it easily applicable.

- The process to create awareness takes a lot of time. Consumers are already aware about hazardous substances, but also it is necessary to compete with the take-use model of buying "cheap" furniture and the several different ecolabels and certificates existing in the market.
- it's very difficult for furniture companies to provide reliable information because the production part is rather simple, most of the information has to be asked to suppliers, and furniture companies are different from fashion ones, they are usually smaller than they suppliers, so it's difficult for them to influence them or force them to release information
- it is very probable that producers will provide all that info in labels or additional materials with furniture.
- I think the costumer still has a lack of valuable information to make decisions.
- For large companies that are more automated and that the volume of production is very large, the adaptation to all these actions (information on content of hazardous substances, product durability, manuals for repair and maintenance, instructions for the end of life management, etc.) is something that is already taking place. For small businesses where everything is done more manually, this process is more complicated and it will take time.

Impact
- You should all already have access to this type of information. It just a matter of sharing that information with you customers.
- Users and customers of the furniture sector will be able to evaluate and compare products from an environmental point of view
- this will really influence both producer and end user behaviour. Especially in view of younger generations that have become much more susceptible for this type of product information.so it will have an impact on business models and on marketing.
- This will need more analysis of the content of the product and the chemicals used (paint, lacquers). It will probably phase out the use of some products (like PVC in artificial leather seats) and limit the choice of chemicals (and probably also types of wood) that can be used.
- this is already in progress. In 2030, as technology evolves, it will become even easier to inform the consumer. The problem could be that of the many (too many) messages. Therefore, correct communication is important, possibly on common and shared standards.
- This action is in line with an increasingly aware society, so it reinforces through legislation the need of the conscious consumer.
- these measures impact the companies at design level (need to change design approaches to facilitate repair, deconstruction, etc..).
- The role of consumers and other end users will be in central focus. They drive the development.
- The push for more transparent labels will become stronger.   The decade 2020-2030 will see people demanding more and more about the supply chain and the sources of the materials. This strong shift is already happening in the fashion industry with the Fashion Revolution movement, in the food sector with the Fork Power movement.   Ifixit, Repair Cafè, Fab Lab are pushing to make products more and more transparent and repairable.   The connection between clean and safe furniture and healthy and clean air will be key in the future. Companies not able to keep up with the requests of transparency or repair/end of life instructions from customers risk to be out of business at same point.   Building trust with the customers and a strong customer service will be crucial.
- The need to supply more detailed information to the customers will require to the manufacturers a greater control of the supply chain (to allow the traceability of raw materials, hazardous substances contained in product and used in the manufacturing processes, etc.) and higher knowledge about the product (durability or dismantling tests). Also, it would have effect on the

way the manufacturers communicate with the customers and the marketing approaches (web pages, printed documents, etc.).

- the interesting thing is that this implementation is connected with marketing and communication and companies consider that can be a good selling argument
- The adoption of voluntary instruments, such as the different Eco labels, providing extensive information to customers about the environmental impact of the furniture products is a step forward to achieving the goal. Serious efforts are needed, because at present the implementation of the eco labels in the furniture sector is very low.
- See also answer on Q.5: product responsibility of the manufacturer, also after the "normal" life cycle, ex. for re-use, recycling etc...
- See above
- legislation will push hard on this, results will be poor.
- It is of high importance to support customers to make an educated choice for circular furniture that have low impact on the environment.
- It is a fact that there are a lot of rules that involve being transparent about ingredients and hazard components, etc.
- In my opinion customers still don't have enough knowledge about materials, hazard substances etc. This kind of actions should be done in combine with information marketing on very high level. I am afraid that still for the most of customer price is the most important (and in will probably slightly increase due to requirements, preparing and sharing information).
- In addition to the mentioned indicators information regarding GHG emissions will be included. All the emissions along supply chain, manufacturing and distribution will be tracked and detailed for the different steps during life cycle.
- Impact is very strong because it needs a lot of new technologies for ex. block chain.
- E.g. the final consumer won't repair a furniture just because he/she has a manual explaining how to do it. Information is needed but is not enough.   Design for reparation, availability of spare pieces, are also important.   The driver is the shift on the business model, not providing more information to the client.
- Both the normative market and the market based on the figure of consumers appears to be increasingly attentive and sensitive to the social and environmental impacts that the products they purchase generate: in this perspective there is much more attention to detail and request for details requested on market. The future will increasingly direct the producer to clearly indicate to the consumer the characteristics of the article / product (durability, content of chemicals ..)
- Being able to know "what's inside" is absolutely key to a circular furniture model not only from the customer perspective, allowing them to be informed about chemicals and other elements that might be harmful, but also for the whole supply chain.   The creation of a material and products "ingredients" label or passport might lead to a better understanding of products and their interactions with all the stakeholders.
- All of the information related to materials composition and VOCs is an important topic becoming more relevant in the latest years. In the US even more than in Europe, the use of healthy and safe materials is recommended. Moreover, the content of hazardous substances, product durability, manuals for repair and maintenance, instructions for the end of life management are relevant information that can be contained in the so called "material passport".
- Customers want every day more information and want to know exactly what they buy, so it should be provided in a clear and transparent way or the customer will probably choose a different option. Also important, a product that has big differences/innovations with the standard ones in the market needs extra information to explain how to use it properly.

- The current legislation on consumers protection already requires manufacturers to provide much of this information

Forecasted Evolution:

LEGISLATIVE INSTRUMENT

1.6 - CIRCULAR ECONOMY PACKAGE OF THE EC

The implementation of the actions proposed in the Circular Economy Package of the EC (COM (2015) 614) produces changes in the customer service models, increasing the guarantee period that must be offered to the customer and the time of spare parts availability.

Summary of statistics:
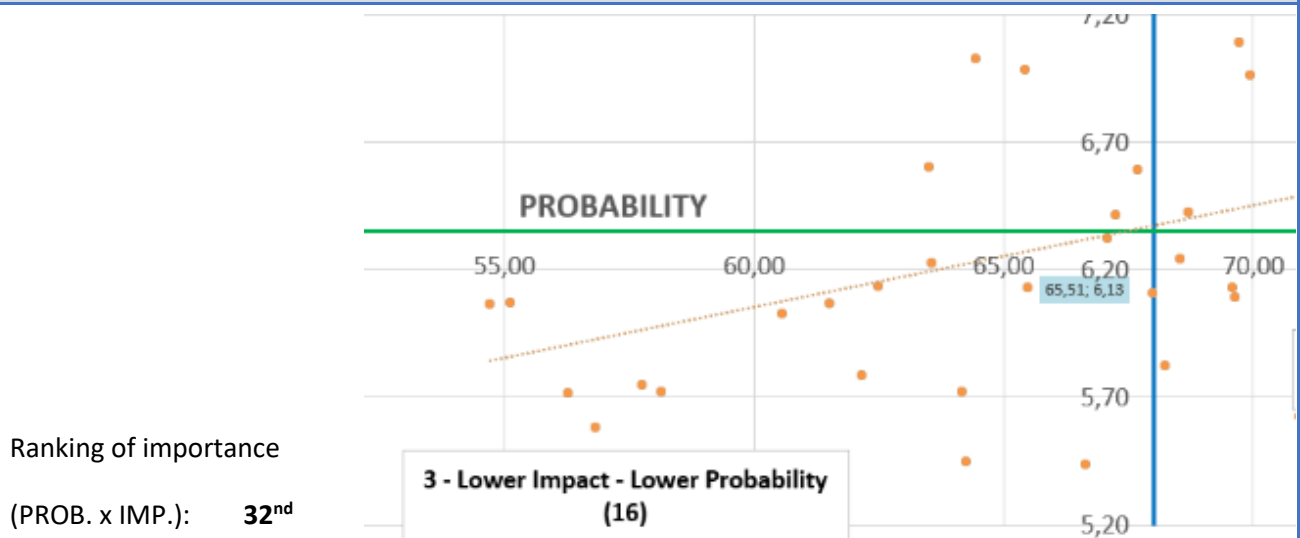
Ranking of importance

(PROB. x IMP.):   **32nd**

3 - Lower Impact - Lower Probability (16)

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
65,51	**21**	**6,13**	**2,07**	**401,25**

Survey respondents' comments:

Probability

- I do not think that enough number of stakeholders is interested in this kind of solutions. It would require a definite change of focus of economy.
- Similar requirements have been introduced before. Manufacturers will adjust to the changes without investing too much.
- this will be even more possible if we move from the sale of products to the offer of services (previous question)
- The market for lower prices products is not justifiable for the costs. It is higher price to repair than to buy new more fashionable products. For high value products this relationship with the company would have to last several years.
- My answer is similar to the previous one. I think that this will be harder for the micro and small companies. Due to the fact that they don't have much capacity.
- if leasing furniture becomes more popular, then repairs are in the hands of the business, not the customer.
- I consider that only some actions proposed in the EC Circular Economy Package (COM (2015) 614) are possible to implement. For example, customer service models could be improved. However, other actions such as increasing the warranty period and spare parts availability time could be difficult to apply in the furniture sector.

- Currently, most companies were already offering these type of services. From now on, it will help all the companies comply with this warranty period.

Impact
- Increasing their importance to society will make them recognizable as a comparative advantage. After-sales service and spare parts availability will add more value and increase the competitive advantage of manufacturers.
- This will improve the modularity, reusability, reparability and recyclability of the products. You'll have to design for the circular economy.
- This will change the way furniture is designed, going to more ecodesigned items
- This action will force companies to improve the quality of their furniture components with the aim of not having a large stock of spare parts.
- There is a competition of big companies on increasing the service their offer to customers. It will be the opportunity to boost other companies, by little-by-little
- The lifetime of furniture products can be extended by increasing their legal guarantee period. This will contribute to products' durability and reparability, which is expected to reduce the consumption of these products. However, the implementation of this measure into practice will be challenging.
- The lifespan is the most important criteria in the environmental impact assessment of a furniture so any additional year of use will be very beneficial from an LCA point of view.
- The increase of the guarantee period and the need to make available spare parts during a period of time will impact the sector because it would be needed to define collection and repair systems, and the logistic needed to stock and deliver in due time the spare parts (warehouses, etc.). It would be needed also to define if the repair systems are managed by the manufacturer itself or by authorised technical services (agreements, certification, etc.).
- The guarantee period will become longer in the product as a service model. Warranty will be sell to guarantee product maintenance and repair over time. I see the guarantee period in the future to coincide to the service life of the product (at least in the furniture sector).
- strong incentive to market products with excellent long lasting quality.
- Since these extra services will be part of the entire shift in business model, the impact of this part in and off itself will not be such a big difference. For the companies who don't fully make the shift though, this driver might become a high cost that will eventually force them to also shift business model towards the ce.
- seems not to be a real burden for the industry. As they own the product (PAAS), they have the benefit if the useful lifetime of the furniture can be prolonged
- It will have an impact on manufacturers, stock and infrastructural cost and management. This could also empower different business models such long term rent and re-purchase of goods.
- it is a matter of cost calculation en the possibility for stronger bonds with the customer. It will also become a competitive advantage if the producer gets this right and is capable of communicating this strongly with the end user.
- It emphasized new tools and mechanisms for customer value creation.
- If this transition happens it could have domino effects in all directions - it will be more difficult to sell 'crappy' furniture, likely, the base price of furniture might increase - meaning that the perceived 'correct' price for furniture by clients will increase - meaning that local players could gain advantage over big players such as IKEA - at the same, IKEA won't have much trouble providing standard parts, as they've been designing lean with standard parts for a while now - when prices increase, opportunities for leasing business models are bigger - we need to foresee how this will pan out in the second hand market - will furniture have to carry identity cards? -

when prices increase, we need to bear in mind how this will impact the most financially vulnerable in our society. The transition has to uplift them, not exclude them more.

- Greater product guarantees will require more robust furniture design, with greater availability of spare parts.
- companies will follow these requirements because it has an effect on both private and professional customers and could start a competition towards the longer guarantee.
- Companies need to test furniture in a different way and prepare for having spare parts available for whole period - what means additional costs. In the same time, customers are used to 2 or 5 years guarantee and I think that they will not come back after this period of time.
- An increased guarantee period is not necessarily connected to a longer life of a product. The durability of products is much more important.
- Because for the costumer it will be easier to extent the life time of the product, than to buy a new one.   And this will encourage them changing the existing consumption model.
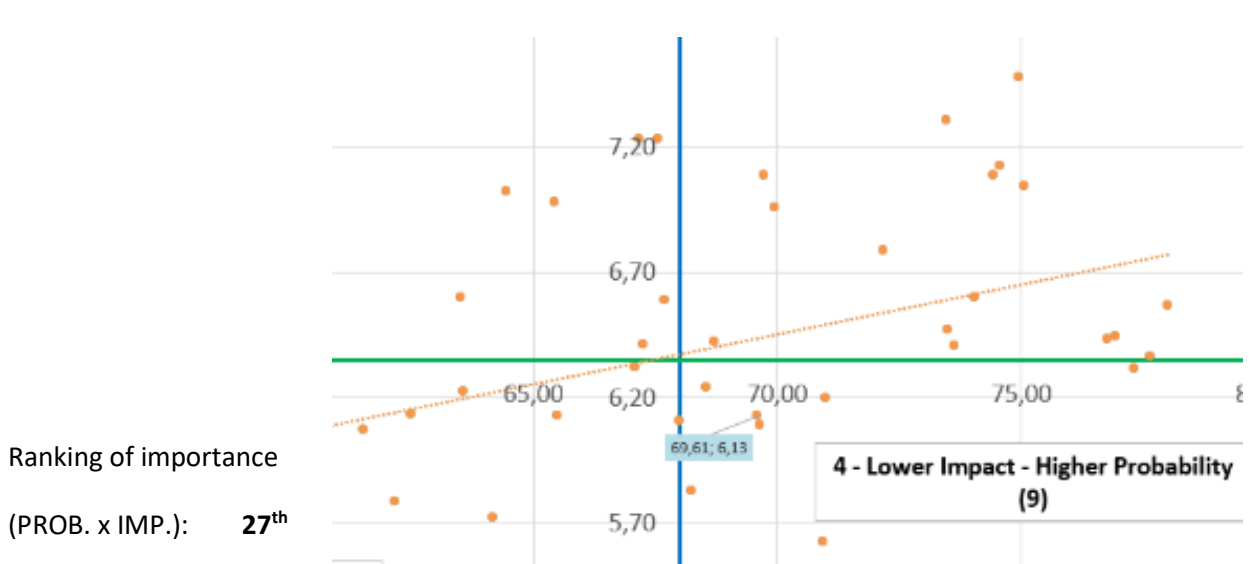
Forecasted Evolution:

LEGISLATIVE INSTRUMENT

2.1 - WEEE Directive

Furniture sector products that contain electrical and electronic components are affected by the requirements of the WEEE Directive (2012/19/EU), and therefore they require a circuit for their collection and treatment at the end of their life cycle.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **27**[th]

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
69,61	22	**6,13**	2,20	426,53

Survey respondents' comments:

Probability

- Regulations on electronic waste at national level will be strengthened. Development is in this direction and the consensus here is secured by the development of environmental thinking in consumers and producers respectively.
- This is already the case for some products
- There are already collection circuits for waste electrical and electronic equipment that can be used for the furniture sector.
- The WEEE directive has been in force for several years. Its appearance in the circular economy action plan will strengthen its position and hopefully there will be greater vigilance in the market for compliance.
- The percentage of electrical and electronic components in the furniture is residual. The financial value of this market is low. Therefore, it will not generate new market circuits.
- Please note that this question was quite unclear. Ideally this would have already happened, given that e-waste is extremely hazardous. However, it is unlikely that furniture will fall under the WEEE directive. Given the current available information and relatively low pace of change, and given WEEE has been in place for so long, it is difficult to gauge what the likelihood is. However the integration of IoT and charging points could be enablers of change. However if the CE Mark and ecodesign directive was applied to furniture this could change things. At the moment this is not seen as an immediate priority.

- Placement of furniture into the WEEE directive does not seem to be a high priority within the EC. Combined with the lack of requirements of CE marking for furniture it does not seem likely that furniture will come under the WEEE directive.
- most MS managed to keep furniture items as a whole out of the scope of WEEE and only the electric part in the scope, so only the producer of the motor or electric device has obligations. but furniture products will be more and more connected. probably WEEE regulation will end up affecting them.
- If we refer only to the electrical and electronic devices found in the furniture, the quantity is very small and it would not make sense to create a circuit for their collection (Low probability) . However, if we think also of the other materials that are part of the furniture, a circuit for their collection is very necessary in a short period (High probability)
- If this circuit is not working properly for pure EEE manufacturers and distributors I find it hard to expand and work properly in 2030 for furniture sector products that contain electrical and electronic components
- I think it will be necessary to ensure its capacity of recycling, but not ensuring a circuit for its collection and treatment.
- Depend on incentives or instruments forcing customers to that kind of behaviour... cooperate with supplier after 20 and more years of using products...
- Another middleman's between producers and customers will be needed. This one who will collecting those accessories, what could be very expensive. It will increase prices of final product and give some grey area in behaviours due to high cost.

Impact
- Electronic components make up a relatively small fraction of the engineering design of most furniture.
- Will be a normal activity in the deconstruction / disassembly of the product. The removal of the electrical components will be part of this disassembly process
- WEEE generation per capita is increasing constantly and it is forecasted to get even worse in the coming years.   The problem is not only related to the waste generated but also to the struggle for raw materials, so there will be an increasing pressure to control and recover EEE, and all the elements, such furniture, connected to them. This will legal framework will be regulating a situation that will be aligned with market intentions and needs.
- WEEE collection and appropriate treatment is a priority. If furninte includes EEE, they will have to follow the sema rules than other EEE producers
- The strict regulations on electronic devices will generate a problem at the moment to increase their production and how to manage as a waste.
- The emergence of a collection circuit for items in the wood-furniture supply chain that have electrical and electronic components, rather than at circuit management level (already efficient for WEEE) will have to be incorporated in educating and informing entrepreneurs on the technical-regulatory obligations to which they may have to be subjected: a more than high impact based on the need to train entrepreneurs in the sector in this field.
- The current mechanisms for dealing with furniture at the end of life are not suitable for doing this.
- The creation of a circuit for the collection and treatment at the end of their life cycle of furniture will impact a lot reducing waste, reusing row materials and reducing environmental impact.
- See also Q.5: generalized product responsibility of manufacturer, also at the end of the "normal" life cycle
- It would happen the same that in automotive sector. Furniture will implement more and more EEE equipment that at its end of life will require separate collection.

- It will affect only a certain quantity of products and the objective is that the electrical part can be easily separated from the rest
- It is partly already done
- It is important to separate different materials to facilitate effective recycling.
- In Italy, the WEEE collection is already promoted and pushed by some consortia (associations of recycling companies operating in the electric and electronic equipment sector) such as Remedia, CDC RAEE and Ecodom.
- If WEEE directive affects to some furniture products that contains electronics, it would have a significant impact for those products affected because the manufacturers would have the responsibility on the product until its end-of-life, making necessary to define selective collection system (by the manufacturer or by integrated systems). The effect on the global sector would depend on the number of products affected (it is foreseen a higher number of products that include electronics in the future, but won't be majoritarian).
- i don't think this will change the way the companies design their products. maybe just help with disassembly.
- could be even simpler if there was a greater culture and knowledge on design issues for sustainability (e.g.: Design for disassembly)
- already happening in some countries. including a sort of reward for the end user. but also an extra cost: removal contribution.
- Every product with electric components will have to facilitate the treatment of these dangerous components, it will also happen in the furniture sector. Not sure about having an specific circuit for furniture or if it will the a common one with the others.
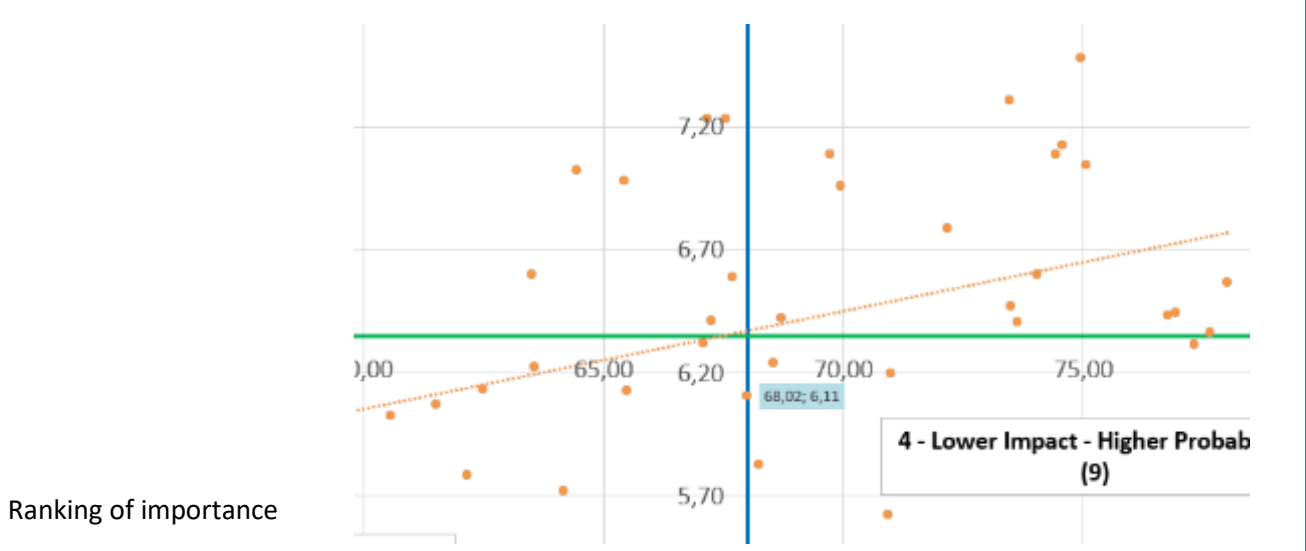
Forecasted Evolution:

LEGISLATIVE INSTRUMENT

2.2 - WEEE Directive

Furniture sector products that contain electrical and electronic components are affected by the requirements of the WEEE Directive (2012/19 / EU), and specific objectives are set for their recovery and preparation for their reuse and recycling.

Summary of statistics:

Ranking of importance

(PROB. x IMP.): **31st**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
68,02	21	6,11	2,05	415,36

Survey respondents' comments:

Probability

- They will be treated in the same way as the rest of WEEE (with specific objectives for their recovery and preparation for their reuse and recycling)
- The procedures of recycle and reuse of such components will integrate the already existing schemes of treatment of electrical waste.
- The consideration of end-of-life strategies can affect furniture manufacturing companies when considering which electrical and electronic devices to include in the life cycle.
- See previous answer. However, as Internet of things and wireless charging becomes more integrated into furniture this might quickly the importance of WEEE directive for the furniture sector. This is impossible to assess under the current CE package.
- Ideally this would have already happened, given that e-waste is extremely hazardous. However, it is unlikely that furniture will fall under the WEEE directive. Given the current available information and relatively low pace of change, and given WEEE has been in place for so long, it is difficult to gauge what the likelihood is. However the integration of IoT and charging points could be enablers of change. However if the CE Mark and ecodesign directive was applied to furniture this could change things. At the moment this is not seen as an immediate priority.
- I am afraid that prices and effort could be too high for customer to use this solution.

- As I said in the previous question, the quantity of electrical and electronic devices found in the furniture is rather small. Only if special places for dismantling and reuse of all material are created, electric and electronic devises could be separated.   This centers will be created in a near future but perhaps later than 2030

Impact
- they will buy compliant components, put into the product and sell it. don't see a reason for change their way of producing thing because of weee
- the same requirements will be applied to this sector
- Similar to the previous point, the effect on the affected products will be high (collection system of end-of-life products, specific recycling scenarios, etc.), but the effect on the global sector will depend on the number of affected products (it is expected an increase in the number in the future, but won't be majoritarian).
- See also Q.29 on product responsibility of the manufacturer after normal life cycle
- Same as previous questions
- Reuse and recycling are and will be even more key actions in the WEEE sector. I am aware that some of the WEEE that US and Europe citizens throw away for recycling are then sold illegally to Africa countries for reuse. This is good for circular economy, but it shall be done in a legal way.
- More logistic systems and ways to handle the recycling.
- Legislation will move on to press producers in the direction of recovery, reuse an recycling.
- It is already happen
- is a bit more difficult since it requires special skills and/or repair shops
- I don't see any problems with the recycling. For reuse I think it is more difficult (cultural and legislative aspects)
- Great impact of this in the implementation of electronic devices in smart furniture or wood products.
- Future designs will have to consider the possibility of separating electrical and electronic components in a simple and economical way.
- Activity is already happening but it will need to scale up.
- I do not believe that any such activity exists to date
- it is of key importance to foster preparation for reuse before recycling, in order to maintain the value of products the longer on the market

Forecasted Evolution:

LEGISLATIVE INSTRUMENT

3.1 - RoHS Directive

Furniture sector products that contain electrical and electronic components are affected by the requirements of the RoHS Directive (EU) 2017/2102), and therefore their components cannot contain substances such as brominated flame retardants (PBDE, PBB) or heavy metals such as lead, mercury, cadmium or hexavalent chromium..

Summary of statistics:
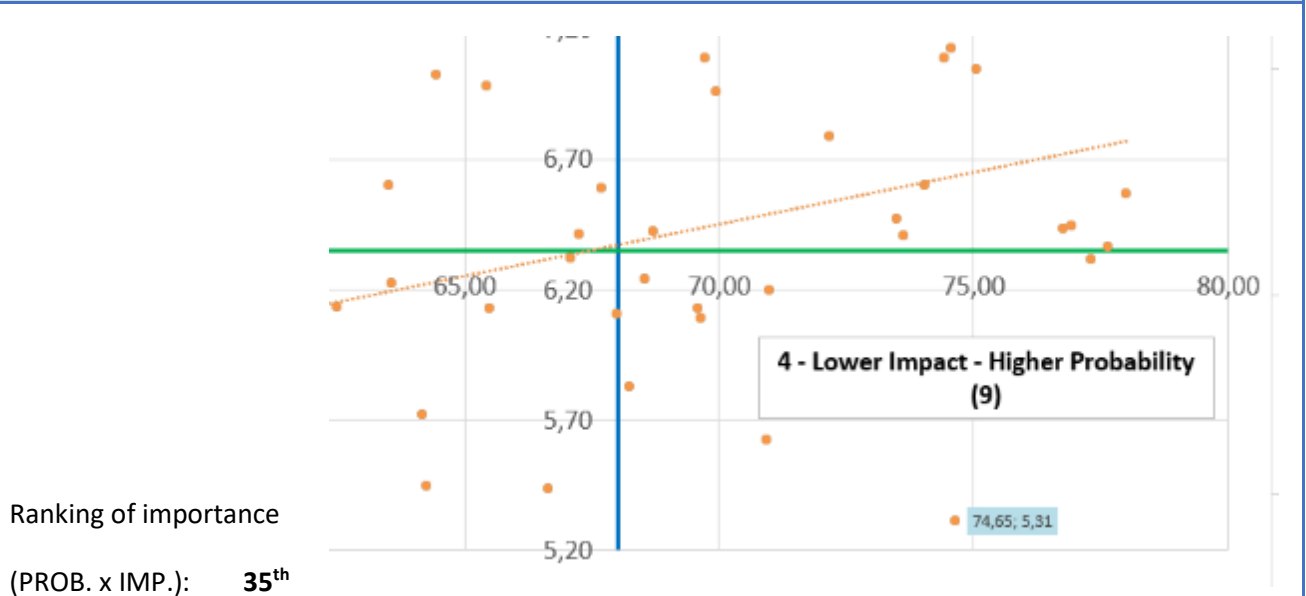
Ranking of importance

(PROB. x IMP.):   **35th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
74,65	**20**	**5,31**	**2,15**	**396,49**

Survey respondents' comments:

Probability

- Consumer attitudes are against the use of such substances, so development is in this direction.
- While it is unlikely that furniture will fall under the RoHS directive one would expect all electronics components placed on the EU market to currently comply with the directive. Thus RoHS applies to the components, not the furniture.
- They will be treated in the same way as the rest of WEEE (their components cannot contain certain substances).
- The RoHs directive has been in force for several years. Its appearance in the circular economy action plan will strengthen its position and hopefully there will be greater vigilance in the market for compliance.
- The EU has long been pushing electrical and electronic companies to reduce / eliminate toxic substances creating new legislation. Right now, most of the electrical and electronic components have replaced the toxic compounds with less toxic ones.
- Placement of furniture into the WEEE directive does not seem to be a high priority within the EC. However, RoHS applies to all electric and electronic components used or placed on the European

market. The lack of CE marking requirements for furniture will risk imported furniture contain banned substances.

Impact

- Removal of such substances can lead to an increase in unit costs and cost effectiveness. Manufacturers have to rely on R&D and advertising costs.
- Will limit the choice of electronical components in furniture and wil add extra costs to these components. Flame retardancy is extremely important (not only for the electronical components but also for upholstery!)
- This sector will have the same requirements than other EEE producers
- There is a strong pressure on health issue from public opinion. NGOs and consumer associations are claiming for a safer and healthier products and environments, this would generate more pressure on market players and institutions to take action.   As it is happening in other sectors such as food, toxics are starting to be at the spotlight, and this is going to increase in the coming years.
- The restrictions on the use of chemicals within electrical and electronic equipment will become increasingly stringent and will widen the range of substances that will be subject to restrictions: companies in the wood-furniture sector will be called upon to find possible solutions regarding their products from to put on the market, in particular when the chemical subject to restriction is important for the sector regulations (eg cadmium as a flame retardant for office articles)
- The provisions of the RoHS Directive do not directly apply for furniture products and/or their components but should be taken into consideration when electrical and electronic parts are integrated into them.
- the impact in terms of product innovation will be very strong and the industry will have to adapt the manufacturing process to these new solutions.
- some difficulties for EEE suppliers who have not innovated and adapted their standards to legislative developments
- Securing the use and facilitating effective recycling are important value drivers.
- like weee, no effect. only in case some kind of component won't be available anymore there could be and effect on the furniture sector.
- I am supportive of the European legislation concerning RoHS and I hope in the future also other countries external to Europe will adopt these safety measures. At the moment, while Europe is pushing towards stronger rules and more restrictive legislation for the health and wellbeing of its citizens, other furniture sector products manufactured abroad will arrive to Europe, being not compliant with the RoHS legislation and neither controlled at our borders.
- for most of these products alternatives are available already or are being developed. In addition: there is no choice consumers no longer accept dangerous substances. See the PFAS debate and legislation in e.g. The Netherlands and Scandinavian countries
- Although a lot of hazardous substances are already (to some extent) regulated, the policy will become more stringent.   Probably the policy will not rule out all these materials, but change more in the direction of labels like C2C where the proxemity of the user (and recycler in a ce-model) to the materials defines its toxicity-score.
- All furniture including EEE has to take care of RoHS Directive.

Forecasted Evolution:

LEGISLATIVE INSTRUMENT

4.1 - ErP Directive

Ecological design requirements are defined, under the eco-design (ErP) directive framework (2009/125/EC), for products not-related with energy, such in the case of furniture sector products. These criteria include aspects of materials efficiency such as durability requirements, reparability, spare parts availability, disassembling easiness, use of materials, etc.

Summary of statistics:
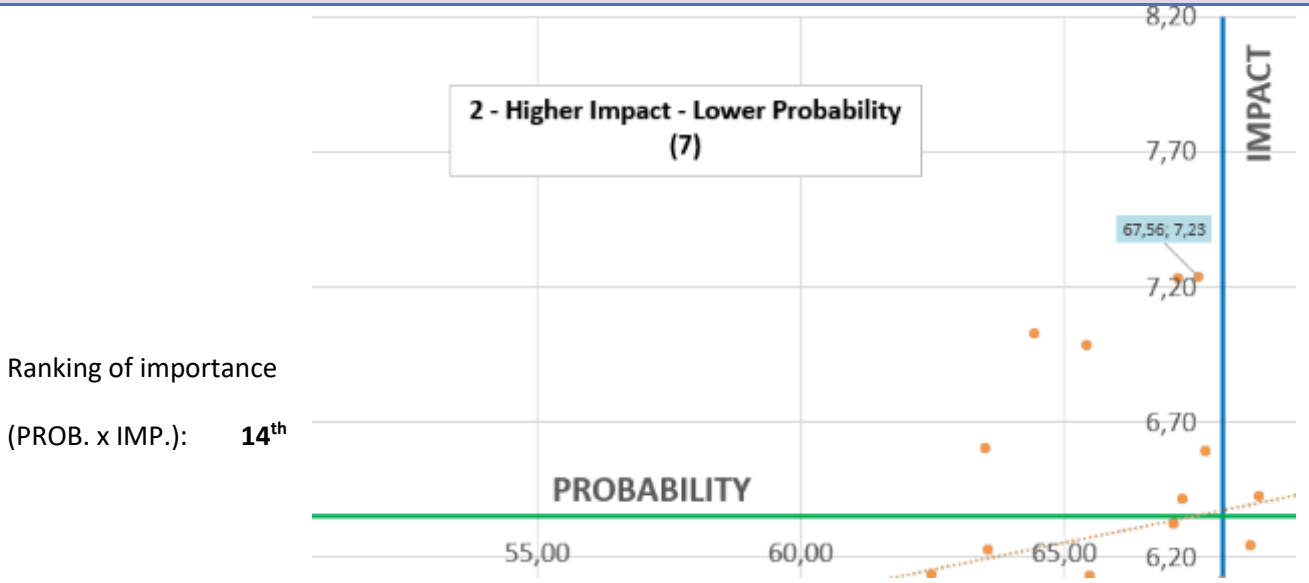
Ranking of importance

(PROB. x IMP.):   **14th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
67,56	**24**	**7,23**	**1,63**	**488,73**

Survey respondents' comments:

Probability

- Lobby interested in such solutions has not have a critical mass yet, and probably till 2030 also.
- The resistance to change will be very high. Restricting certain materials will remove some of the competitive advantages in the augmented product.
- Timings are too ambitious given the degree of change required to enable this by 2030.
- There are many other dryers really affected by the ErP directive, so I don't think we start to generate eco-design requirements for furniture, based on this directive.
- The ErP directive is still far from regulating the ecological design requirements of furniture.
- The CE package is prioritizing collection, reuse & recycling rates.   The current revisions of the Ecodesign Directive are focusing only on energy related products. It is still unclear what material efficiency will mean in implementation for these products or what the impacts will be. It is unlikely new products will be included in the Ecodesign Directive until the impact of these changes is assessed.   To bring furniture into the Ecodesign Directive by 2030 seems highly ambitious for a sector that does not even require the CE marking.
- One of the actions to be implemented in the sector is the durability of the products. However, I suppose it is related to the quality and price of the product.(Low probability of implementation) Disassembling easiness could be an important aspect to include in the sector. It will help to reuse

the materials at the end of life; but I guess the manufacturing cost will increase. (Low probability of implementation)   Other actions such as repair capacity and availability of spare parts are more complicated to apply due to the price of labour.(Very low probability of implementation)

- It will depend on the sanctions and fines + the customer requirements and demands. Another factor might be the strong players in the furniture sector and its game changing roles and marketing strategies. If this happens, smaller and less dynamic producers could be forced to implement new processes.
- furniture in not under ecodesign directive at the moment and i don't think it will be soon. but many principles would spill out and affect the furniture companies towards different tools, like EPR, and GPP.
- At present, no provisions of the Ecodesign Directive directly affect the furniture products. However, due to the increased integration of electric and/or electronic components into furniture products, some furniture components may fall within the scope of the Directive. Further ecodesign requirements, relevant to the circular economy principles, such as upgradability, durability, and recyclability, should be developed.

Impact

- Potential impact will be high but only if it is introduced about which I am not convinced.
- Substitution of commonly used materials would lead to lower price margins. Many manufacturers will be under heavy budgetary pressure.
- Will be a normal evolution in all industrial sectors to make the products more durable, repairable and use more sustainable raw materials
- we need more training and knowledge. Today, many designers believe that they can reduce their environmental impact by acting only on materials. We need to spread culture and tools on life cycle approach and design (product and service) for sustainability.
- This is one of the main value propositions for consumers in future.
- This directive is at the core of circular economy from a product perspective. its evolution will obviously strongly impact the furniture sector.
- These criteria are not an obstacle in many case, after a first phase of transition and adaptation.   All these elements of eco-design can be turn in a chance for furniture producers to build trust with their customers and have them coming back in the long run.   Please consider also that can be applied to furniture what it is at the moment in the construction as "building as material bank - BAMB". Furniture that building in a way that are easy to disassembly to take back precious materials could be useful in the future for a company offering furniture as a service. With the only "problem" that if a company puts in the market low quality materials, at the end of the (first) life low quality materials are going back to the company and the company has to take care of it.
- The products placed on the market can no longer be separated from possessing characteristics of reduced environmental impact and circularity: in order to be competitive on the market, companies will not be able to do without investing in research and development on the issues of Green Economy and sustainable innovation, without neglecting the development of new ways of communicating with its consumers
- The problem here is that these are mostly "combination products" whose components are not produced in the factory itself but only processed. With the increasing globalisation of trade structures, corresponding safeguards against upstream suppliers are necessary.
- The circular economy in it's essence is a design challenge, where eco-design often still has to make the leap from product design towards systems design, taking in regard the entire life-cycle of a product, business model and user-interactions included (business model design, regenerative design, ...)

- The basic aspects of the design of a piece of furniture will be affected (durability, reparability and, especially, recyclability)
- Specially important in group of furniture of high quality made for durability.
- Not only processes and products will be affected, but also the design phase of the products.
- Most businesses are not set up to understand how to apply eco-design or apply it. There is a lack of evidence to support decision making and the economics of the spare part market is lacking. The durability of products will also likely impact the business models for revenue generation.
- It will increase quality requirements, meaning a lot of players will have to adjust supply chain, production, quality check and maintenance. It will then require business model chances to finance all the previous changes of activities. It might over time gain the EU furniture sector a very good reputation, which will then become a big marketing advantage.
- it will have an influence on design in general, even if furniture is not in the scope.
- it is a matter of common sense and it provides business advantages: lower cost, less waste. That can be communicated with the end user. Technically this is no barrier, but it may require investments.
- If furniture products were affected by Ecodesign Directive Regulations, the effect on the sector would be high because the manufacturers should have to comply with the defined eco-design requirements, for example on durability, etc. The accomplishment with these requirements is associated to the CE marking (needed to put the product on the EU market). Depending on how strict these requirements were, the effect on the sector will be higher or lower.
- Ecodesign will be an important tool to go towards a circular furniture sector. Nevertheless, it has been working on that since years and furniture sector is already adapted to it.
- Eco-design will be a necessity to be authorized to bring new products on the market. the extended product responsibility of new furniture need to be compliant with the durability requirements, reparability, disassembling easiness, etc...
- Decoupling resource consumption from economic growth is one of the main reasons behind the circular economy concept. I see materials efficiency intended as durability requirements, reparability, spare parts availability, disassembling easiness, use of materials, in line with this principle.
- At least the reparability and disassembling easy will have a impact. To achieve that its a need for changes in the designing of the furniture.
- Furniture is a durable product in most cases. Much more that many other category of products. Moreover requirements such as reparability, spare parts availability, disassembling easiness, etc. are already commonly included in public and private tenders.
- Advanced skills required regarding design, materials and reparability as well as additional investment in marketing and awareness-raising (in both consumers and own staff) and research on ecodesign

Forecasted Evolution:

LEGISLATIVE INSTRUMENT

5.1 - EPR schemes

A European directive defining an Extended Producer Responsibility scheme or take-back scheme is published for the furniture sector products, forcing to define a system for the collection and treatment of these products at the end of their life cycle, being the manufacturers the ones responsible for covering the associated costs.

Summary of statistics:
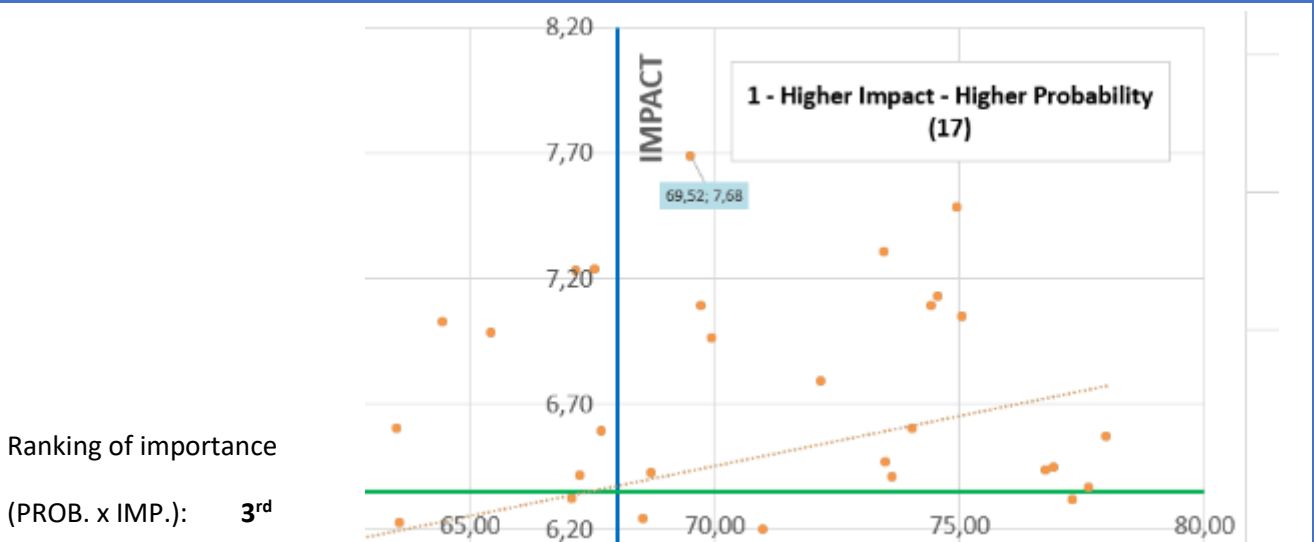
Ranking of importance

(PROB. x IMP.):   **3ʳᵈ**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
69,52	**23**	**7,68**	**1,79**	**533,97**

Survey respondents' comments:

Probability

- The scheme may be skeptical of some manufacturers, but it opens up new market opportunities so that it is much more likely to evolve than using environmentally friendly materials.
- The manufacturer end its responsability towards the product with the sale. The ideal is that it evolutes the same way as with eletrical equipments. When we buy articles, the company that sells the article collects the piece of furniture and sends it to a cycle of treatment. It can be disassembled, recover some parts, and recycle others.
- The Extended Producer Responsibility has not been widely adopted in the European Union member states. Meanwhile, significant amounts of post-consumer wood is generated in all countries which is currently used for low value applications. Extensive information campaign and new legislative measures are required.
- It will be so difficult for thousands of SMEs to be part of a Extended Producer Responsability scheme, sucha as happen with the paper or plastic. I don´t think in 10 years we can be ready for this great change.
- I believe that the implementation of a directive of this type cannot be carried out before 2030, since it is not only necessary to define it, but also to implement it and give companies an adaptation period.
- I believe that in the near future (before 2030) the furniture manufacturer will not be prepared for the collection and treatment of these products at the end of their life cycle and also to cover the associated expenses, especially small businesses.

- furniture is a significative part of the waste collected by municipalities. it will be addressed soon by an initiative, which is good because costs for recycling are not so high,   so the whole sector could comply with such a regulation. i hope this won't end up in barrier to trade among MS like it happens with WEEE and packaging in germany
- EFIC hopes there will be a harmonised scheme at EU level, however the Commission has been reluctant so far. Municipalities will need to play an important role if this happens. The requirements should be general and take into account that the waste infrastructures of Member States are very different.
- Depend on common conditions within industry, substututes role, rivalry schemes...

Impact
- The scheme opens up new market opportunities. It provides us with many options for competitive advantage in the expected and augmented product. In addition, reuse of furniture would often optimize the raw material supply chains.
- Will at least the German medium-sized furniture industry face incalculable insurance risks
- will also be implemented for other products like textiles.is a real customer benefit if communicated and marketed in the right way.
- Where EPR has been put forward for consideration it is often found to have a place if not be suitable for dealing with a problematic sector.   The furniture post-consumer market does not function effectively and this would indicate an EPR scheme is likely to have a positive effect on the end of life processes. However, the management of this system and the use of the funds will need to be established correctly and with evidence to support the sustainability of the sector while ensuring env and social benefits occur.
- When you get your products back at the end of life, you start to realize how you can improve their durability, longevity and sustainability. Putting products on the markets will require that you take full responsibility for its end of life.
- To force manufacturers to define a system for the collection and treatment of these products at the end of their life cycle, being the manufacturers the ones responsible for covering the associated costs and not supporting them with digital technologies and new business models could be a barrier. Only material passports, effective and efficient take back scheme and social awareness of people could unlock this value proposition.
- The need of implementing an EPR system in the furniture sector would have a significant impact because the manufacturers will be the responsible for the collection and adequate reuse/recycling of the products at their end-of-life. This could be done individually or via integrated systems, which have a cost to be assumed by manufacturers. It is not only the collection system but also the associated recycling/recovery systems.
- the manufacturers becomes the main responsible for the inefficiencies that their products can generate throughout their life cycle.
- the furniture maker needs to consider the life after customer and incorporate this into their business models
- The design for the end of life of the furniture will be a new basic requirement in the design phase.
- the consortium approach (e.g. Rilegno in italy) is not very complex to apply. However, this favours the recovery of materials (recycling). A more articulated approach (from the design phase to the logistics phase and product recovery) is needed to encourage the reuse, remanufacturing and updating of products.
- The application of the Producer responsability principle to the furniture sector will have strong impacte in the sector, basically for the need to cover collection and treatment costs

- That is the way to go. Legislation that put pressure on the selection of materials or the potential recycling or reuse won't make a relvant impact. But making the producers responsible for what they put on the market, assuming the costs of externalities can make a real difference.
- Take back systems will be provided by third party service providers. EPR might add some costs to the product. EPR in the packaging industry has only had limited impact
- Strong impact obviously. figures from initiatives in place (like ecomobilier in France) are promising in terms of collection volumes and reuse rate.
- Similar to earlier answer theirs a need for new design and new ligistic system to achieve.
- See also answers on questions before. Will have a huge impact on design and delivery of new furniture!
- Producers will increasingly be called upon to be responsible for the products placed on the market and along the supply chain: disassembaleggio, ecodesign of the product, reuse of the components, products made with renewable material. The producer thus becomes the main responsible for the inefficiencies that his articles can possibly generate on the market
- It would have an impact on cost but is also an opportunity to develop new long term relationships with customers + new business models
- It will mean learning to produce from waste products, implying changes to production process. It will save costs on the supply of material, but it will increase costs for manpower - the comparison in Europe usually being that manpower is much more expensive. It will require infrastructure for taking back the furniture and a lot of additional communication to customers.
- It will depence on the price development of raw wood
- it will be a good shift for many companies because they will have to focus on design for recycling or at least they will raise their knowlegde of this, moreover it could boost the creation of an enhanced waste sector which would be focused on spare parts, and that could become a partner of the furniture industry
- It already exists in France and the objectives are reached
- In the same way of other specific wastes: High volume, WEEE,... Manufacturer must be responsible for the end of life of the product. Customer should pay for the recycling and product must be tracked even after end of life.
- If happen it will have a great impact in the sector. Companies will need to participate in a big management treatment (similar to ecovidrio in Spain).
- I think this will happen in most of the EU countries. I only hope that we can create a level playing field, or an common EPR scheme on EU level, that involves producers in all EU countries equally (level playingfield).
- I don't think the manifacturers will be left alone to handle the products at the end of their life. But again the manufacturers could take advantage of it, having back great quality materials at the cost of creating the take-back system. Reverse logistic will be a challenge, but also a chance to partner with other companies.
- Furniture waste is one of the most critical for municipalities, for its diversity, volume and handling / recovering danger. The EPR systems are getting implemented in new sectors such as textile and apparel. If well designed a proper scheme can create a infrastructure that would recover a huge amount of material, diverting it from landfills. The issue is how to ensure that a virtuous (environmental, social and economic) circle is generated and not a pure business around, it as happening in other sectors.
- furniture sector must pay attention to this, and this involves cost.
- it will require considerable organizational effort
- if the manufacturers are responsible of the product at the end of life, they will make sure that it is feasble to reuse it or recycle it, in a better term that nowadays.

- Increased costs with storage facilities and treatment of old furniture items (those that include legacy finishing materials etc) or upholstery items and mattresses

Forecasted Evolution:

LEGISLATIVE INSTRUMENT

5.2 - EPR schemes

A voluntary agreement among the manufacturers of the furniture sector at European level is agreed to define an Extended Producer Responsibility scheme or take-back scheme, which allows the sector products collection, return and treatment at the end of their life cycle, without any cost for the final users.

Summary of statistics:
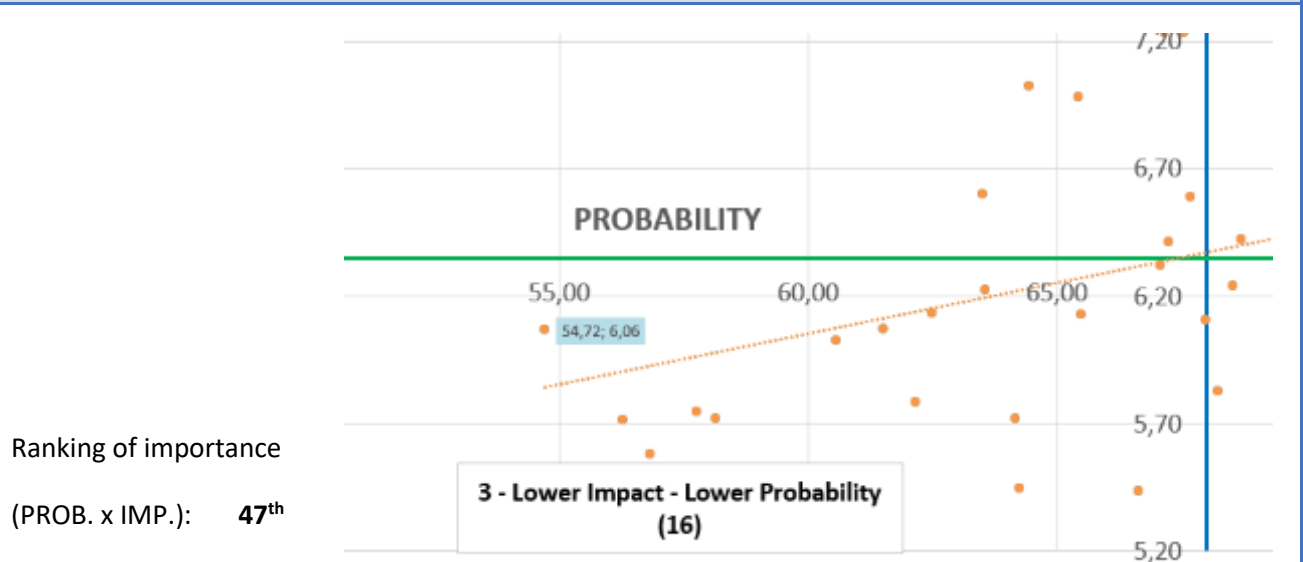
PROBABILITY

54,72; 6,06

3 - Lower Impact - Lower Probability (16)

Ranking of importance

(PROB. x IMP.):   **47**th

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
54,72	**26**	**6,06**	**2,39**	**331,81**

Survey respondents' comments:

Probability
- to many different interests (supported also by different national interests) compete. Export to non-EU countries can be also an issue
- Without obligation, laws and rules and a complete and unexpected change in customer's priorities, few manufacturers will implement processes that increases their responsibilities and expenses. The only scenario I could see probable if manufacturers can use it as a marketing tool and a competitive image advantage.
- voluntary systems usually don't work because of market forces.
- This could be a solution to be put in place if no legislation is proposed by the European Commission.
- There are always some "advanced" manufacturers that would have the initiative of voluntary agreements. Nevertheless is preferable that EPR is regulated by a directive.
- The probability of the voluntary agreement of the manufacturers without any cost for the final users is not credible
- The furniture sector is made up of many different sub-sectors, which are very different from each other, and therefore the chances that a voluntary agreement can be reached before 2030 are low.
- The furniture sector is hugely disparate and a single system for all products is v.unlikely to work. However, any costs put onto a system will inevitably end up on the customer.   In the UK we have seen several sectors proactively identify a system which would be less costly than a government-

led one but with a greater potential benefit to innovation within the sector. This could work. Alternatively, ensuring evidence is available for policymakers is critical to ensure the correct formation of any scheme. A voluntary evidence gathering exercise would help with that clarity.

- Such a system will always add costs to the production / use chain. And in the end, it are the consumers / final users which will have to pay for it.
- Speaking for the Belgian furniture sector, I doubt the change will happen voluntarily. In a recent survey done by woodwize asking the Belgian players what skills and knowledge they would like to gain, none indicated any level of interest in going eco.
- Only the biggest player on the market could take part in this due to high cost of collecting goods, so it's a little bit hard of judge the probability as such.
- no cost for the final user is impossible. costs are always reflected in prices. prices are to be paid by the final user.
- Never, ever anything voluntary what is going to cost money
- It is not a voluntary agreement that should be proposed but a mandatory one with manufacturers forced to take back the products themselves at the end of life. We will not solve the problem with a voluntary agreement.
- I think this is gonne be regulated
- I strongly believe that the sector will implement these kind of take-back schemes, but the costs for designing these kind of services will be for the final user to carry.   Since these models work differently in terms of ownership etc, that extra cost will quite probably not be perceived as such, and since the TCO (Total Cost of Ownership) is distributed differently, the total cost for society will quite porbably (hopefully) go down.
- I don't how this could word in an operationnal and financial way. How could the mean could be more effective than an ERP system. I don't believe in this possibility.

Impact

- The scheme opens up new market opportunities. It provides us with many options for competitive advantage in the expected and expanded product. In addition, reuse of furniture would often optimize the supply and raw material supply chains.
- This would be a good alternative to legal obligation
- THis association is key to get it being competitive
- The deposit and return systems are not yet mature in the sector, but the trend of the circular economy itself will force its implementation in almost most sectors.
- The agreement of the furniture sector at European level would have a great impact because it would reduce waste, increase the reuse of raw materials and reduce the impact on the environment.
- Similar to the previous point, the implementation of a EPR system will have a significant impact on the sector. It is considered that this impact would be lower if it is done as voluntary agreement.
- See previous question. I just doubt the "without any cost for the final users"
- same as previous
- Reverse logistic flows are not easy to build. Industry should probably collaborate for the collection, sorting and share the burden.
- Initial steps for a future compulsory Extended Producer Responsibility scheme will be started by big companies in some regions.
- If the sector really takes back the products at the end of life, it will costs quite some money and it will be a logistic puzzle. The solution will be that third party service providers will take care of this work (eg car disassembly at specialised companies)
- If it is voluntary there is a risk that not the entire sector will apply the rules in their countries.
- If it happens, the impact will be big, as explained with the previous question.

- As before, this is a chance for companies to get back materials that with the system of today are lost. Producers or other companies creating with Extended Producer Responsibility scheme or take-back scheme can build a local business and create jobs as one of the effect of the voluntary agreement.
- Any scheme will have a significant impact on the sector.
- a voluntary agreement on this, on european level, could be quite as strong as a mandatory regulation.
- EPR schemes alredy exixt in some countries. Others will have to start from scratch.
- Voluntary agreements are good instruments because the manufactures that joint the iniciative strongly believe in it. If consumer knows about the EPR or T-B scheems will be more keen on participating.

Forecasted Evolution:

LEGISLATIVE INSTRUMENT

6.1 - REACH Regulation

The REACH Regulation (EC 1907/2006) classifies some of the substances used in the furniture products manufacturing as restricted substances (Annex XVII), in the list of candidates or as extremely worrying substances (substances of very high concern -SVHC-) that require authorization (Annex XIV).

Summary of statistics:
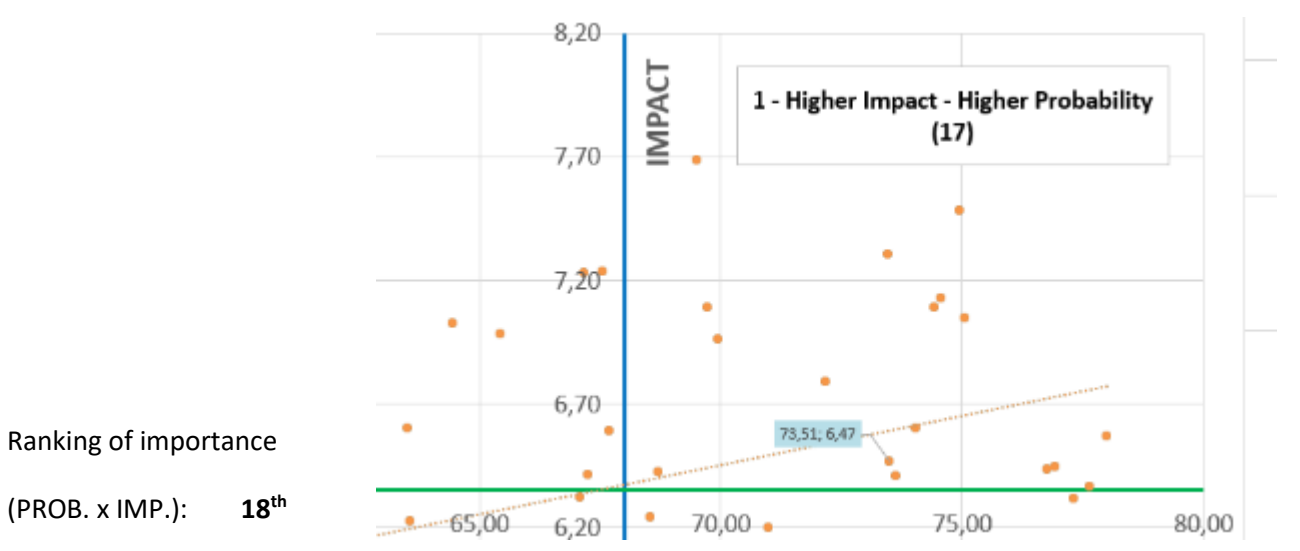
Ranking of importance

(PROB. x IMP.):   **18th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
73,51	**20**	**6,47**	**1,93**	**475,37**

Survey respondents' comments:

Probability

- The REACH regulation has been in force for several years. It is also one of the most monitored tools by the administration.
- The current REACH regulation has faced challenges in being implemented. However REACH should automatically apply to all sectors incl. Furniture. However within the time-frame this is unlikely. In the long-term it will apply.
- REACH should already apply to furniture. However with the poor market surveillance and high level of non-compliance there may be a push i the future to bring furniture under the CE marking to push for stronger compliance with REACH.
- it will happen for sure. not a problem if it not affects major components, like could happen next year with formaldehyde
- Hopefully it will happen with a number of flame retardants that are not banned yet.
- Formaldehyde and flame retardants could possible candidates.
- changes in legislation are slow and lobbies will defend their current business

Impact

- there is no choice. The market will in the end force producers to get rid of dangerous substances.See also the debate in the textile industry where REACH compliance is sometimes even labeled.

- The problem of the restriction of chemicals to be used within the furniture wood supply chain will be a factor to be kept in mind during the production phase of the products, following continuous updates on the restriction of certain substances on the market: a significant problem can be set by the possible restriction in the amount of formaldehyde to be used within the sector
- The main concern for the moment is about formaldehyde which could affect all the wood panels based furniture industry. After you have some flame retardants like TCP or TCPP that could also be affected.
- The limitation of hazardous substances in resins, varnish, paints, etc will suppose a great impact. Companies will need to look for alternative ecomaterials with a higher price
- The legislation is completely in line with the health, safety and well being that interior spaces shall guarantee.
- the industry has to find new products and materials for some of these products or ways of working
- Stronger legislation and stricter compliance to REACH will require a significant shift in their furniture industry to understand what is contained in their products. This may require redesign to remove banned substances, changing their supply chain and may require additional staff to obtain full transparency on the contents of the materials they purchase.
- REACH Regulation will have a great impact in the use of dangerous chemicals reducing the health risks of workers and users
- Probably now these substances are already avoided
- only law forces companies...
- It will require all companies to re-consider their supply chain, the materials and chemicals they use, production practices, value chain relationships and actors and organisational culture.   Companies will need to become transparent and take full responsibility.
- It will affect producing technology as such and supply chain of raw material as well. Curve of learning take some time (money). I am not sure if it will be possible for smaller players on market.
- Is already existing, so no or only very small extra impact
- I don't know this theme in detail.
- Human health and safety is a number one priority. In this respect, the use of hazardous substances and preparations in the production of furniture products and/or materials for their their manufacturing (e.g. wood-based panels, adhesive systems, impregnating substances, coatings, etc.) should be restricted as far as possible. Special attention should be given to free formaldehyde emissions from wood-based composites.
- formaldehyde could be heavily restricted next year. TiO2 also. some of these measures if not well planned could harm the european furniture production. if well balanced, they will be applied giving a sort of little environmental edge to the european sector.
- Depending on the availability, cost and technical performance of the substances to be used as substitute of the regulated substances, the impact on the sector would be higher or lower. In any case, it would have a cost associated to the validation of the new substances (R+D+I, laboratory tests, manufacturing trials, etc.). If the restricted substances are not substituted, the manufacturer would have to accomplish with the requirements associated to REACh as downstream users (information, etc.)
- Customers are interested in health rather than sustainability. Toxic materials are a problem. We see high increases in organic and natural healthy nutrients and components. If a strong player open the door to a non-toxic range of products, it could succeed, specially regarding the child market.
- Some of these substances are common in the sector, so to regulate and reduce their use will provoke important changes.
- Increased investment in materials research or in new technologies and materials, which are often more expensive
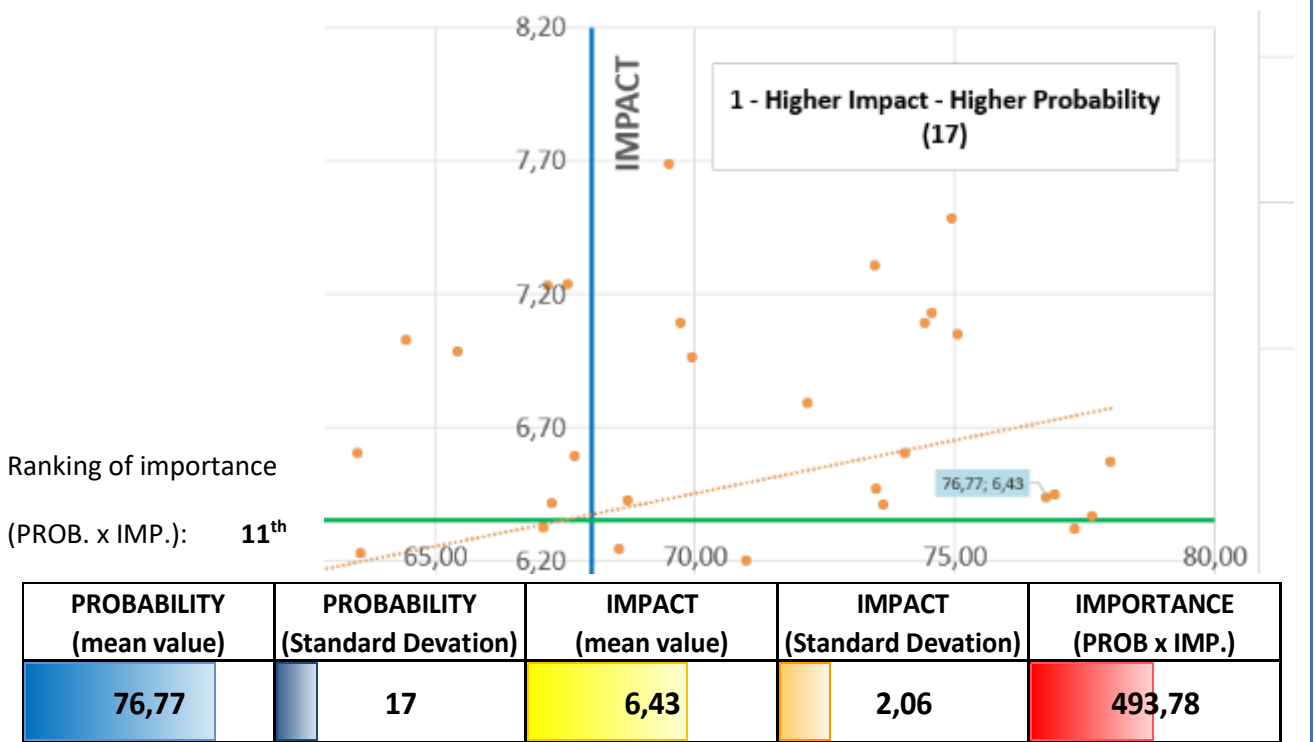
Forecasted Evolution:

LEGISLATIVE INSTRUMENT

6.2 - REACH Regulation

The proposal presented within the REACH Regulation framework is approved to restrict the placing on the market or the use of items that emit formaldehyde at concentration levels equal or greater than 0.124 mg/m3 (equivalent to category E1).

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **11th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
76,77	**17**	**6,43**	**2,06**	**493,78**

Survey respondents' comments:

Probability

- The use of materials with a high content of formaldehyde in the production of furniture can be replaced by thicker panels, solid wood and more. Therefore, the resistance will not be great and consensus will be easily reached.
- The limit will most probably be lower according to the course of action that we see in the restriction proposal. It could be around 40% lower than E1.
- on this I have no competence to make evaluations on quantitative aspects
- at 0.124 mg/m3 would be perfect. easy for the companies, one level playing field in europe. below that starts to be tricky. well below, it's difficult to comply with.

Impact

- The use of formaldehyde is often accompanied by good adhesion properties, but can be corrected by other material properties such as thickness.
- There are alternatives.
- The sector will have a great problem with some substances, as formaldehyde. Althoug all projects to avoid them, it will suppose the use of eco-materials that will increase the final price of products.
- The proposal presented within the REACH Regulation framework shall be coupled with technological and material support to all the furniture manufacturers that now are overcoming the proposed limit.

- The market is technically prepared for it, so it will not have a big impact (except initially in price increase).
- suppliers must develop solutions that are very different from those on the market today, supporting all research and development costs
- sector is already preparing this
- Research on more sustainable and healthy resins and substances is key.
- Products with higher formaldehyde emission levels than E1 cannot be placed on the market at Community level: this requires companies to think of production methods and products that respect these chemical-physical characteristics. In some EU countries, the production update compared to the E1 level has already happened, in others this process is slower: investing in R&D on this aspect will be a priority
- on this I have no competence to make evaluations on quantitative aspects
- no technical problem. is more of a cost issue. alternatives are available.
- It is going to start a new rule in Germany even more strict (E05)
- In food packaging these restrictions are already taking shape, it is a logic evolution to see these norms find their ways into other consumer goods as well.
- Given the prevalent use of formaldehyde in the sector this will have a large impact from material supply through to cost and investment, and require major changes in all stages of the value chain as well as organisational culture and transparency.
- Free formaldehyde emissions from wood-based panels, especially in indoor applications, pose serious risks to human health at certain concentrations. The scientific and industrial interest has already been shifted from the the traditional formaldehyde-based synthetic resins to the new bio-based adhesives for production of eco-friendly wood-based panels. This will make the wood-based panel industry more sustainable and lower its dependence on fossil fuels.
- Formaldehyde is very used in Resins manufacturing as bonding agent for wood particles. The control of aldehyde in environment is relevant,
- Formaldehyde is a very commonly used substance that many furniture companies are not aware is a problem, let alone aware of any alternatives. This will have costs implications as alternatives may be more expensive or will perform in different ways or require new machinery to use. IT will require major culture changes of transparency across the supply chain.
- Formaldehyde is a toxic substance that at concentrations higher than greater than 0.124 mg/m3, produce local irritation in mucous membranes. Also it is known that it can interact with molecules on cell membranes and in body tissues and fluids (e.g., proteins and DNA) and disrupt cellular functions. Children are the most vulnerable.
- For certain low-cost products, the substitution of materials by materials emitting fomaldehyde at concentration levels equal or greater than 0.124 mg/m3 can lead to a loss of competitiveness for the manufacturing companies.
- End users (citizens) are very concerned of using any toxin emitting substances.
- E1 is workable for everyone.
- a possible ban of the use of formaldehyde is one of the major threats to the industry. it's unlikely to happen though, because formaldehyde has no real substitute at the moment, so a ban would crash an entire industry.
- this is required by law in 7 or 8 of the European contries. The furniture industry commonly uses them. It should become an obbligation in all the EU member states and attempts to establish different limits in individual countries are not helping and should be blocked.
- Increased costs with raw materials or increased investment in research on new alternative materials
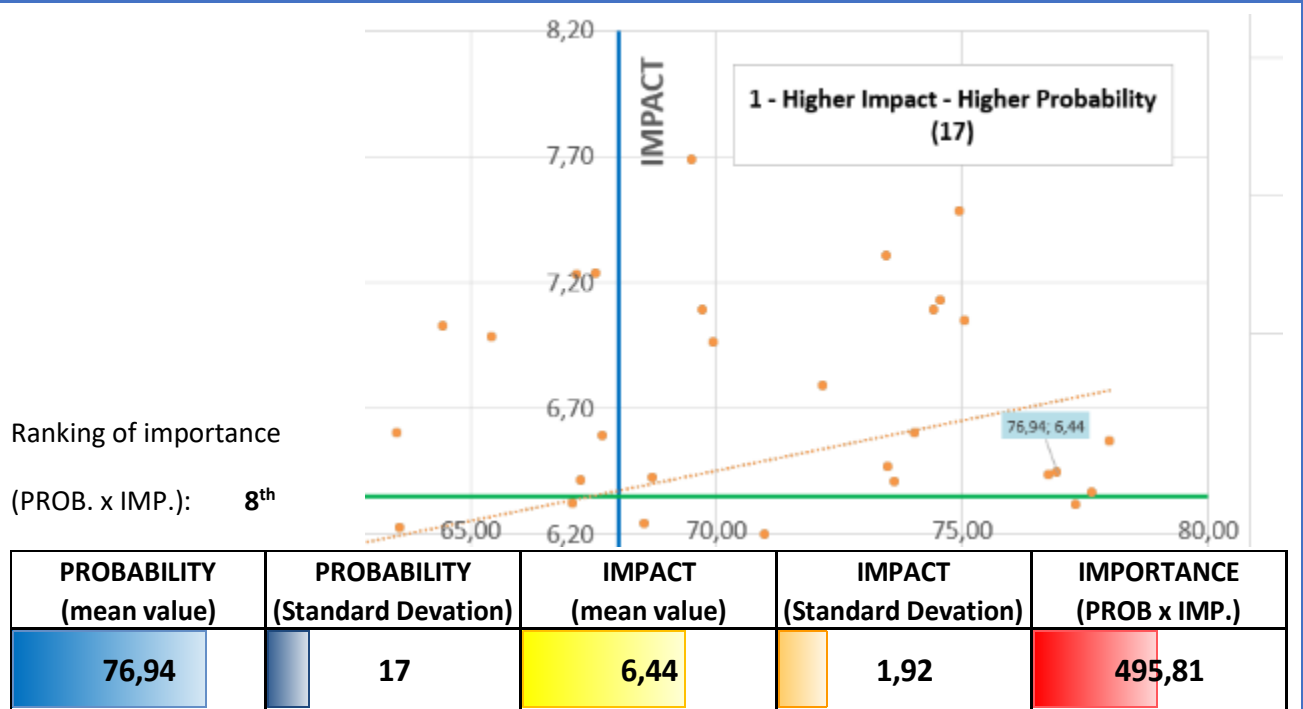
Forecasted Evolution:

LEGISLATIVE INSTRUMENT

7.1 - Formaldehyde emissions

The European Commission decides to regulate the emission of formaldehyde of products at European level, fixing a value lower than category E1 (<0.124 mg / m3), currently fixed in several European countries and in the voluntary agreement of EPF (European Panel Federation) members.

Summary of statistics:

Ranking of importance

(PROB. x IMP.): **8th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
76,94	**17**	**6,44**	**1,92**	**495,81**

Survey respondents' comments:

Probability
- on this I have no competence to make evaluations on quantitative aspects
- Levels such as for example 0.02 would not be workable at all, given that in that case alternatives to glues would need to be found, which are difficult to find.
- it will probably happen and it could be dangerous. it depends on how low they will go, and whether they change the test method or not.

Impact
- This would mean a real shift from the supply chain to low formaldehyde wood panels
- There is rule stricter in Germany so we are going to fulfil
- there are alternatives. Producers should ask themselves why they want to continue using and selling harmful products. Is a global trend to get rid of toxic substances.
- Same reason as previous question
- Safety at work is very important. Regulate the emission of formaldehyde of products is compulsory. On the other hand, furniture made with formaldehyde can emit this chemical in the places where it is used (offices, houses, etc.) and generate a human health risk to users.
- Products with higher formaldehyde emission levels than E1 cannot be placed on the market at Community level: this requires companies to think of production methods and products that respect these chemical-physical characteristics. In some EU countries, the production update

compared to the E1 level has already happened, in others this process is slower: investing in R&D on this aspect will be a priority

- it will affect the whole industry. if the new level would be beareable, i don't foresee big problems though.
- I see this as having a great impact, but be prompt to support manufacturers with technological and material advice and to restrict control for the furniture sector products entering the EU borders.
- Formaldehyde has been identified as a hazardous and toxic compound and in 2004 was re-classified from "probable human carcinogen" to "known human carcinogen". There is sufficient evidence that long-term formaldehyde exposure can cause cancer of the nasopharynx and leukaemia, and sinonasal cancer. In this respect, the new stricter formaldehyde emission limits for composite wood products, established in Europe, USA and Japan, are well justified.
- Formaldehtde regulations will be more and more restrictive
- End users (citizens) are very concerned of using any toxin emitting substances.
- Depending on the level, a huge impact.
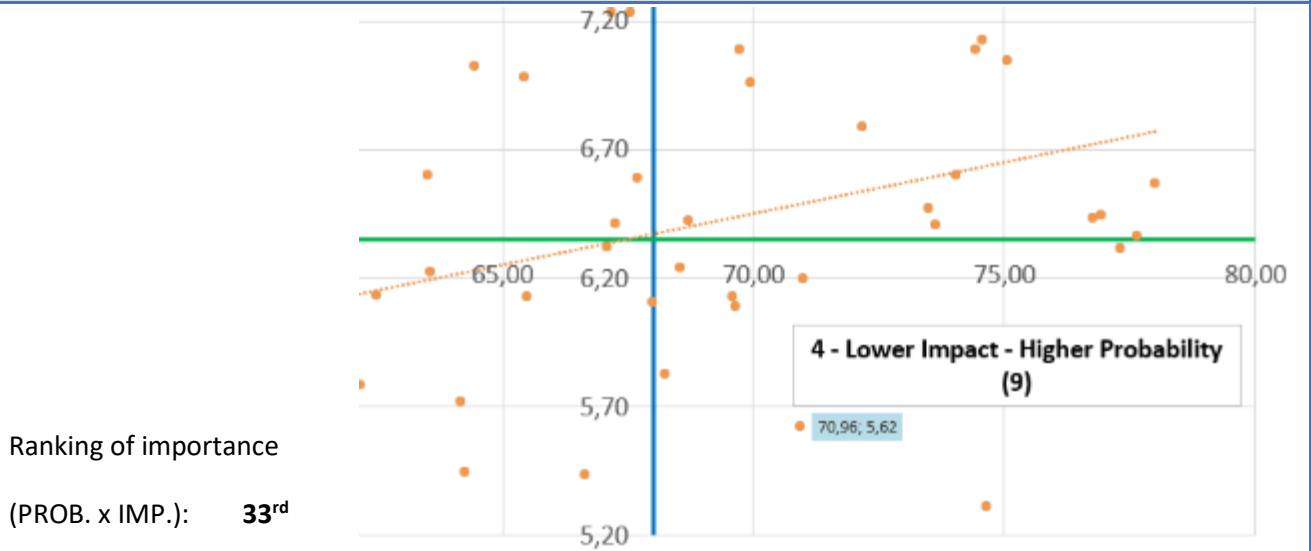- It will be the standard soon

Forecasted Evolution:

LEGISLATIVE INSTRUMENT

7.2 - Formaldehyde emissions

The European Commission decides to reduce the formaldehyde occupational exposure limit below the current value of 0.3 ppm.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **33rd**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
70,96	**18**	**5,62**	**1,73**	**398,95**

Survey respondents' comments:

Probability

- The use of materials with a high content of formaldehyde in the production of furniture can be replaced by thicker panels, solid wood and more. Therefore, the resistance will not be great and consensus will be easily reached.
- Portuguese companies don't have as priority the measurement of formaldehyde levels. It's not a regular practice.
- No feedback
- New materials developmnet (glue, bioproducts...)
- I have no competence to assess quantitative aspects of formaldehyde emissions.
- 0.3 ppm is done. it won't change soon. in any case is not a problem for the furniture industry, but for the panel industry, in the italian furniture companies 0.3 ppm is not a problem.

Impact

- see previous: is no real technical barrier.
- Same reason as previous question
- No feedback
- in other sectors, emissions to the workplace were contained within a short period of time. I believe that this is also feasible for the furniture sector.
- Formol is going to be deleted
- End users (citizens) are very concerned of using any toxin emitting substances.
- don't see problems with formaldehyde exposure for workers in the furniture sector.

- As stated before, the exposure to free formaldehyde emissions can have serious negative impact on human health. The substitution of formaldehyde-based synthetic adhesive systems with bio-based adhesives in the production of wood-based panels can significantly reduce the negative environmental and health impact of formaldehyde from wood-based panels and enhance the transition to circular economy by meeting the current needs for development of sustainable and innovative materials.
- As I said before occupational exposure is very important to be regulated in order to reduce the health risk.
- Increased costs with exposure measurement and certifications

Forecasted Evolution:

LEGISLATIVE INSTRUMENT

7.3 - Formaldehyde emissions

Consumers appreciates that the product does not emit formaldehyde, thus a specific label of "formaldehyde-free" is created to inform consumers the product comply with it.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **26th**
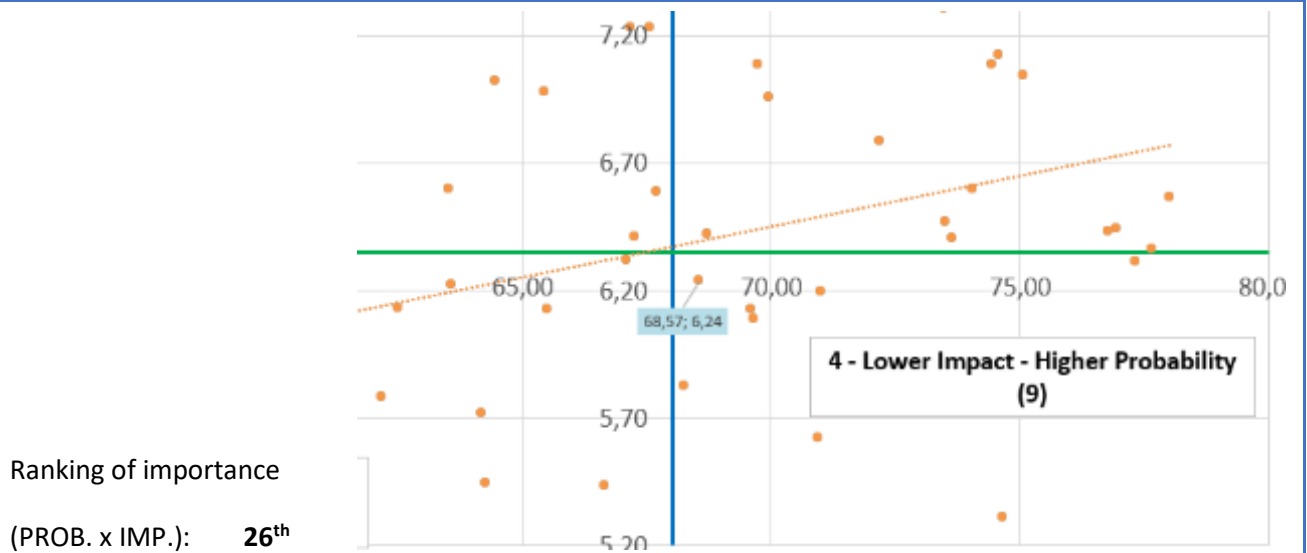
PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
68,57	**23**	**6,24**	**2,27**	**427,83**

Survey respondents' comments:

Probability

- Low formaldehyde content will be one of the leading competitive advantages. Manufacturers will benefit.
- The concept of "formaldehyde-free" furniture products is appealing but there are still some substantial challenges, related mainly to the complete replacement of petroleum-based wood adhesives with bio-based adhesives for production of wood-based panels.
- Other eco-labels will take into account this new criteria, without necessity of launching a new "formaldehyde-free" label.
- Only companies working for foreign   customers that demand the accomplishment   of such requirements, will companies make an effort (economical) to use such label.
- No feedback (however do not really see this coming)
- is a silly label. There a thousands of toxic substances that are also not present.marketeers love this kind of meaningless labels.
- I think that the most consumers are not familiar with the formaldehyde and its harms.
- Consumers aren't really aware of formaldehyde emissions, so this might not be a great added value for them when shopping - and therefore not a great added value for marketing. Perhaps a smarter way to go is a more general label that reassures people of the healthy nature of their furniture?
- This does not make any sense. It would be a false claim as formaldehyde exists in nature even if in low concentrations. Ntural wood emits formaldehyde. Such a label would exclude the use of any

woodden material in furniture. Moreover formaldehyde is demonstrated to be dangerous only if it exceed certain concentration limits.

Impact

- Yes but pay attention to other glues without formaldehyde
- The use of natural adhesives rather than formaldehyde-based ones can significantly reduce the negative environmental impact of harmful formaldehyde and volatile organic compound emissions from wood-based panels, used for furniture production.
- The market is technically prepared for it, so it will not have a big impact.
- The label could be a competitive advantage for furniture companies and a great way to build trust with the consumers.
- The avoidance of housing poisons will be an important issue for European manufacturers.   be a competitive advantage
- schemes pushing for transparency in regards to consumers have a stronger impact.
- People should be informed about the chemicals included in each product. The food sector was a pioneer in providing this information, but should be applied in all sectors of production including that of the furniture industry,
- No technical difficulties. The problem is to find a robust system that takes into account the interests of all stakeholders. Verification and control are also important to ensure the credibility of communication.
- No feedback
- NGOs, consumers associations and customers are demanding more transparency, health and safety for the products they use and consumer, as it is happening for food and cosmetics. In the furniture and clothes there is a similar demand growing, so the impact in the sector would be great, generating a great business opportunity embracing formaldehyde-free labelled products.
- More than the applicable legislation, consumer awareness and access to demanding building certifications (for example, LEED) is what will mobilize the sector.
- It is important to notify consumers about the formaldehyde free and safe products.
- It is already available.
- importance of the consumers response
- If the information provided to customers creates a new trend, related with health; manufacturers should face an opportunity but also an urgent need of reviewing their product range and production processes.
- If formaldehyde can be avoided it could hapen the same effect than in food with "palm oil free".
- Consumers (an in particular millennials) are more aware than previous generation in the past if the toxic materials and environmental concerns related to furniture sector products. A simple label such as "formaldehyde-free" can definitely help consumers to be more aware and to pay more attention to the products they are buying.
- although silly labeling. uninformed consumers may like it.
- All the european countries and consumers don't have the sensitivity about the formaldehyde issue. And in that case what kind of furniture would they buy for as solid wood also emits formaldehyde.
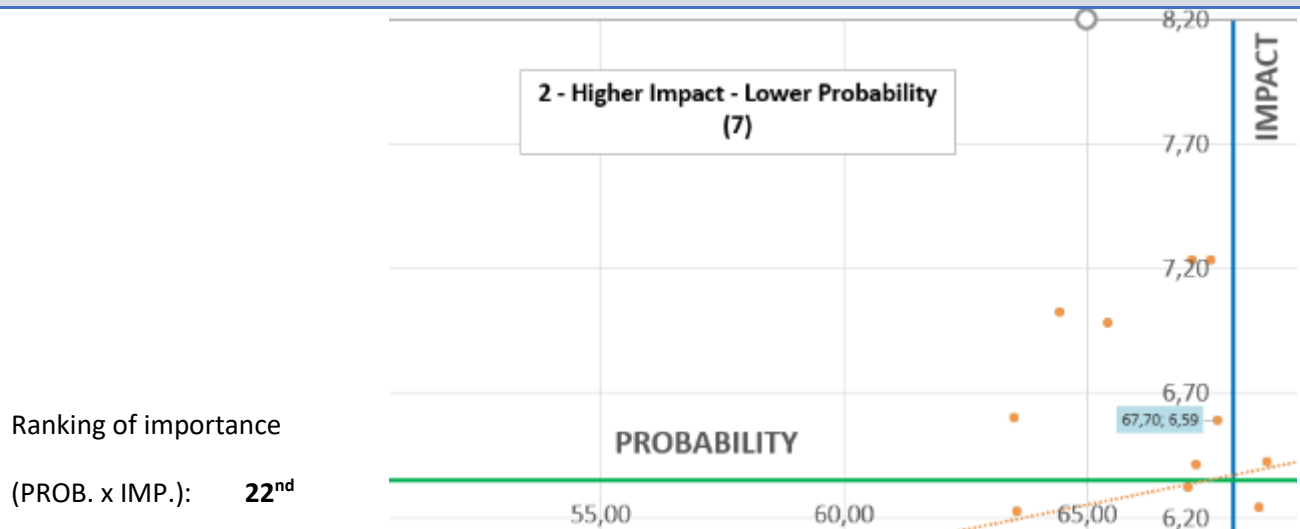- a well advertised label could gain popularity among customers.

Forecasted Evolution:

LEGISLATIVE INSTRUMENT

8.1 - End-of-waste criteria

End-of-life waste criteria are defined for wood waste (Directive 2008/98/EC), which will produce quality standards for secondary raw materials (similar to copper and steel scrap currently).

Summary of statistics:

2 - Higher Impact - Lower Probability (7)

Ranking of importance

(PROB. x IMP.):   **22nd**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
67,70	**17**	**6,59**	**1,98**	**445,94**

Survey respondents' comments:

Probability
- No feedback
- it could happen, but that would be not good, because it will hinder innovation and in the end also recycling
- I think the sector is not ready yet. Factories that recycle wood are scarce
- I do not believe that wood is being considered as a priority raw material by the EC, compared to metals or materials of petroleum origin.

Impact
- Optimizing sourcing through reuse of materials will result in savings and, consequently, greater margins. At the same time, diversification into low-budget segments is possible.
- Waste wood needs legislation for the potential reuse, refurbish, recycling at its end of life.
- This will ease the identification of different uses for recycled wood.
- The sector might be forced to use a certain percentage of recovered / recycled materials in their products. This will probably give design contraints
- The implementation of end-of-waste criteria for wood waste, would have a significant impact on the sector. From one side, because the waste generated in the manufacturing processes would be treated and collected in a different way (to avoid mixture with other wastes, etc.), probably reducing their management cost (more revenues). On the other side, it would be available in the market wood waste with enough quality to be used as raw material, increasing the content of recycled wood in products.

- The impact would be very high because waste will reduced and also would reduce the use of raw materials
- The end of furniture wood and its reuse will be one of the great trends in the coming years, especially because of the advantages it can offer compared to the end of life of other materials.
- The definition of a clear and precise jurisdiction in the field of End of Waste will prove to be a further driving force for the conversion to productive models based on the circular economy: the matter within the production cycle is thus understood as a founding element of a other possible production process. Companies will be encouraged to think and think about the material no longer in its definition of waste but as a raw material to be reused
- Same arguments I've detailed in previous questions regarding supply chain, production, nature and location of work, business model and marketing.
- potentially dangerous for the companies that already use waste wood as the only raw material, because they have the experience and technology to do so, and they always research for now kinds of techniques to be able to recycle even more wood wastes.
- No feedback
- It will be important to guarantee a second life for wood wastes
- It should enable the increased input of secondary raw materials in greater quantities. If successful it should encourage increased pull through the market.
- It is very important to define the quality standard of recycle
- if this is going to happen it will mean quite a lot to producers and wholesalers. a full return system has to be set up. that takes a lot of investments and of course storage facilities, a web based system matching demand and offers/stock. Blockchain technology possible?
- End-of-life waste criteria is being asked from several industries to be able to enable a secondary materials market that allow them to embrace a circular economy approach.   In the case of wood and by products, the question is related to the purity of the materials used, connecting this framework with a real implementation of the ecodesign.
- At the moment, the furniture industry is not designing its products with a life cycle approach, and therefore no thought is given to the end of life of the product. Therefore, the impact of the application of this instrument can be important for companies because it will force them to design differently.
- A lot of secondary raw materials coming from wood will be created and reintroduced in furniture ranges.
- There's still a lack of confidence between manufacturers to use waste a resource. it is important the definition of standard for they convenience.
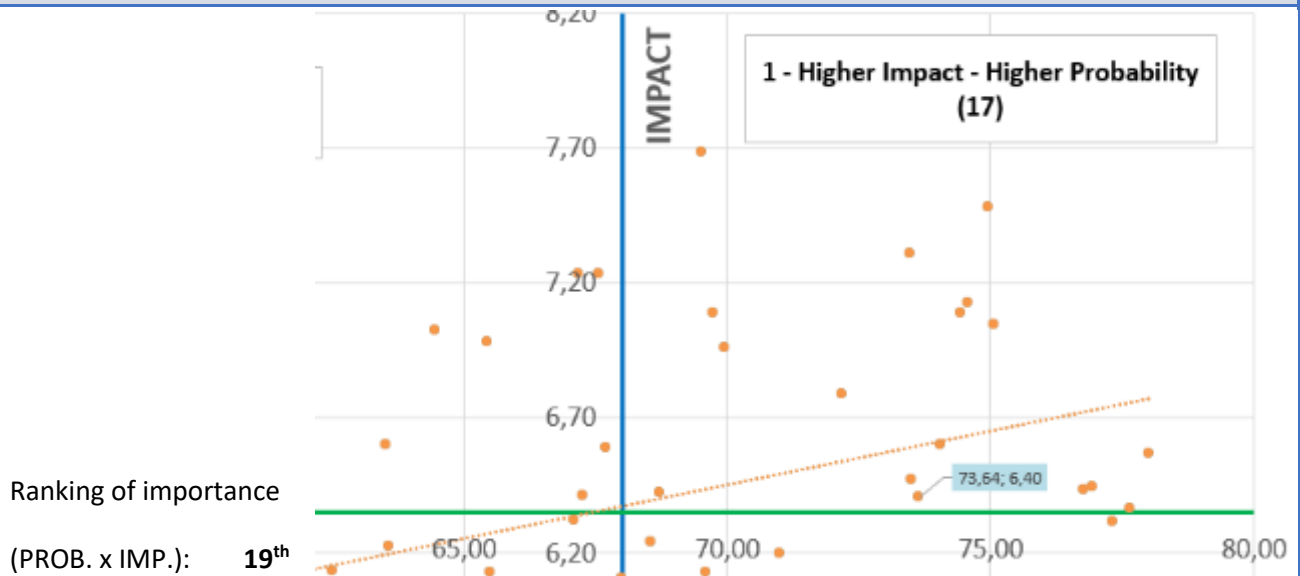
Forecasted Evolution:

LEGISLATIVE INSTRUMENT

8.2 - End-of-waste criteria

There is a market and a consolidated demand for wood waste that will be used as secondary raw materials in different sectors, securing their quality and traceability.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **19th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
73,64	**19**	**6,40**	**1,83**	**471,61**

Survey respondents' comments:

Probability

- There is market and demand, but the quality is not controlled.
- raw wood is far cheaper than having to recover, disassemble and process furniture
- don't see many other sectors besided wood based panels as destination for wood wast, let aside energy sector.
- A large secondary timber market is not expected except for the manufacture of products such as board fibers or pellets

Impact

- There will be an increasing demand on recycled products
- The upcycling of waste wood rather than the downcycling and the energy recovery shall be prioritized when considering end of life options for wood.
- The problem is quality, price and availability
- The greater demand for waste wood as a re-use material for other industries as well as for the manufacturing companies themselves will be a great opportunity for companies in the wood-furniture industry: lower raw material procurement costs, waste rationalization, development of a raw material traceability system and opening up of new markets.
- see also previous answer: if this is going to happen it will mean quite a lot to producers and wholesalers. a full return system has te be set up. that takes a lot of investments and of course

storage facilities, a web based system matching demand and offers/stock. Blockchain technology possible?

- it could affect the italian production which started 40 years ago to use waste wood to produce wood based panels.
- It can create a added value for the furniture sector if you are forced to use the material more than one time. You also need to decrease the chemicals in the furniture so you can reuse it in a easier way.
- In a circular economy, the waste of one system becomes food for another system. It is up to the companies to create a demand for this kind of materials. As it is not necessary to have drinkable water for flushing toilets, there will be many sectors in which a secondary raw material coming from wood waste will be more than enough. Useful in the development of the market will be the creation of online platforms/ marketplaces as already existing in other sectors: - https://www.enviromate.co.uk - https://www.insymbio.com - https://excessmaterialsexchange.com
- If this transition happens, it will impact both supply chain and production. It will likely also impact pricing and marketing. The impact in this case can only be big. If everyone is smart about it though, it can be made a great marketing tool and even quality guarantee. Consider the wool industry: would you want to pay a lot for a second hand wool sweater? Probably not. It's stinky and only cool that one moment in your life when you're into oversized Christmas sweaters. But wouldn't you want to buy a beautiful scarf of reclaimed cashmere? Designed in Denmark, made in Italy's world-renowned centers for reclaimed wool spinning. Will last you a lifetime. Good for your style, good for the planet. Storytelling is everything :-)
- Despite having great development potential, the criteria for use at the end of life must first be clearly established.
- Already there is a great demand for wood waste for the production of panels etc. so this wil increase
- this is already happening.
- As coment in the previous question, industry needs this security and tracability to make it hapen (waste into resource)
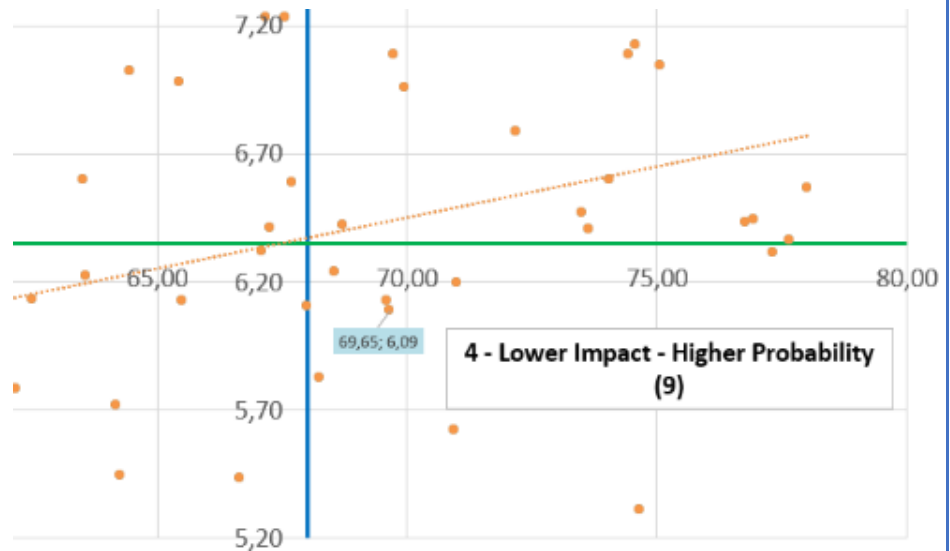
Forecasted Evolution:

LEGISLATIVE INSTRUMENT

9.1 - Flame retardants

The use of flame retardants in furniture products is forbidden. Compliance with the flammability requirements set by current legislation will be secured by the use of alternatives products with lower risk for people and the environment.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **28**[th]

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
69,65	**18**	**6,09**	**1,67**	**424,11**

Survey respondents' comments:

Probability

- The production of furniture based on a developed consumer culture also involves the removal of harmful materials. Making a requirement instantly sets market parameters that everyone is complying with.
- With the potential availability of other materials that are less flammable in the near future, this could become reality. I believe it will be a matter of time. We see some positive developments in the UK from the Parliament side to push for the change of the Fire Safety Regulations so as to not require flame retardants, but the government is slow in reacting. By 2030 there could be changes, however soon the UK will not be a Member State any longer.
- Security aspects will have more importance in this regulation. Flame retardants could be limit but not forbidden.
- European countries have a lot of difficulties to define on common framework and several countries have specific regulations. I am not sure that Europe will manage to agree in 2030.
- there are still few substantces that are good for the environment and reall give the technical level required

Impact

- This would result in a less toxic, healthier environment for many actors. To make it happen companies will need to innovate, material suppliers will need to collaborate with manufacturers,

- relationships will need to be built with research centres etc., and solutions will need to be commercially viable.
- This will limit the use of some materials. But it is a good cause not to use flammable products in environments were people work and live
- this will have high impact. not only production and sales but it will also influence designers. many alternatives have to be studied. the textiles being used will have to be different. construction and design will play a major role. From a legislation point of view: which legislator is willing to take changes here? What do consumers/end users demand?
- This characteristic of wood should be enhanced, as well as its compliance, if it wants to be used as an alternative and sustainable material to traditional ones.
- The use of flame retardants has been clearly stipulated in the EU Eco-label for wooden furniture. The strict use of allowed flame retardants and/or their alternatives will result in safer and more environmentally-friendly furniture products.
- The market is ready for replacement with other alternatives. There may be an initial price increase but it will not be a critical element from the point of view of the competitiveness of the sector.
- The impact will vary across different member states but overall will require substantial R&D into new material alternatives to flame retardants. Although this R&D is ongoing for a number of years it has yet to reach a high level of commercial viability for material substitutes. Additionally some member states may keep their current high flammability requirements which could create a stalemate for companies to comply with.
- If the use of wood was restriced there would be a tremendous impact in the processes.
- I hope it will be, but I'm afraid that the chemical loby is to strong.
- Flame retardants in furniture products are not prohibited. They are needed. Only toxic flame retardants are prohibited (REACH Directive). Not only the occupational exposure but also the indoor environment exposure will benefit from this action
- Depending on the availability, cost and technical performance of the substances to be used as substitute of the flame retardants, the impact on the sector would be higher or lower. In any case, it would have a cost associated to the validation of the new substances (R+D+I, quality laboratory tests, manufacturing trials, recertification, etc.).
- In some EU countries flame retardants are necessary to pass compulsory tests
- Alternative products price will likely be higher resulting in higher furniture production costs. Change in technologies and additional training of the staff is also likely to increase costs.
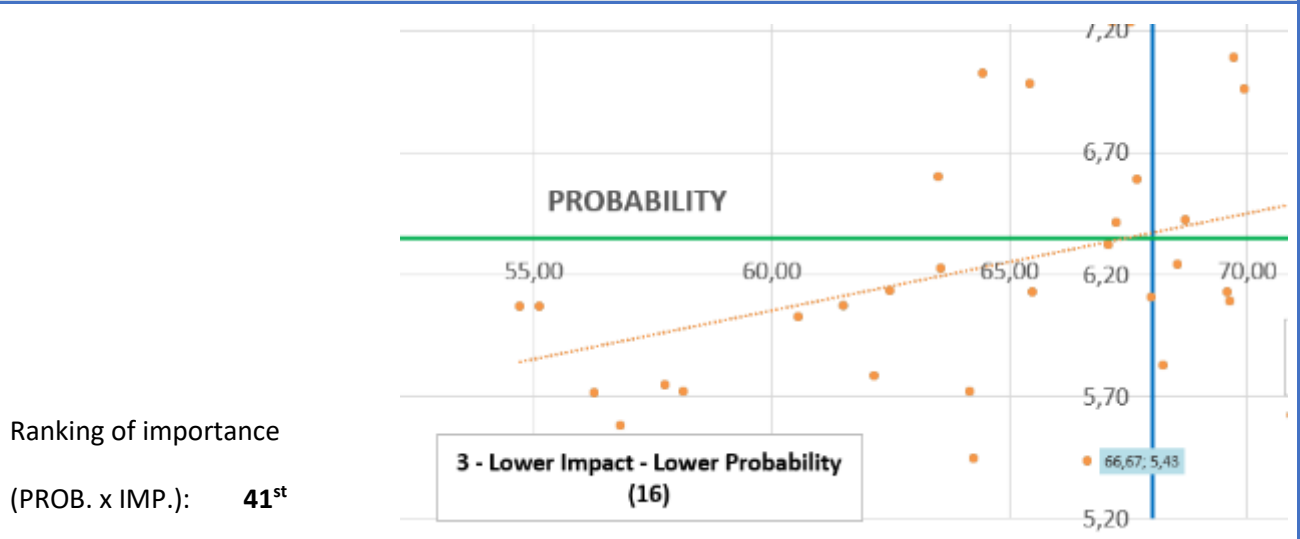
Forecasted Evolution:

LEGISLATIVE INSTRUMENT

9.2 - Flame retardants

Consumers appreciates that the product does not contain dangerous flame retardants, thus a specific label of "flame retardant-free" is created to inform consumers the product comply with it.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **41st**

3 - Lower Impact - Lower Probability (16)

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
66,67	23	5,43	2,00	362,36

Survey respondents' comments:

Probability
- Compliance with a specific requirement in most cases adds value to consumers. To do this, the product needs proper labeling.
- This depends on teh national regulations. in France for example for domestic furniture you are not supposed to have flame retardants so there is no interest for the consumer to have "FR fee" information.
- The debate on fire safety is difficult, as people normally favour 'fire safety' as such. However, many do not know what is behind 'fire safety', i.e. use of flame retardants, nor the fact that a safe fire safety is possible, without the use of flame retardants.
- Service supplly chain is not achievable without information share from start to the end of products life cycle.
- It could have a negative impacto to include a "flame retardant free" label in furniture products.
- Furniture "flame retardant-free" have a high risk of fire. So, I consider that it's a bad initiative.
- Domestic customers are not concerned to an extent of the level of flame retardants.They are more concerned with the price. Except for public buildings (schools etc), there is not this concern.
- Customers might not have a lot of background about wood products and might consider this label a disadvantage, as it would not help prevent fire spreading in their homes.
- customers are not into this, and problems caused by flame retardants are not directly connected with customes lives.

Impact
- This is very important issue to notify consumers, so that they can feel safe use of the products.

- There is a growing understanding and awareness of the chemical that surround our lives, this is generating a pressure on brand to ensure a risk free products offer to their customers. So, a "flame retardant-free" is with no doubt capable to enhance a virtuous cycle within the market and generate great opportunities for the first-movers.
- the point is: are these products still safe to use?
- The consumer will demand this type of criteria, so it will be a market necessity and a criterion of exclusion among competitors.
- maybe for some environmental protocols could be interesting, not for the private customer though.
- EU confederations stress the urge to put a ban to toxical flame retardents. Bad for people, planet and thus bad for profit.
- Eliminating toxic flame retardants will have a high impact on safety at work and indoors environments.
- the legislation on fire prevention of some EU country would have to change
- it is a good instrument only for costumers with already awareness on the subject
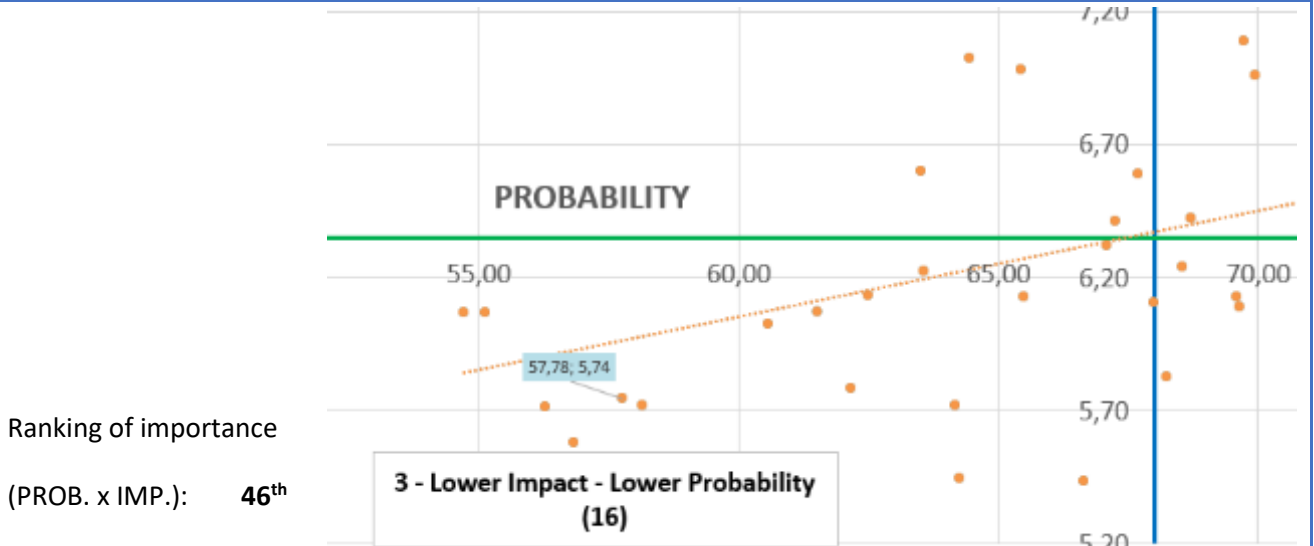
Forecasted Evolution:

LEGISLATIVE INSTRUMENT

10.1 - Energy Directive

Wood furniture and panels waste are used to produce second generation biofuels, which meet the sustainability requirements set out in Directive 2018/2001/EU. Because of this, specific collection circuits are deployed for this waste.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **46th**

3 - Lower Impact - Lower Probability (16)

PROBABILITY (mean value)	**PROBABILITY (Standard Devation)**	**IMPACT (mean value)**	**IMPACT (Standard Devation)**	**IMPORTANCE (PROB x IMP.)**
57,78	**22**	**5,74**	**1,98**	**331,93**

Survey respondents' comments:

Probability

- This is done by not a small number of companies. Establishing it as a common practice will be very well received.
- Unless it is mandatory for waste collectors and managers and as far as recycling plants are a business, low value on market materials are not going to be taken into consideration.
- They will be incinerated directly and returned into biofuels like ethanol. This will be a solution with a better business case
- there are many others more suitable raw materials for this. and the WBP industry will fight this very hard because they do material recycling that is considered higher in the hierarchy
- the wood is not burned due to the principle of cascade use
- The logistics of an additional waste stream especially for households will be a massive barrier to implementation. Especially considering the low rates of collection of WEEE, food waste and plastics for recycling. Combined with the lack of transparency of the substances used in furniture it will be very difficult for consumers to assess what is suitable for such a collection stream (as is a massive problem with plastic separation). Instead manufactures will first need to be transparent on what their products contain. Pilot collection models on small city/regional scales is very likely.
- Producing second generation biofuels from wood furniture and panel waste is a good revaluation process. The probability of being a general solution by 2030 is not too high because it is first necessary to create the infrastructure (collection, selection, etc)

- Not sure on this one but whatever system is put in place it should respect the cascading use of wood.
- Implementing such a system will be very slow. Comparing with other materials as kitchen oil, this collection is residual.
- I do not think it has a specific weight in the sector, except to reinforce the return, collection and recovery systems.
- Given the complexities around the logistics of material collection and transfer and the challenges of legacy waste with toxic constituents this is unlikely in the next 10 years. Other waste stream systems have proven very challenging. It could be that this happens on a pilot basis across certain regions/member states, until appropriate solutions are developed. In parallel companies can change their practices and remove the toxic elements etc.
- Even though it is considered part of the circular economy and a type of renewable energy, I think producing biofuels from wood furniture and panels waste is anyway a waste of materials, energy, water and time. As wood is such a great resource, in a decade where water scarcity will increase, I think/ hope other sources of energy will be considered cleaner, more efficient and economically convenient.
- energy generartion through renewable sources (solar, wind...) is cheaper, easier, safer and better understood by investors and regulators.
- Chemicals used in surface treatments is a barrier for this option.
- Biofuels shall be the last options in wood furniture recovery.
- There are better uses of wood furniture and panels waste.

Impact
- Increasing waste and scrap utilization for biofuels and energy would not contribute to changing economic parameters, because many producers invested in such installations in the recent years.
- this is from a technical point of view already possible, but I wonder if there is a business case for this?
- There is a need of criteria to decide when a wood product after its end of life is valuable as secondary material or biofuel
- The use of woody biomass for the production of renewable energy will be one of the elements necessary for an energy-industrial transition from fossil sources to a system based on renewable sources. In any case, the cascading principle of the wood raw material must always be preserved with respect to the use of energy production from woody biomass, as it generates the birth of occupational realities based on the short supply chain
- Regarding the cascade of the use of wood it would be important to redefine the priority to use raw wood as a material and not as energy and the used wood could be used for energy
- it would destroy the recycling sector, so less panels on the market, higher prices, and subject to wood availability, while wast wood is not.
- It is obvious that the collection and treatment of furniture and wood waste has to be a priority, but the impact in the furniture sector will be minor. It will have an impact in the waste management sector.
- is already (partly) existing
- In the Netherlands we are experimenting with chemical recycling and the production of biofuels
- I believe that by 2030 not all technical and organisational aspects will be mature enough for this type of innovation. It will be simpler for other sectors
- Added value to use it more than one time. Need of decreasing of chemicals in the furniture
- A high added value product would be obtained
- it would reduce the availability of wood waste for recycling and for the panels industry
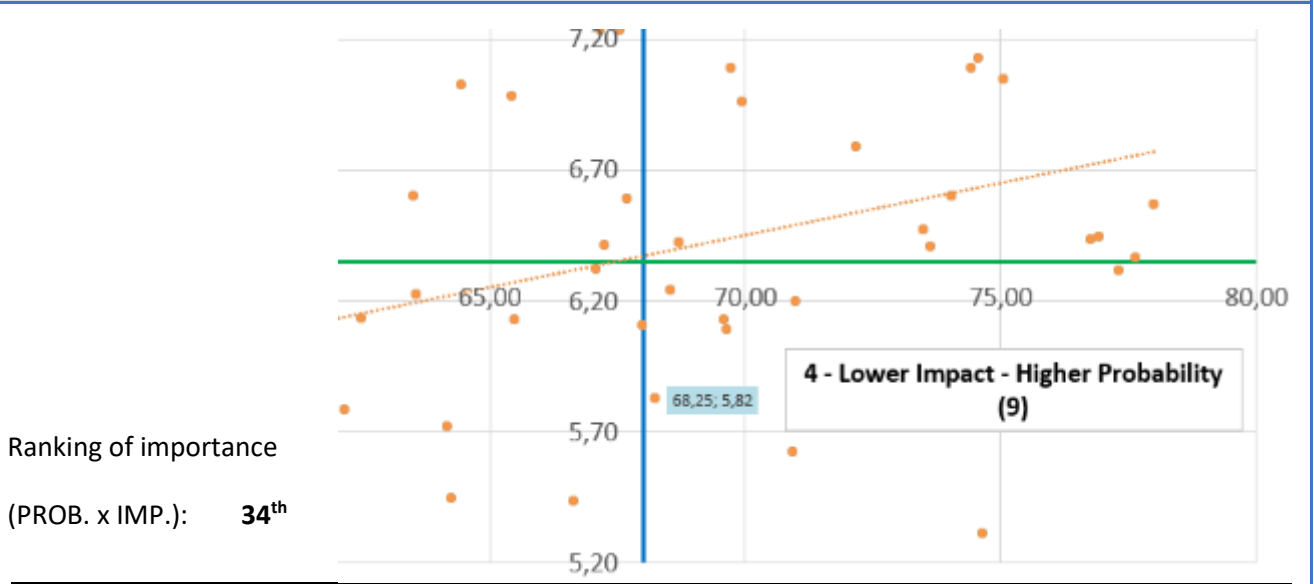
Forecasted Evolution:

LEGISLATIVE INSTRUMENT

11.1 - Illegal logging and illegal timber trade

The type of products covered by the Regulation (EU) No. 995/2010 or EUTR is extended, reducing the number of exceptions and extending the scope to recycled products, medical furniture and seating furniture.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **34th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
68,25	17	**5,82**	1,92	**397,37**

Survey respondents' comments:

Probability

- Forests have become an extremely endangered and scarce resource in some countries. As difficult as it is for furniture manufacturers to procure wood raw materials, reducing the illegal timber is inevitable.
- As a method of regulation is fine. But market surveillance is very necessary.

Impact

- this will have high impact. not only production and sales but it will also influence designers. many alternatives have to be studied. the textiles being used will have to be different. construction and design will play a major role. From a legislation point of view: which legislator is willing to take changes here? What do consumers/end users demand?
- There is a renewed interest and growing concern for forest protection by the society, that would lead to stricter regulations and trazable supply chain.   The market is already creating and offering traceability tools to enhance the value of their sustainably sourced products.
- Their is a need for a developed chains of custody in the different certifications. Also a clear traceability
- The fight against deforestation and the illegal trade in timber will have to be an increasingly central issue within the market: the companies in the supply chain will themselves be the spokesmen of this fair ethical-social battle and increase communication with their consumers , raising awareness of the enormous problems associated with illegal timber trafficking.
- Sustainability in the furniture sector will increase

- Specific furniture sub-sectors will have a great impact due to the limitations of wood use and the costs in final products.
- I wish the regulation will be more ambitious and, in certain case- all safety rules considered- will go far beyond the recycling target and consider more other options like refurbishing, remanufacturing and reusing.
- Furniture producers should have a policy for sustainable wood procurement and a system to trace and verify that all wood originate from legal sources with the availability of tracking it from the forest to the furniture enterprise. Illegal logging and illegal timber trade are still a serious problem in many EU countries and the new stricter legislative measures are in full compliance with the circular economy principles.
- furniture companies will deal with it. it's a fair request. consider also that other countries will set similar regulations and they will ask european companies to prove that their product is in line with their requirements for legal wood
- Extending the scope to recycled products, medical furniture and seating furniture will allow for greater environmental benefits, lower carbon emissions and greater materials savings.
- As far as new regulation apear and its mandatory for manufacturers to take new responsibilities, it will have again an impact in cost but also in new business models and loyalty programs
- Traceability in older furniture items is extremely difficult and costs are likely to be very high.

Forecasted Evolution:

LEGISLATIVE INSTRUMENT

11.2 - Illegal logging and illegal timber trade

The number of countries that sign voluntary association agreements with the EU under the umbrella of the FLEGT Regulation (Regulation (EC) No 2173/2005) is significantly increased, covering most of the world countries.

Summary of statistics:
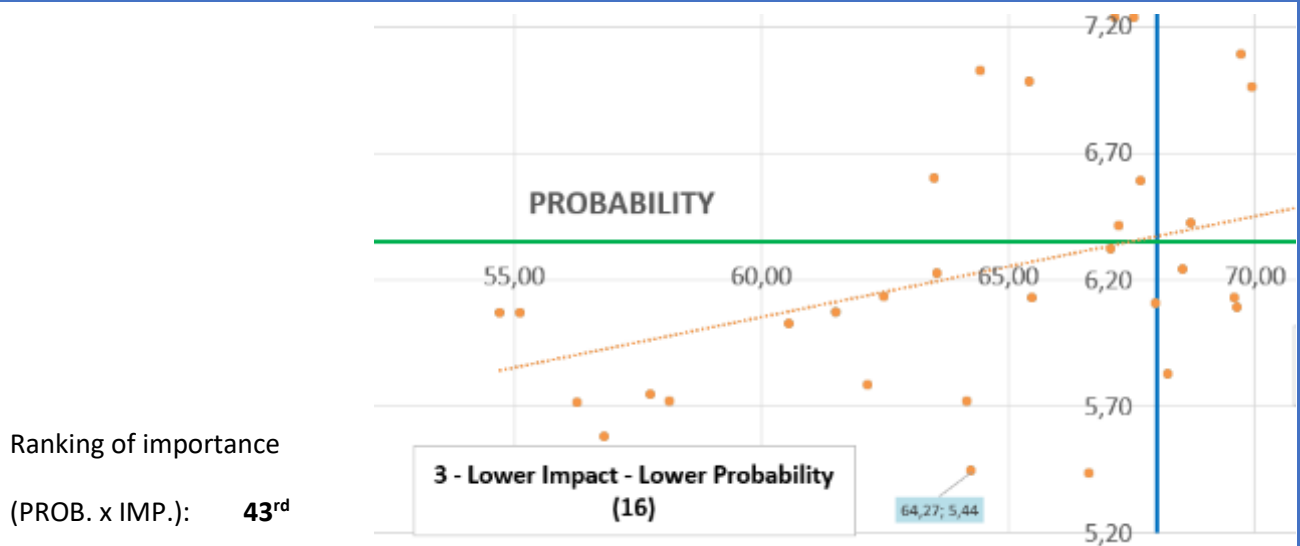
Ranking of importance

(PROB. x IMP.):   **43rd**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
64,27	**18**	**5,44**	**1,83**	**349,92**

Survey respondents' comments:

Probability

- I am sceptical about making these kinds of relations stronger worldwide. Even if a number of countries around the world under this umbrella will increase, the case is about the most important players on the market.
- too many years, only indonesia so far and a couple in the pipeline...
- No feedback
- If I were a non-EU country with a not-so-well economy, I wouldn't bother. Considering other trade materials, like leather, history shows that I can import non-compliant products without much difficulty. I would resent agreements with the EU for the EU's double standard of simultaneously destroying ecosystems and telling stories of protecting ecosystems.
- As a method of regulation is fine. But market surveillance is very necessary.
- a lot of countries will still find exceptions to this rule or allow temporary exceptions that could be prolonged indefinitely..
- I don't know about the FLEGT regulation

Impact

- The share of illegal timber is not so great to cause significant effect.
- This will help to assure the sustainability of forests all over the world.
- The increase in FLEGT and VPA licenses between EU countries and the main timber-exporting countries (countries where problems of labor rights or problems related to illegal logging usually

occur) will increase the level of safety with regard to traffic of the wood raw material on the global and community market: companies will have to invest more in the formation of persronale on this issue

- Reducing illegal logging by ensuring that illegal timber products cannot be sold in the EU will have a major impact on global sustainability and will help improve the climate change impact.
- No feedback
- It's extremely important and influencing due to wood raw materials and flexibility in business.
- it would create a level playing field if all countries would adhere. Asian countries/ they follow their own benefits and want to strengthen their industry. China, the fastest growing economy on earth and its billion consumers and protective measures taken by the Chinese government will certainly jeopardize this regulation..
- it won't be relevant because it won't expand fast.
- Hard to imagine. Many variables of different nature (e.g. geopolitical)
- There is actually an increasing awareness about illegal timber so it will for sure appear in the regulations of many countries
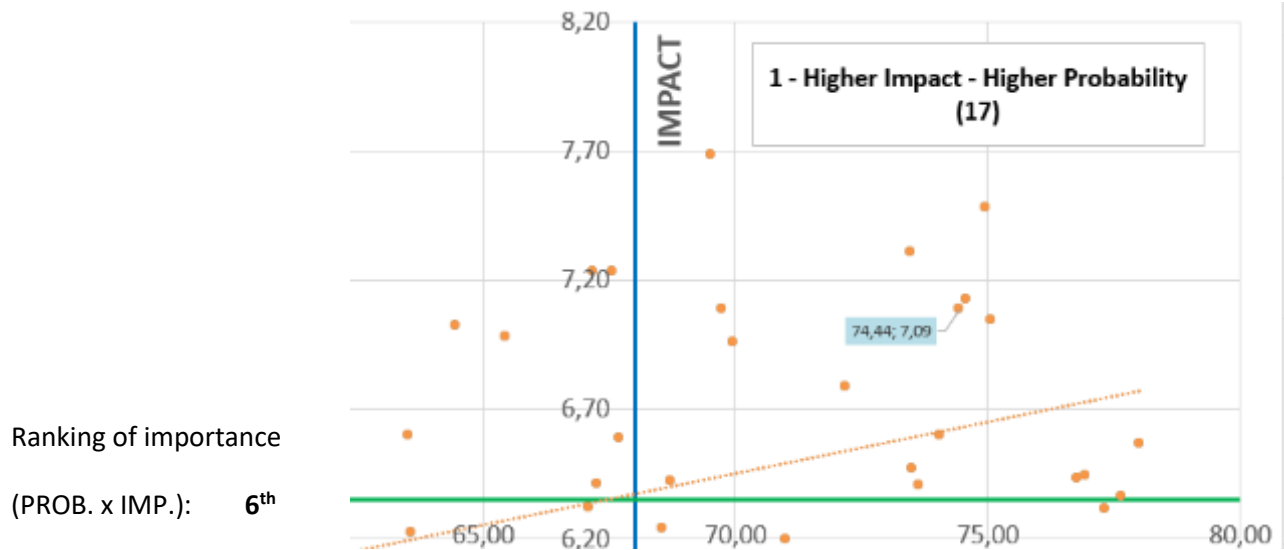
Forecasted Evolution:

VOLUNTARY INSTRUMENT

12.1 - Green Public Procurement

The objective that 50% of public procurement tenders for furniture in Europe include environmental criteria is achieved, following the green public procurement criteria set by the European Union or by criteria set in each country.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **6th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
74,44	**17**	**7,09**	**1,69**	**527,55**

Survey respondents' comments:

Probability
- Environmental criteria narrow the choice of a public service provider, but they are not something that is difficult to fulfill.
- No feedback, but probably rather not too probable?
- in italy is already mandatory in all public tenders.
- I most sincerely hope so
- I agree with the progression of GPP but 50% seems a bit high.

Impact
- This is good for the industry as it will reward responsible practices.
- There is an example to set through GPP
- The values paid for the good would increse because companies would haave to meet new green requirements, besides price.
- The increase in requests within the public administrations of the individual EU member states of eco-sustainable products and low environmental impact, will contribute to favoring a transition of companies towards a concept of doing business based on the principles of the circular economy: companies will have to invest more in R $ D instead, to orient production towards increasing levels of sustainability, contracting stations will have to train more on the requests required for public tenders

- The higher implementation of Green Public Procurement for furniture would motivate the sector to be more sustainable, but the impact on the entire sector would depend on the quantity of sales to the public services. In any case it could boost the pass to a more circular approach of some manufacturers.
- The green public procurement application will be a market dynamizer and will force companies to innovate in their products and solutions
- The environmental criteria in public tender shall be mandatory as already happening in some Italian regions with GPP and CAM (Criteri Ambientali Minimi).
- Since more and more tenders will focus on sustainable criteria, companies will have to find differentiating USPs to position themselves. Chances are big that the most defining USPs for companies are not on product but on service- and business model-level.
- PA will become increasingly sensitive to the green issue and will consequently require it from enterprises
- No feedback
- new market opportunities for ecofurniture.
- it's important and it would be more important in the next years, even for companies that don't sell to the public sector.
- it's already happening in some countries, to get all of them onboard will take a lot of effort from the countries that don't do it yet
- if suppliers in Eu want to stay in business they have to comply. But as lot depends on the purchasing power of the buying organisations and the back up they get form their bosses and peers. this could lead to new innovative business models at the producers. technically this is already possible. role for designers.
- if it is necessary it will be happen
- If it happens it can only be a plus for the wood furniture.
- I consider this very strong because if most of the products in the public areas are eco-friendly the people will get familiar with their impact and they could prefer buying or using such furniture in their daily life. This could be even a marketing instrument for the Circular economy.
- GPP is key to incentivize the shift towards a circular production and consumption model, rewarding those ecosystems that are embracing sustainable business models. The question is, what are public institutions waiting for? Anyway the objective of 50% is too low, it should be 100% by 2030, in this way market would be radically transformed in just few years.
- eco-design and compliance with other "green" regulations will affect the business of furniture manufacturers
- Companies that bit for public procurement tenders will have to move rapidly to a circular furniture model: ecodesign, ecolabels, avoidance of hazardous materials, etc. will be a must for them.
- Administrations were already working on green public procurement criteria. From now on their efforts will be greater and more demanding.
- Green public procurement criteria will for sure have a big influence in many companies' product range, because it's an important part of the market, so companies won't want to lose it.
- It depends on how the GPP criteria are developped. A greater involvement of the wood and furniture industry would considerably improve the quality and the applicability of the criteria.
- GPP criteria push the manufacters to adapt their product ans porcesses to fullfil them
- Increased investment in design and associated research is very likely. Bigger business opportunities on the consumer market are also very likely to occur due to experience earned by companies participating in public procurement tenders and an improved public image of the company.
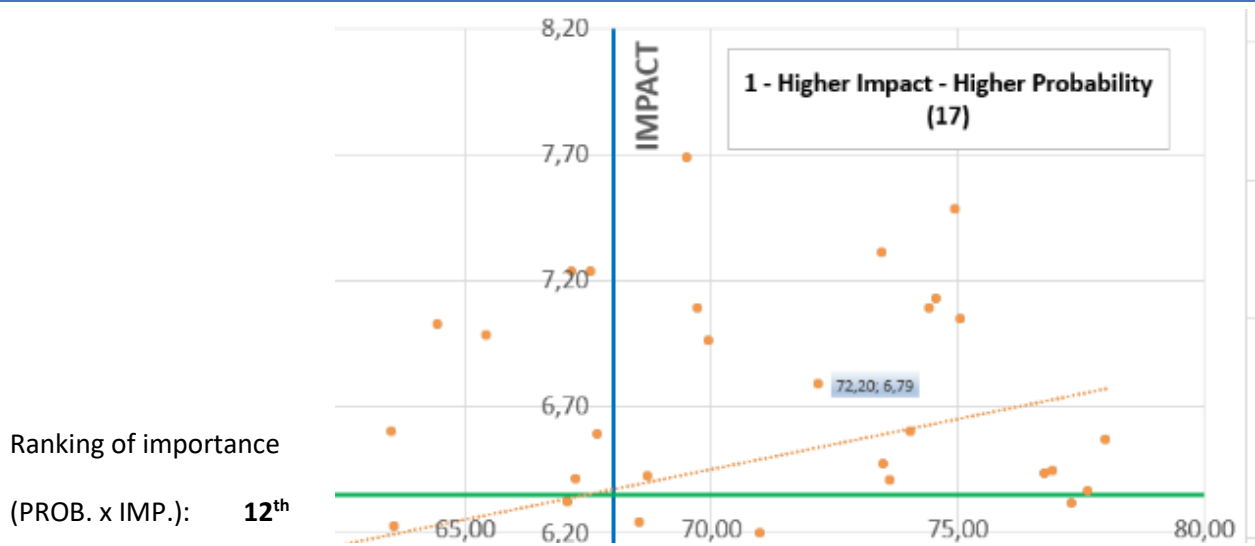
Forecasted Evolution:

VOLUNTARY INSTRUMENT

12.2 - Green Public Procurement

All European countries have developed Green Public Procurement criteria for furniture, either by adopting the EU recommendations or by developing their own criteria (the State of art report shows which countries have developed these criteria in 2017).

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **12th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
72,20	**18**	**6,79**	**1,56**	**490,04**

Survey respondents' comments:

Probability

- it's already happening in some countries, to get all of them onboard will take a lot of effort from the countries that don't do it yet
- It will depend on European regulations that are not an optional.
- Hopefully so, at least in 2030.
- "All" countries is a bit high. "Most" of the country seems more reasonable

Impact

- The states belonging to the European Union will tend over time to bridge the gap in the application of GPP within their public tenders, favoring the transition of companies to compliance with these requirements and making clear, in conjunction with the industrial world, the parameters required in order not to damage the competitiveness of companies at the same time
- The entire European public market will demand products with a lower environmental impact, and therefore companies that until then were not including this variable in the design process will be forced to do so.
- Significant in total amount and as exemple to other sectors
- same as 101
- My suspicious relates to the Eastern European countries - whether they really do follow this.

- Many of the companies in the furniture sector have administrations as clients. The green public procurement criteria that they establish are design requirements for their products if they want to continue selling in these types of markets.
- it's already happening in some countries, to get all of them onboard will take a lot of effort from the countries that don't do it yet
- It will depence on a lot of outside influences
- it is already very important, it will be more important in few years.
- In italy already exist the CAM (Criteri Ambientali Minimi) for GPP.
- if suppliers in Eu want to stay in business they have to comply. But as lot depends on the purchasing power of the buying organisations and the back up they get form their bosses and peers. this could lead to new innovative business models at the producers. technically this is already possible. role for designers.
- Green public procurement will always be an element of market traction and a boost to the development of higher quality products (environmental point of view).
- eu states will standardize the GPP legislation towards enterprises in their public tenders
- Also only added value for wood furnitures
- Green public procurement criteria is already applied in many sectors, furniture won't be an exception and all of the countries will stick to it.
- see previos question
- the adoption is going slower that predicted, thought.
- Increased investment in design and associated research is very likely. Bigger business opportunities on the consumer market are also very likely to occur due to experience earned by companies participating in public procurement tenders and an improved public image of the company.
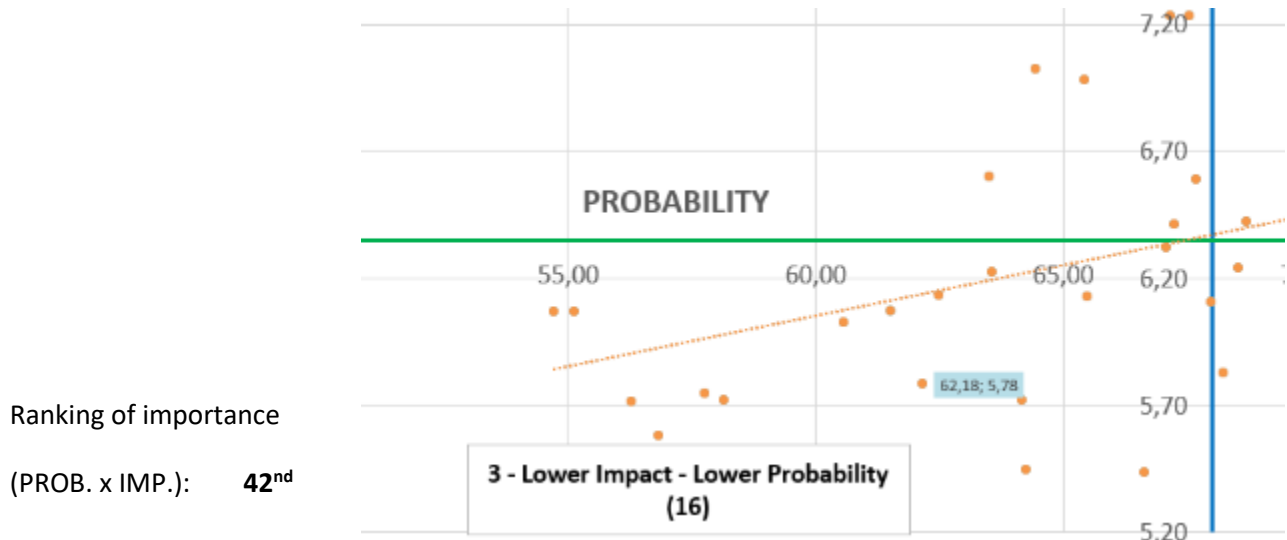
Forecasted Evolution:

VOLUNTARY INSTRUMENT

13.1 - Environmental Management Systems ISO14001/EMAS

In Europe, 25% of companies of the furniture sector have a certified environmental management system, either EMAS or ISO-14001 (the number of companies that currently have these systems certified is indicated in the State of art report).

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **42nd**

PROBABILITY

3 - Lower Impact - Lower Probability (16)

62,18; 5,78

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
62,18	**24**	**5,78**	**2,00**	**359,58**

Survey respondents' comments:

Probability

- EMAS or ISO-14001 have become the emblem of social responsibility. Their application is increasing.
- We're far from that target and there are no motivations to increase this number significantly
- Unless there is a market demand on that or a mandatory regulation, I don't see this happening.
- These certifications could be replaced by others
- no feedback
- Large companies are certified for Environmental Management Systems, in many cases forced by their suppliers. Small factories do not have this pressure and are not certified. The probability of increasing the number of factories with this certificate in a short period of time is not too high.
- It is not a prioritary for the companies the   implementation of environmental management systems. There is a big investment, work overload and   bureaucracy and thechnical knowledge. Most of the companies are micro familiar   companies, which can not invest in such system.
- If I interpret the numbers from the report correctly a big effort will be required to achieve the 25%. With enough carrots or sticks it might be possible, but otherwise it seems unlikely.
- Furniture companies are rather very small companies. The progression will be very small
- For now EMAS is not important standard for the sector. (better ISO 14001)
- certainly not EMAS. iso 14001 could have some room to grow but 30% is a lot.

Impact

- EMAS or ISO-14001 certification has led to many improvements that will be applied on a sectoral scale and will have a huge impact on the nature of processes in the furniture industry.
- This depends strongly on the way compliance is being enforced. are violators really prosecuted? If so pr and marketing could be strongly affected. it also depends if public opinion will be toward compliance/ if so: again this offers business and marketing opportunities.
- The market, as well as the possibility of participating in public tenders and regulatory constraints, will make the certifications related to environmental and safety management systems increasingly compulsory: the market and consumers will focus more strongly on sustainable companies that produce products in the name of circularity and respect for the socio-environmental sphere.
- no feedback
- It is a "normal" evolution in many industrial sectors. It will be a requirement for public procurement tenders to have a environmental management system in place
- If this level of implementation of Environmental Management Systems is achieved, the impact on the sector would be significant because more companies would have a life cycle thinking approach in their operations and in their relationship with stakeholders. This would favour the implementation of circular approaches in the sector and the manufacture of more sustainable products.
- I hope in the future 100% of furniture companies will have a certified environmental management system.
- According to the data, provided in the State-of-the-art report, Bulgaria ranks among the top ten countries which have ISO-14001 certifications for the "manufacture of wood/wood products" sector in Europe (2017). In my opinion the number of certifications related to the environmental performance of furniture companies will significantly increase in the near future due to the growing societal concern about sustainable use of natural resources.
- EMS are perfect instruments to improve the environmental performace, although industry still need to see that the efforts are worth it
- It will be a strong instrument for the companies to differentiate on the market and very likely to be required by professional buyers on the market (retail, buying chains etc).

Forecasted Evolution:

VOLUNTARY INSTRUMENT

13.2 - Environmental Management Systems ISO14001/EMAS

Customers, final (B2C) or intermediate customers (B2B), value positively that the furniture products supplier in the sector has a certified environmental management system, either EMAS or ISO-14001, which has become a competitive advantage.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **39th**
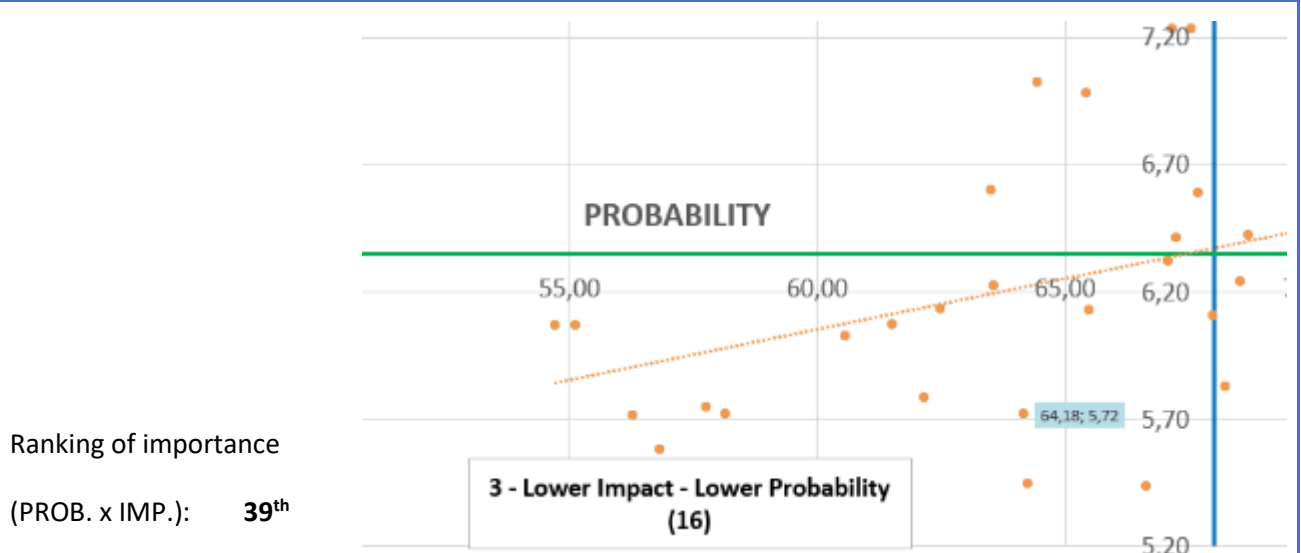
PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
64,18	**20**	**5,72**	**2,14**	**366,96**

Survey respondents' comments:

Probability

- Without precision benefit impact are EMS certification just formal issue.
- they already do.
- These systems are long established and there is insufficient evidence to suggest that any major evolution will happen in the next 10 years, particularly in b2c where this is not seen as a consumer priority in purchasing goods.   Other than public procurement, or corporate b2b n certain sectors (e.g. consumer electronics) it is unlikely that an EMS will become more prominent. Circular design and circular business models are more likely.
- These certifications could be replaced by others (more complete and current)
- The customers won't know what EMAS or ISO-14001 means. A more accessible, readable, easily-understandable certification is desirable.
- Since both EMS systems are well established and in existence for a long time and neither are highly demanded by either B2B or B2C, this is unlikely to change.   Instead demand will be placed on circular business models and circular design strategies.   An increase in market demand for EMS is likely to come from an increase in green public procurement.
- one can always hope. business reality could be that only lip-service is being given. a lot depends on either the public opinion and on the policy of the buying organisation.
- No feedback
- ISO 14001 or EMAS will be a mandatory requirement, but not as an element of differentiation against competition but as a minimum requirement almost mandatory.

- EMAS or ISO 14001 have existed for a long time now. And what happened in the automobile sector has not happened yet in the furniture industry.
- Customers may value more a certification assigned to the product they buy rather than on the company that produces them, it is a limitation of EMAS/iso14001 for these types of products.
- unfortunatelly final costumer still do not see the added value of EMS

Impact

- EMAS or ISO-14001 certification has led to many improvements that will be applied on a sectoral scale and will have a huge impact on the nature of processes in the furniture industry. Furthermore the consumer needs have improved with environmental ones.
- To make this scenario happen, it is necessary a great communicative and disseminative effort to make the customer aware of the meaning of the certification. The creation of many different labels, in and outside the furniture sector, is often not clear to the final customer.
- The positive value of B2C or B2B on certified environmental management systems will puss the industry towards their implementation. Big companies will continue with this certification, and SMEs litlle by litlle will join this movement.
- The market and consumers, as is already demonstrated now, will orient their horizons towards sustainable companies that produce as many sustainable products: ever more attentive to the technical and environmental performance of the articles, consumers will favor the rise on the market of companies devoted to sustainability.
- Similar to the previous point, if customers value positively that manufacturers have an environmental management system, it would affect the sector, because most of the companies will try to be certified, improving the environmental profile of the products and processes.
- No feedback
- it's already relevant dor B2C (not emas though. no one asks for it)
- I value it positively as well.
- I doubt that consumers really consider the ISO standards (they do not know what ISO is about).
- I consider this very strong due to the fact that the customers can influence companies policies.
- Customers are increasingly demanding. Social networks have a great impact on the population, and this pressure reaches manufacturers.
- a lot depends on the way follow up is given.
- Once customers demonstrate that they give value to these certifications a big amount of companies will get them.
- Investement in certification and marketing, as well as in training of staff needed. Higher pressure from the market to stay competitive.
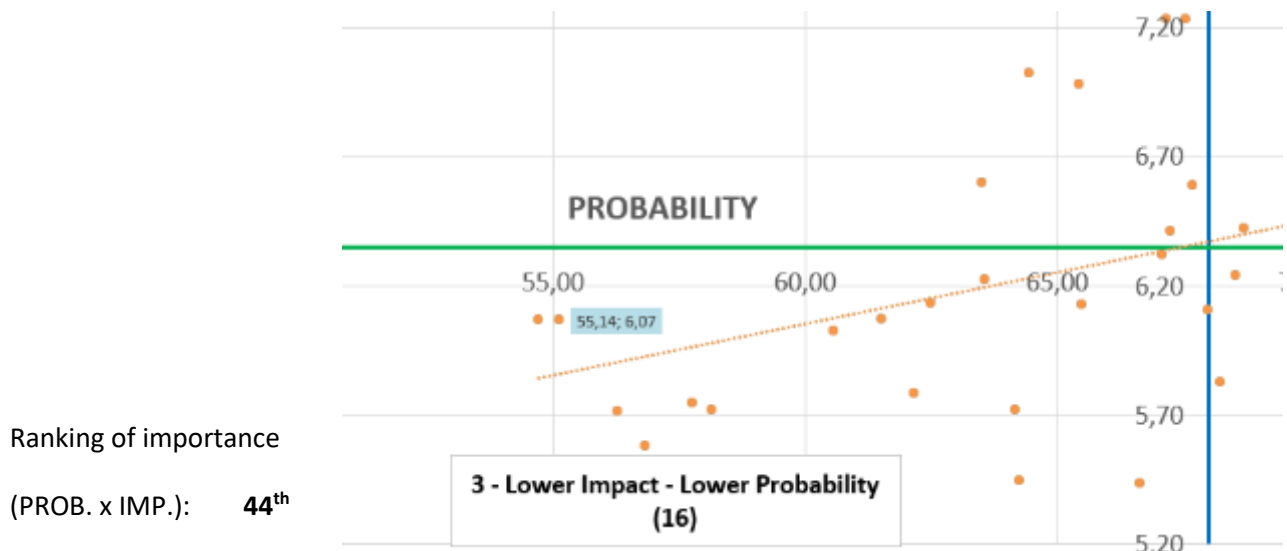
Forecasted Evolution:

VOLUNTARY INSTRUMENT

14.1 - Ecodesign ISO14006

10% of the European furniture sector companies have an Ecodesign ISO-14006 management system.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **44**th

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
55,14	**23**	**6,07**	**1,90**	**334,45**

Survey respondents' comments:

Probability

- We're far from this number and competitive advantages are not clear
- To have an ISO-14006 Ecodesign management system it is necessary to have a research department. Only large companies can afford that.
- There is insufficient evidence that businesses are currently using this system. It is unlikely its application will grow in prominence given the limited awareness of the standard while the value is insufficiently clear. It is more likely that other ecodesign and CE standards will be applied.
- There is insufficient evidence on the uptake of 14006 in any sector. There is limited awareness of the standard and even smaller market demand although this standard has existed for some time. It is more likely that circular design strategies will be demanded from the market instead.
- The percentage will surely be lower. In addition, the relative aspects of the life cycle perspective will increasingly have a presence in traditional environmental management systems (ISO14001 and EMAS).
- The evolution in the number of companies certified with ISO 14006 has decreased in recent years at the state level, and at the European level has never been very important.
- No feedback
- it's not used at the time being. could grow but there are a lot of companies engaging in ecodesign policies without even looking at 14006. so maybe other tools will drive the shift towards ecodesign.
- it will require a lot of good will and persuasion to make this happening in the whole sector.
- It doesn't seem likely with the current mindset and business models. With the right legislation or perhaps some very inspiring role models, it could work.

- Furniture companies are too small for a management system. Too small to achieve 10%.
- Due to the fact that there are a lot of micro, small and medium companies in the sector i don't think that this evolution is going to happen soon because of the capacity of the companies.
- 10 is a quite low percentage but as far as there is a low market demand for sustainable products, this is not going to be a competitive advantage for furniture companies. Therefore they will only implemented if the board is committed because of their values or a differentiation is taking into consideration.

Impact
- The number of furniture companies across Europe which will establish, maintain and continually improve their management of ecodesign as a part of the environmental management system will significantly increase within the next years. The main drives for the adoption of EMS will be will be legislative, political and societal.
- The implementation of ISO14006 is unknowledge by most of the industry and will suposse a big challenge for them. Only will be implemented by big companies and few of SMEs.
- The impact is important because most of the furniture we are using comes from these large factories that have included Ecodesign
- Same supply chain, production, business models,... arguments that I've talked about in previous answers.
- No feedback
- it is an investments and needs to marketed taking competition in consideration as well. so it really is a business issue. And of course a mentality shift is required to make this work.
- If this level of implementation of Ecodesign management systems is achieved, the impact on the sector would be significant because more companies would design their products taking into account a life cycle perspective. This would favour the implementation of circular approaches in the sector and the manufacturing of more sustainable products.
- I see this system less diffuse in the field.
- Environmental questtions are actual questions, they are on the table in every discussion circles. Innevitably, these questions will affect the sector.
- Ecodesign will be an increasingly required parameter for items in the wood-furniture supply chain: from the beginning the producer must think of a product throughout its life cycle with minimal environmental impact and with the possibility of recovering most of the material at end of life cycle. The Circular Economy Package of EU directives focuses on the key role of this criterion in products placed on the EU market
- Both the Circular Economy action plan and environmental management systems are aimed at the environmental management of the life cycle, so Ecodesign and its management within the company will be mandatory in the coming years.
- Investement in certification and marketing, as well as in training of staff needed. Higher pressure from the market to stay competitive, but also bigger rewards from the market (better prices, better public image etc).
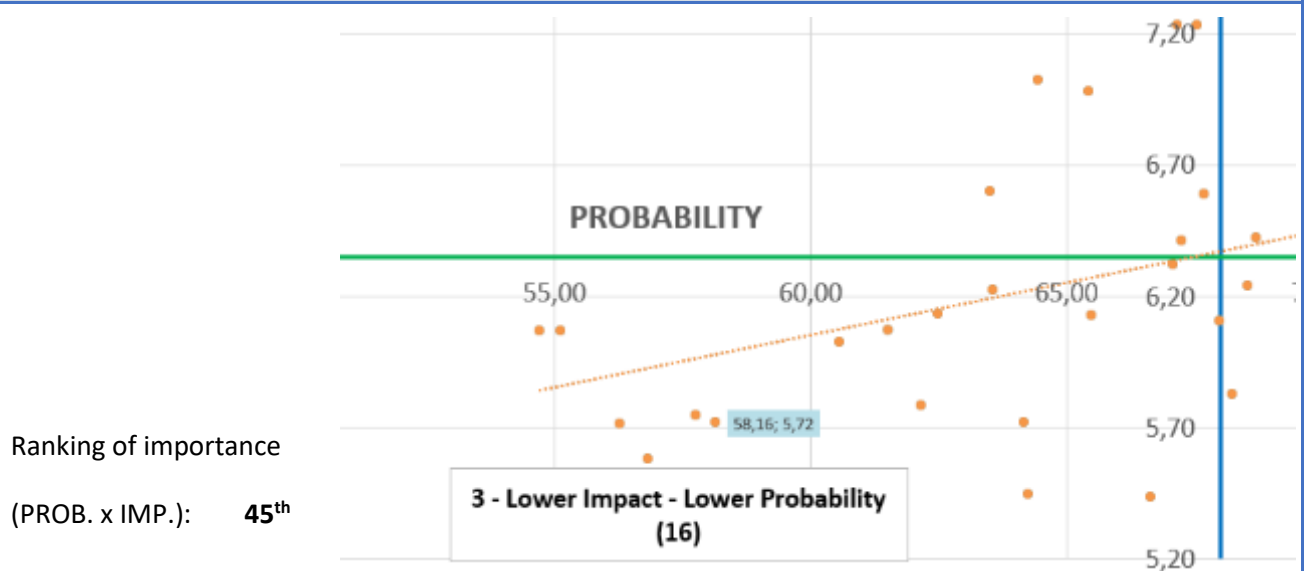
Forecasted Evolution:

VOLUNTARY INSTRUMENT

14.2 - Ecodesign ISO14006

Customers, final customers (B2C) or intermediate customers (B2B), positively value that the furniture products supplier in the sector has an Eco-design ISO-14006 management system, which has become a competitive advantage.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **45**th

PROBABILITY

3 - Lower Impact - Lower Probability (16)

58,16; 5,72

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
58,16	**24**	**5,72**	**1,82**	**332,54**

Survey respondents' comments:

Probability

- The consumer needs have improved with environmental ones. Market gives the route to the future and it goes through the Eco-design ISO-14006 management system.
- will be forced by the market if this happens.
- Unlikely that there will be increase in market demand for 14006 given its very low levels of uptake in any sector.   It is more likely that circular design strategies will be demanded instead.
- There is insufficient evidence that businesses are currently using this system. It is unlikely its application will grow in prominence given the limited awareness of the standard while the value is insufficiently clear. The likelihood of customers demanding this is unlikely. It is more likely that other ecodesign and CE standards will be applied that can bring circular and sustainable value to the chain.
- The ISO 14006 standard is very little known among consumers, so it is difficult for them to appreciate it positively.
- The design and the price will stay the main buyer criteria. Only a limited number of buyers will put ecodesign at the 1 place. For B2B this might be different for political and promotional reasons
- Only if it has a neutral impact on cost
- No feedback
- Need more proof on impact to customers value demand...
- more relevant than iso 14001.
- ISO 14006 doesn't seem to have met a "big success" so I doubt it would be very different in 2030.

- I think the interest can be high especially in the area of GPP.
- I don't think that the mass of the consumer are willing to pay for it.
- good design practice will result in good products, customes will chase good products. i am not aware of B2B customers that are asking for 14006 at the moment, i don't think it will boom in the next years, while ecodesign will certainly grow as a principle.
- Customers won't know what this certificate means. A much stronger competitive advantage will come from this eco-designed product being very qualitative, convenient and fitted to the user's needs.

Impact
- The implementation of ECO design management systems will introduce big changes in the productive processes, in the raw materials, and new challenges in marketing.
- The environmental management systems accredit the activities of the companies, but the Ecodesign management systems accredit the environmental benefits of the companies' products. Customers will check in the purchase process which products offered are more environmentally sustainable.
- The competitive advantage of the furniture products supplier that has an ISO-14006 ecological design management system will have a significant impact on the sector; companies that have not implemented the Eco-design will be forced to include it.
- Same arguments as given previously.
- No feedback
- it is an investments and needs to marketed taking competition in consideration as well. so it really is a business issue. And of course a mentality shift is required to make this work.
- As ISO14006 will not be a generalized certificate, it will continue to be a differentiating factor in the market (especially for public purchase).
- Once many companies apply the ISO 14006 the way they create products will change drastically and so will the environmental impacts they provoke
- Opportunity to get better prices for the furniture products manufactured and to reduce costs with waste management and recycling. Incentive for and consequently increased number of certifications in the industry and as a result bigger costs with certification and training.
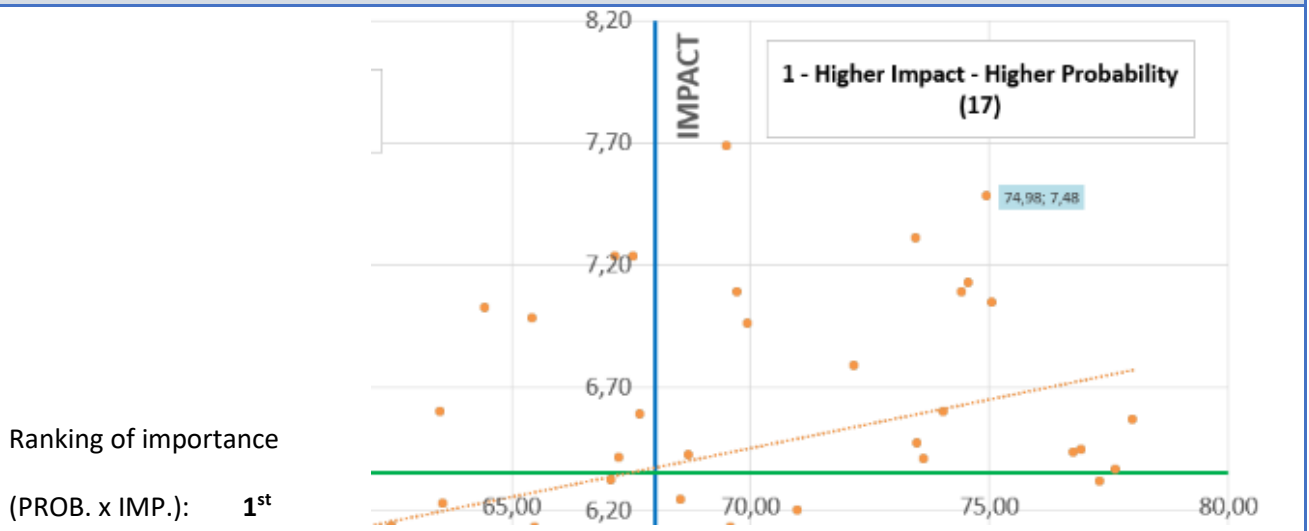
Forecasted Evolution:

VOLUNTARY INSTRUMENT

14.3 - Ecodesign ISO14006

The furniture is designed to reduce the impact of used raw materials (use of recycled material, reduction of hazardous substances content, use of wood with lower environmental impact, use of proximity wood, etc.).

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **1st**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
74,98	15	7,48	1,61	560,72

Survey respondents' comments:

Probability
- Reducing the value of materials at average total costs enables manufacturers to add more value and gain profits. The evolution is absolutely probable.
- Young designers are committed with minimal material use, therefore it is possible that changes in new products are possible. On the other hand most of design schools do not consider impact of materials as a topic to be taken into account.

Impact
- Reducing the materials in the average unit costs will give the opportunity to producers to accumulate enough to invest more and implement more innovations.
- will completely alter the current business models. will also change the type of suppliers to the producers. so it is against the interests of a range of parties that have a position in the whole of the supply chain. The impact is therefore very high. will alter the business.
- Use of recycled material, reduction of hazardous substances content, use of wood with lower environmental impact, use of proximity wood, etc. are becoming relevant into everyday products.
- to some extent it already happens. it will be more and more important in the next years even if there is no claim about it, a product made in that way will end up in being more competitive.
- This will represent a major change in production processes
- The use of recycled raw materials has been   introduced in the sector with good results,   because mostly of economical reasons rather than environmental.
- The impact of climate change and extreme events forces companies to rethink their supply chain. Companies choosing materials that use less water and less energy, recycled material, materials

- coming back at the end of their (first) life, will face less risk in the procurement of materials. It will be a smart business strategy, not only an environmental friendly choice.
- The change on the way the raw materials are used in the sector would have a significant impact because it would be required efforts to analyse the possible alternatives with lower impact, for example availability and quality of recycled materials, their technical performance, their durability, etc. It would be similar for other proposed changes on use of less hazardous materials, etc. Therefore, the manufacturers would have to invest on R+D+I, laboratory tests, manufacturing trials, etc.
- Nowadays consumers are more sensitive to the environment protection issues and prefer to buy more environmentally friendly products, including furniture. I expect the adoption of more and stricter ecological criteria for awarding the different eco-labels for furniture products, such as the criteria of the EU Ecolabel for furniture, valid until July 2022.
- New production technologies will further amplify both the search for new materials, material efficiency, and the way they can be reused, recycled or remanufactured.
- Most remains to be done.
- increasingly important recycled raw material for both semi-finished and finished products.
- In the future, the wood-furniture sector will focus on rationalizing waste and using it both to support its own production cycle again or to use them in its energy supply; from the lesser use of virgin raw material and an increase in the rate of reuse and recycling, new jobs will be created and new supply chains will be created, based on the concept of proximity and cascading use of wood
- ecological from the start, not only at the end the life-cycle: this demands new ways of working, designing, producing, etc...
- Ecodesign takes into account all environmental aspects and their associated impacts throughout the product's life cycle, thus providing the customer with a holistic view.
- Ecodesign is key for the transition to a circular economy so the doubt is about the impact coming from the standard and certification not the Ecodesign itself. Design is a creative process, that is in contrast with efficiency and frameworks, so, agreeing that a framework might be useful to order the process, compare and classify, the ecodesign will be generating impact if we make it profitable for the companies and valuable for the customers, not just to display another certificate.
- Design processes will have to be modified in order to take into account new regulations and consumer requirements on ecodesign and use of raw materials with low impact.
- All actions designed to preserve resources, eliminate hazardous chemicals and reduce the impact on the environment and humans will have a strong impact
- Decrease of costs with waste management and recycling of furniture items but increased investment in research and design as well as in awareness-rising actions.
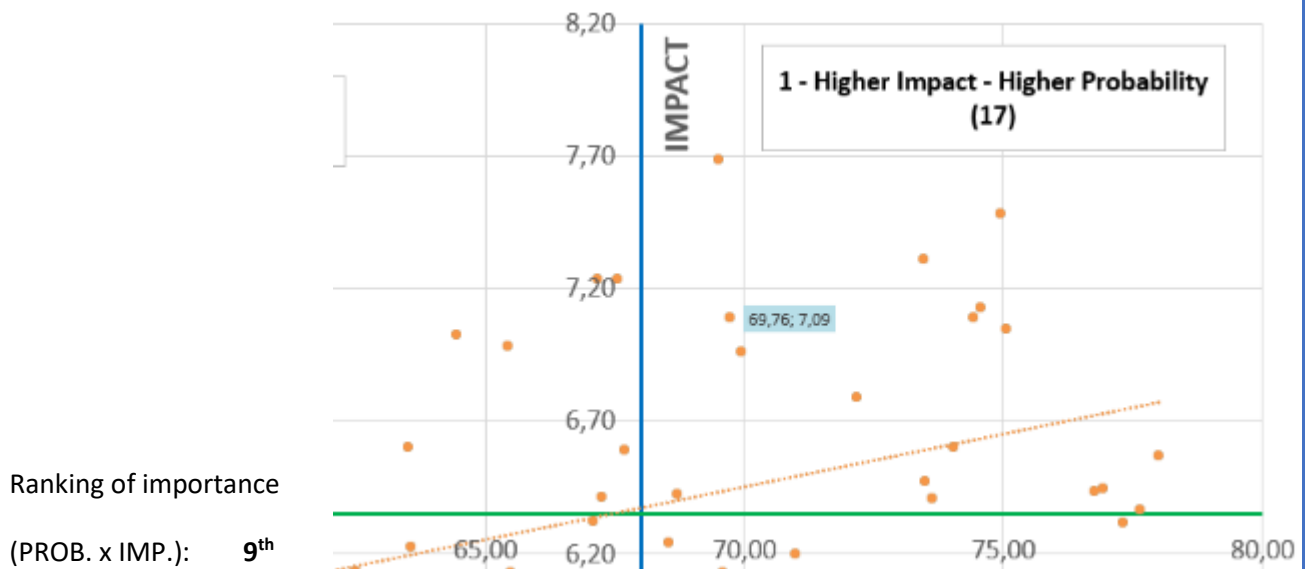
Forecasted Evolution:

VOLUNTARY INSTRUMENT

14.4 - Ecodesign ISO14006

The furniture is designed to extend its life cycle (more resistant materials/joints, facilitate its repair and maintenance, etc.).

Summary of statistics:

Ranking of importance

(PROB. x IMP.): **9th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
69,76	**19**	**7,09**	**1,84**	**494,35**

Survey respondents' comments:

Probability
- Extended life cycles may not be particularly desirable by some manufacturers.
- Why – at the moment it is not a strategy
- only if the business model changes
- It depends on the business model. If the model is still lineal this won't happen.
- I don't think that this is going to happen soon because the companies want the people to consume more in order to produce more and have benefits from their work.
- Customers are increasingly following the rules that fashion sets. Fashion is very involved not only in our way of dressing, but now it is also entering the design of the house. That makes the life we give our furniture is shorter and shorter.

Impact
- The impact if the instrument is implemented will be great in the sense of the reducing the revenues due to reduced sales in national or in ternational markets.
- Will also create room for repair shops and second hand shops/ vintage shops and the like. large retailers may open shop in shop for used or repaired furniture. will completely alter the current business models. will also change the type of suppliers to the producers. so it is against the interests of a range of parties that have a position in the whole of the supply chain. The impact is therefore very high. will alter the business.
- This will require to redesign all products with new design for the circular economy criteria.

- This will require designers to reskill, designing for circular business models, e.g. repair. It will require major shifts in organisational culture, e.g. move away from sale of single use disposable items.
- This will require a significant up-skilling for furniture designers. Furniture producers will need to significantly increase their knowledge of failure points to ensure products are designed and produced to be more robust and repairable. This will require a large culture change moving beyond short life and cheap products.
- this wil be force by regulation, and it will possibly make room for those product as a service initiative that everyone is waiting for because to do that, you need reliable products.
- This change could have a significant impact if the durability increase (e.g. better materials) or if changes in the design imply a higher final cost of the product. Therefore, the final impact on the sector will depend on the customer willingness to pay this higher price.
- These strategies will encourage the establishment of new business models.
- The lifetime of a furniture product is a key factor in its life-cycle assessment and products with extended manufacturer's guarantees (e.g. 5 or more years) are more likely to be of good quality and durability. The continuous provision of spare parts, design and construction which facilitate the repair, reuse and recycling, as well as the provision of clear instructions regarding the disassembly and replacement of damaged parts, will be of greater importance.
- Strong impact because companies will have to focus more on service than products. There will be strong impact in business and organizational model
- simpler if the sector is equipped with tools (EDSS Environmental decision support systems)
- Materials durability and design for disassembly, reuse, upgrade will be key strategies in the future.
- It would help the sector if this was designed in from the outset.
- If the trend of customers is to buy more durable furnitures the impact can be great compared with low cost products.
- I think this will have a huge impact because people won't consume unnecessary.
- Ecodesign is the first tool proposed by the circular economy. It try to prevent waste before they appear. Therefore, products can be designed to be returned back to other product systems.
- Companies can't implement product as a service models without considering a long life cycle. Weak or difficult to repair products won't survive the different users (and the model won't be economically viable if the maintenance costs are too high).
- Circular economy is a need. We are destroying our planet.
- Can result in lower produced volyms.
- Again, not so much on product level, but immensly on business model.
- If an extended life cycle is part of the design criteria the products that the sector will offer will be really different than the ones they are producing now. This will also impact their business model.
- Business models need to be changed and costs will be likely to be higher (training, organization of processes, technologies, materials etc) as well as sale prices to compensate a slower sale growth. If products manufactured within EU will be too expensive and without the necessary tools and their reinforcement from the legal framework, the EU market could become increasingly import-oriented, which will jeopardize the EU furniture sector.
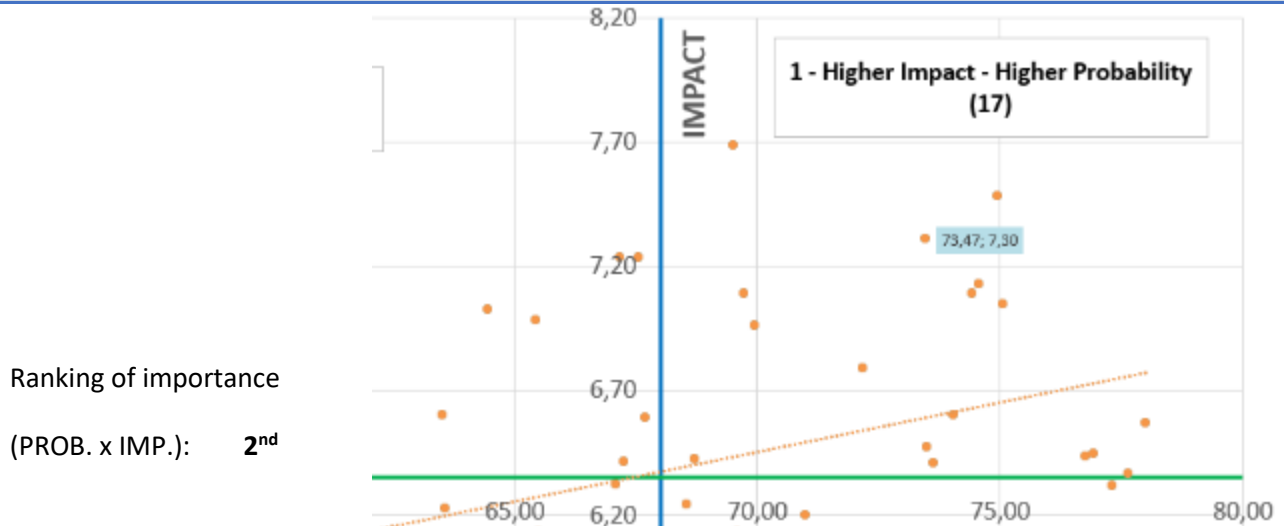
Forecasted Evolution:

VOLUNTARY INSTRUMENT

14.5 - Ecodesign ISO14006

The furniture is designed to optimize its recovery at the end of its life cycle (to facilitate materials disassembly and separation, modularity for reuse of certain parts, reuse and remanufacturing enhancement, etc.).

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **2nd**

PROBABILITY (mean value)	**PROBABILITY (Standard Devation)**	**IMPACT (mean value)**	**IMPACT (Standard Devation)**	**IMPORTANCE (PROB x IMP.)**
73,47	**18**	**7,30**	**1,61**	**536,65**

Survey respondents' comments:

Probability

- To reach this point, design schools need to completely redefine the design process. Some are on this path, but many are not
- Producers are not sensitive to this question   because customers don't require this.
- It depends on the business model. If the model is still lineal this won't happen.
- I don't see the furniture as designed to optimize its recovery at the end of its life cycle nowadays

Impact

- Will also create room for repair shops and second hand shops/ vintage shops and the like. large retailers may open shop in shop for used or repaired furniture. will completely alter the current business models. will also change the type of suppliers to the producers. so it is against the interests of a range of parties that have a position in the whole of the supply chain. The impact is therefore very high. will alter the business.
- This will require new design strategies, focusing on the circular economy.
- This will require designers to reskill, designing for circular business models, e.g. disassembly, modularity etc. It will require major shifts in organisational culture, e.g. move away from sale of single use disposable items to maintaining value beyond a single life.
- This will require a significant up-skilling for furniture designers.   Furniture producers will need to reskill and possibly change their factory to facilitate remanufacturing and component reuse.   This will require a large culture change moving beyond short life and cheap products. It may require a change to their supply chain.

- This impacts the full supply chain, design of product and manufacturing of product.
- this could be push by taxation, EPR schemes, or even customer demands. it will be a major change.
- This change could have a significant impact on the sector because it would require to completely re-think the product. Nowadays the design is focused on improving the assembly and use. This new approach should consider the end-of-life, modifying the type of fasteners, modularity, etc. There is a risk of trade-off between facilitating the disassembly and the durability of the product, which should be treated adequately.
- These features will be more nd more required from the market
- There will be a similar treatment than in the WEEE sector. It will be very convenient to implement a system to track the wood products from its origin.
- The more legislation on EPR the more this will happen.
- The influence could be important if ecomodularity is applied in the design of the rates of collective management systems.
- The increased consumer environmental consciousness will increase the demand for sustainable furniture products, which can be assembled or disassembled using common basic tools and unskilled labour.
- The biggest challenge (and open question) here is wether or not the take back schemes are centralized by the government (nationally or European), or installed by the companies themselves. The higher the level of control a company can keep, the higher the customer retention, market share, innovation speed, and strategic advantage will be.
- See answer on Q.126: demands a new way of designing and producing the furniture (less glue and/or other chemical products). There will be also new restrictions on the finishing (varnishing/painting) of furniture.
- One of the factors that leads to uniqueness in the customer's mind
- If companies are forced to be responsible then they are more likely to design for whole life thinking. Especially if there are commercial benefits.
- I hope this will happen in the future.
- Ecodesign is the first tool proposed by the circular economy, thinking also at the end of life of the products and improving on them.
- Ecodesign is key to enable Circular Economy advantages to emerge. Without circular design there is not profitable CE.
- Design and production processes will necessary change to ensure its recovery at the end of its life cycle. It will be extende the use of repairment of furniture, by disassembly parts.
- Because the producer have to take back the products it this will make it cheaper
- These criteria will be applied in every sector, and this includes furniture, where materials with value even when they are waste are common (like steel, copper or aluminium). To facilitate recovery must be something mandatory.
- Design for desassembly is a key issue in order to have an efficient end of life of the products. if not, the solutions proposed are not really working 100%
- Pioneers will be steadily followed by the large majority. Reusing parts is likely to help decreases in new raw materials costs, but will increase design and training costs, as well as (very likely) the predominance of functionality over appearance in design.
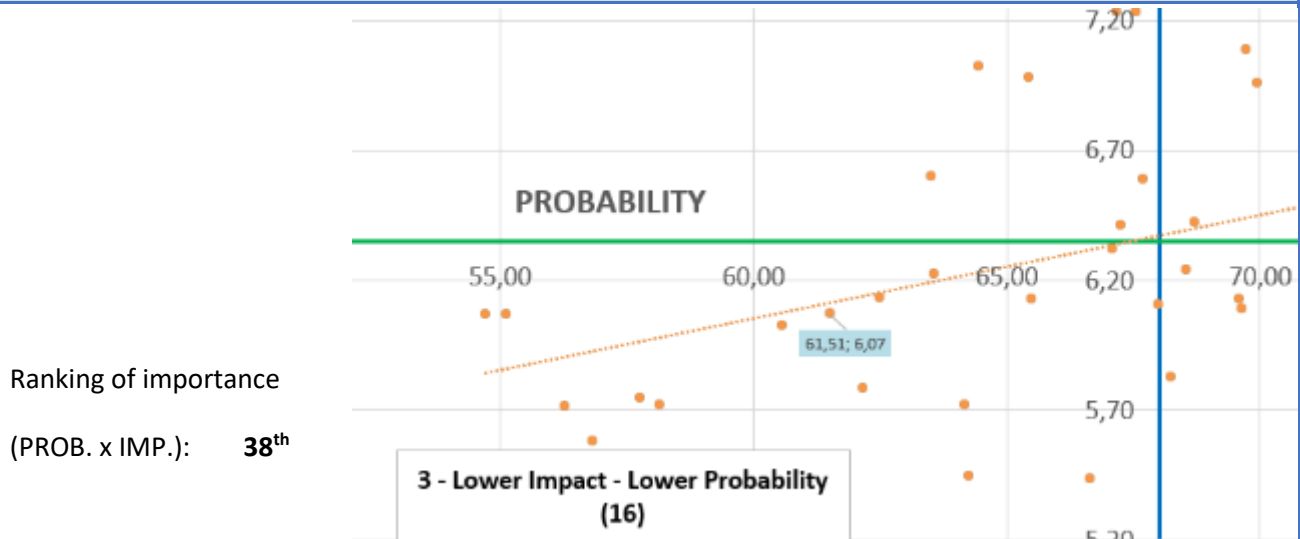
Forecasted Evolution:

VOLUNTARY INSTRUMENT

15.1 - Ecolabels (Type I, II, III)

Customers (final or intermediate customers) positively value that the furniture products have a Type I ecolabel (according to ISO 14024), which has become a competitive advantage.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **38th**

PROBABILITY

61,51; 6,07

3 - Lower Impact - Lower Probability (16)

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
61,51	**22**	**6,07**	**1,78**	**373,07**

Survey respondents' comments:

Probability

- Type 1 ecolabels have failed. Final consumers do NOT recognise these labels
- simpler if the number of labels is reduced. less label quantity but more quality and harmonisation
- Schemes like EU ECOLABEL for instances, are very positives but industries still has a hard time trying to understand/comply all the criteria
- Price and design will stay the most important criteria for buyers
- no feedback
- In the future, Type I labels will not have as much weight as the systems of comparability between products.
- European markets are very different one to the other. As far as this is neutral on costs or it could work, as an added value.
- Customers don't want many confusing labels, likely they won't distinguish between on all of them, making the competitive advantage rather small.
- Consumers are not clear about the meaning of the different labels that a product has. It would be necessary to unify the existing labelling systems.
- B to B yes because they have professional buyers. Consumers: less relevant since it requires special knowledge.
- after tho set of ecolabel criteria wich went directly to trash, i lost hope that a third one would be better...

Impact

- This would have a significant impact in the sector because the manufacturers will improve the environmental performance of their products to comply with the requirements of the ecolabel type I. The key point would be how relevant this ecolabel is for the customers (relevance in their purchasing decision) and if they understand it correctly.
- The significance of ecolabels for furniture products will significantly increase in all EU member states in the next years due to the growing environmental concern of the contemporary society regarding the environmental impact of products throughout their life cycle.
- not until the EC will change the way they set up the criteria. industry has to be involved like in technical regulation, or like the sevilla process under IED directive for the BREF
- no feedback
- It should be convenient to move from a voluntary system to a mandatory regulation through the use of a classification similar to energy using products or appliances (A to G)
- Investment in certification and label aquisition, training and awareness-rising
- Ecolabelling is important to influence the decision stage, however it is should be supported with a better and clearer explanation of the meaning to avoid a misunderstanding or a loss of perceived value, becoming a loss of sales opportunities.
- depends on how compliance to this norm is enforced. technology is no barrier here but requires redesign?
- Customers can change companies polices.
- Clients (especially young people) are very aware of the need to save the planet. That is why they demand that all the products they buy (including furniture) have an eco-label.
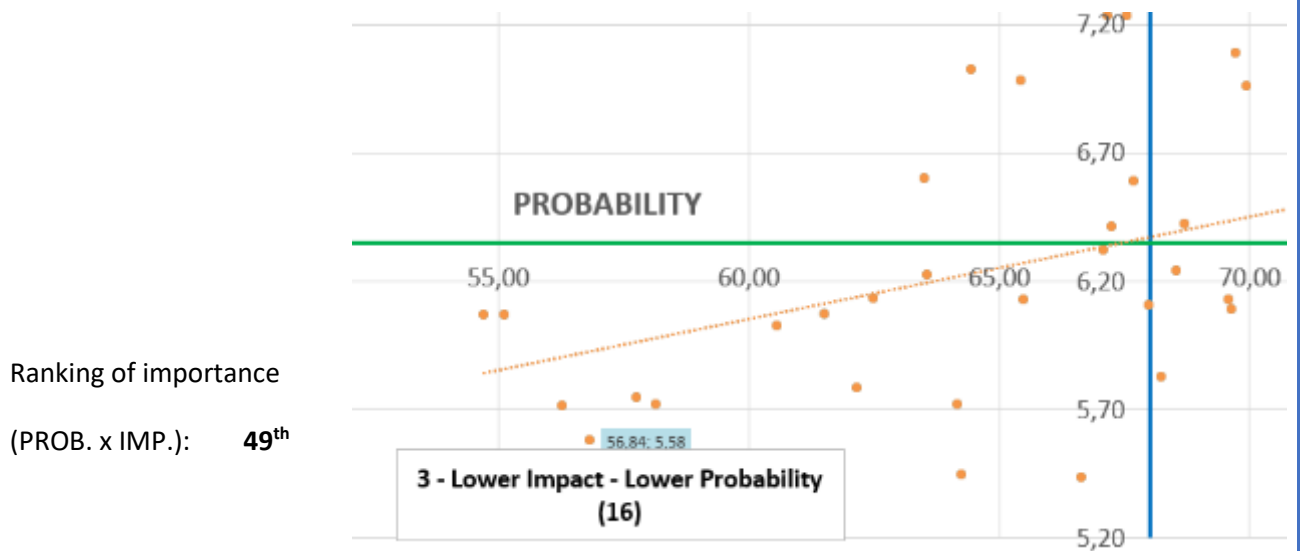
Forecasted Evolution:

VOLUNTARY INSTRUMENT

15.2 - Ecolabels (Type I, II, III)

Customers final customers (B2C) or intermediate customers (B2B), positively value that the furniture products have a Type II ecolabel (according to ISO 14021), which has become a competitive advantage.

Summary of statistics:

Ranking of importance

(PROB. x IMP.): **49th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
56,84	21	5,58	1,93	317,02

Survey respondents' comments:

Probability
- Unfortunately, environmental self-declarations are the main causes of generating greenwashing.
- The more demanding a regulation is, the more difficult is for the customers to understand it and create a new demand.
- Self-declared claims won't make a difference
- Same as previous question.
- no feedback
- It is difficult for the consumer to assess and compare products with different environmental labels. Harmonisation and standardisation of standards is necessary.
- In the future, type II labels (self-declarations) should be prohibited because they are confusing for the consumer and do not allow for cross-product comparison.
- Consumers are not clear about the meaning of the different labels that a product could have.
- B to B yes because they have professional buyers. Consumers: less relevant since it requires special knowledge.

Impact
- type II is usually something you are asked to do, but no commitment on it. so i don't see this as a change.
- Same comment as previous questions
- no feedback
- It is not very objective because it is autodeclarated..

- Investment in certification and label aquisition, training and awareness-rising
- depends on how compliance to this norm is enforced. technology is no barrier here but requires redesign?
- Customers can change companies polices.
- Consumers are used to value ecolabels if justified.
- As I said in the previous question, customers like to be informed about how the product they are buying meets the principles of environmental sustainability.
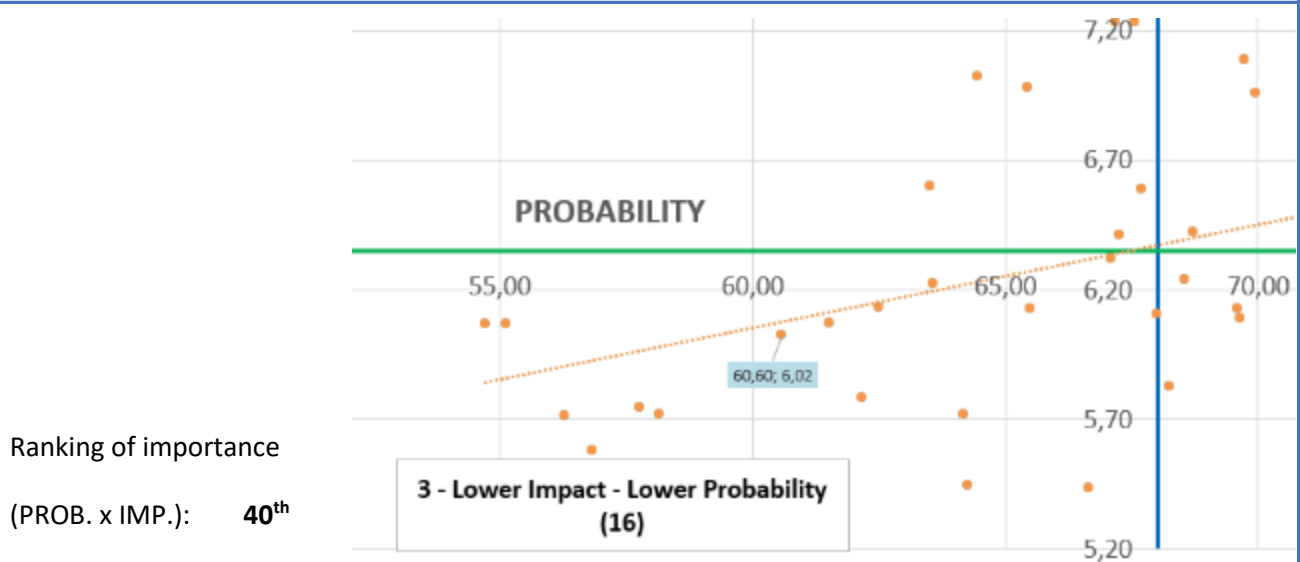
Forecasted Evolution:

VOLUNTARY INSTRUMENT

15.3 - Ecolabels (Type I, II, III)

Customers final customers (B2C) or intermediate customers (B2B), positively value that the furniture products have a Type III ecolabel (according to ISO 14025), which has become a competitive advantage.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **40**[th]

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
60,60	**21**	**6,02**	**2,02**	**364,95**

Survey respondents' comments:

Probability

- It is not making an strugle to put such a label. Sot there is not going to be a reluctance.
- type III ecolabels are too difficult to understend and too complicate to get to be useful
- to clarify: my answer is for the B2B.   Type III won't work B2C
- Self-certified ecolabels will not suppose a positively value by most of final or intermediate customers.
- Same as previous questions.
- no feedback
- It should be mandatory. Otherwise, manufacturers will see it as a cost (unless it becomes a marketing tool). As a costumer, this is not related to health (like it is on food) therefore it is difficult to see it as a motivation to purchase unless you are already committed with sustainability
- In the case of B2B consumers,and mainlin GPP, the use of a Type III ecolabel could be positively value, but not in the case of final costumers
- Especially in B2B purchases.
- B to B yes because they have professional buyers. Consumers: less relevant since it requires special knowledge.

Impact

- This type of label may be not so well known by majority of customers.
- will be more important for B2B than for B2C
- Type III Ecoabel will be increasingly important.

- To provide clear information obtained in a well done life cycle assessment will for sure distinguish a company form the others making her stand out
- The environmental data of a product could have a great impact on the buyer of the product. However, not all customers are cultivated enough to understand what these values mean. The information must be understandable for all types of people to increase the impact.
- Same comment that other two previous questions
- Regarding all the labels - customers have to know what those labels means. Labeling of product must be combine with the marketing actions and spreading the knowledge accordingly. It is related to all labels. I think that label II will have bigger impact due to recognition.
- no feedback
- Necessario un percorso per armonizzare e uniformare gli standard (es: regole di categoria per studi LCA/PEF/EPD)
- maybe B2C customer could ask for it. some GPP criteria could ask for it. not the private customer
- It is need and more with certifications as Leed, breeam which ask for this
- Investment in certification and label aquisition, training and awareness-rising
- If Type III ecolabels are positively value by customers/clients, it would have a significant impact on the sector, because from one side, manufacturers would have to work with Life Cycle Assessment, which requires a better knowledge of the environmental impact of their products, and on the other side, they will try to improve the environmental performance of their products to be more competitive against their competitors.
- depends on how compliance to this norm is enforced. technology is no barrier here but requires redesign?
- Customers can change companies polices.
- costumers need information regarding the environmental profile of the product they are purchasing, but i believe Type III are stronger for B2B comunication, since the final consumer still needs less information in order to "digest" it
- Both public and private customers are going to request more environmental information about the products, with the possibility of compare this type of information among the products at the same level. EPDs satisfy these two characteristics.
- B2B see this as a clear competitive advantag.
- at present a very limited number of furniture products has a type III ecolabel

Forecasted Evolution:

VOLUNTARY INSTRUMENT

15.4 - Ecolabels (Type I, II, III)

The different Type I ecolabels criteria that affect the furniture sector are unified, facilitating their understanding by customers (for example European label, Blue Angel, Nordic Swan, etc.).

Summary of statistics:
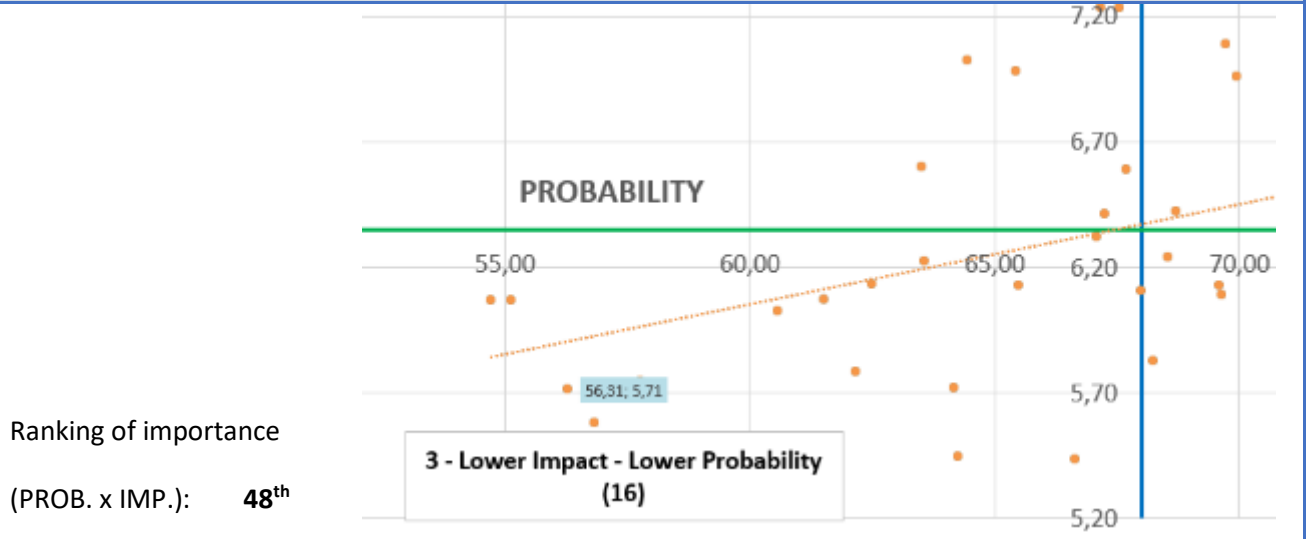
Ranking of importance

(PROB. x IMP.):   **48th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
56,31	**25**	**5,71**	**2,18**	**321,61**

Survey respondents' comments:

Probability

- Will be hard to get them under 1 umbrella as these labels are "commercial"instruments of the issueing companies / organisations
- very important but very difficult
- Unlikely given the complexity and timeframes and need for buy-in from diverse range of actors. Other circular, sustainable evolutions will be prioritised.   Beyond this timeframe a EU-wide label that would encompass everything could be a possibility.
- This would be helpful indeed, as too many systems have proliferated, which bring confusion to customers, who are not able to make an informed choice.
- THis is not going to happen because there are many economicalinterests
- This action has already been wanted and has not been successful because it confronts many different interests. I don't believe that criteria or labels will be unified.
- There are no incentives for the different systems to unify their labels. Their income would be reduced.
- The collaboration and merging of standards will be very challenging to manage and motivate existing labels to loose or give up their market share.   The most likely option is for the European label to encompass all the requirements of the other labels. However this will be difficult to implement and may result is a reduction in the number of products that can be certified.
- no signals for unification is in progress today
- It would be great!
- it won't happen. MS that have developed their own label won't give it up

- I hope so!!. Probally this unification of criteria can be given by having a smaller market this type of labeling.
- Even if this could be very interesting, I assume that particular interests of every organisation will almost certainly be an obstacle that could not be solved.

Impact

- Unifying criteria at EU level will make it easier for customers to understand and thereby increase the impact.   The unification of criteria should be mandatory at EU level. That will help us to advance..
- this would be a major step forwards towards a greener industry. . will be appreciated by all ens users. Compliance still is an issue as well as the reduction of fraud.. See the efforts in the textile industry.
- The unification of the different ecolabels for furniture products will definitely result in better understanding of the established criteria by the customers. However, in order to maximise this effect, a strong information campaign is required.
- That would ease a lot for customers
- that would be a useful trend (like the EU organic label), but I am not sure it is bound to happen.
- long way to safeguard the interests of the different actors
- It would have a strongly positive impact. There are too many type I ecolabels and they are not comparable.
- It would be a great tool to have a unified environmental labelling system for furniture, but not sure this will happen soon.
- It should be convenient to move from a voluntary system to a mandatory regulation through the use of a classification similar to energy using products or appliances (A to G)   Meanwhile it would be desirable to unify the present ecolabel system.
- Investment in certification and label aquisition, training and awareness-rising
- I don´t see a clear movement to unify ecolabels in 10 years, but in case it happens it will have a great impact (more than 8-9 points), as will be easier for marketing purposses and customers identification.
- Even though the unification is not easy considering the different national systems, facilitating their understanding by customers would great help customers to take more conscious decisions.
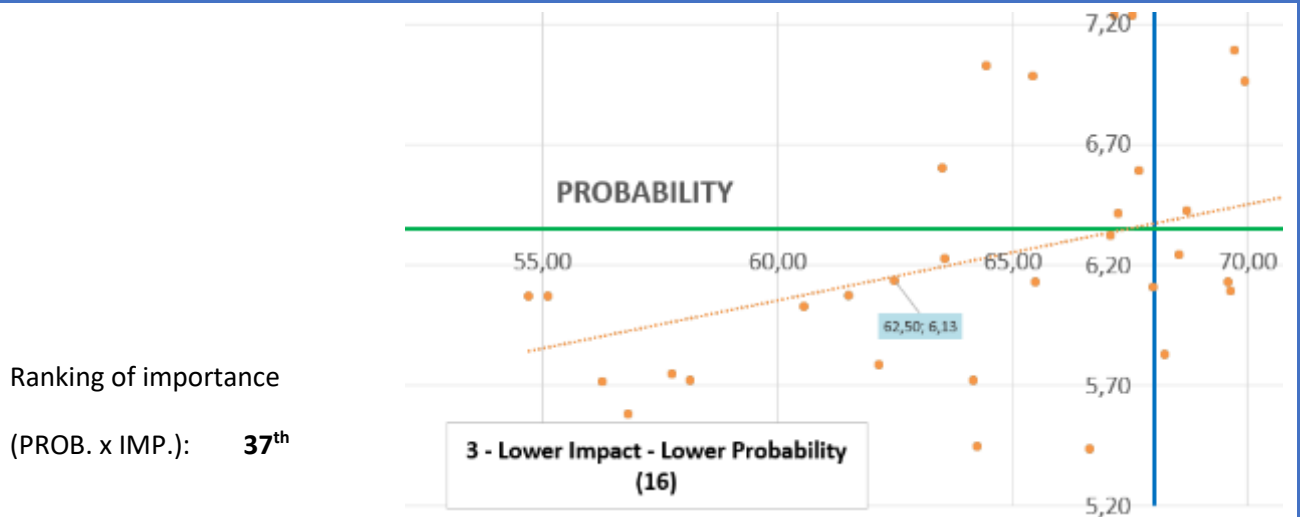
Forecasted Evolution:

VOLUNTARY INSTRUMENT

15.5 - Ecolabels (Type I, II, III)

50% of the furniture sector products have at least one type of environmental ecolabel, either type I, II or III.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **37th**

PROBABILITY (mean value)	PROBABILITY (Standard Deviation)	IMPACT (mean value)	IMPACT (Standard Deviation)	IMPORTANCE (PROB x IMP.)
62,50	**20**	**6,13**	**1,55**	**383,33**

Survey respondents' comments:

Probability

- We are realy far for this objetive. At this moment a big porcentage fo furniture companies does not even know what an ecolabel is.
- Truthful product information, based on officially recognized systems, will increasingly be an element to consider.
- There is no incentive due to not enough awareness from the general public on requirements and benefits. General public is under constant pressure after 2008 financial crisis and not easily willing to aquire additional concepts and labels in the absence of political will to set examples
- no feedback
- Getting labels is expensive, usually difficult for small business to invest in them.
- Ecolabels is a complex and expensive system for manufacturers and not very appreciated/understood by customers.
- ambitious but possible

Impact

- Yes, i think it is going to happen
- The furniture products have been identified as a priority product category for the circular economy and the adoption of ecolabels will enhance this transition, mainly by setting effective criteria regarding circular design of furniture, material substitution, increased recycling and/or increased reuse, use of hazardous substances, etc.
- The evolution will not be as fast as it would be necessary, especially in small factories. However, the trend in obtaining some type of eco-label is increasing, so the impact is very positive.
- no feedback

- It could be efficient of the client is able to discriminate products. If 50% for example for the ecolabeln this doesn't help the consumer to choose within the labelled products
- If the ecolabel systems are broadly accepted and implemented, it would have a significant impact in the sector because it would boost the companies to improve the environmental profile of their products and better inform consumers about the environmental characteristics of their products for a better decision. The risk in this case is to avoid "green washing practices", which requires an adequate market surveillance.
- if a supplier of producer can comply: a huge business benefit. creates a level playing foiled for suppliers. Will affect the whole of the supply chain.
- Environmental recognition systems for furniture products will grow due to market demands.
- Companies in the furniture sector will have to incorporate the capabilities to integrate the development of this type of certification.
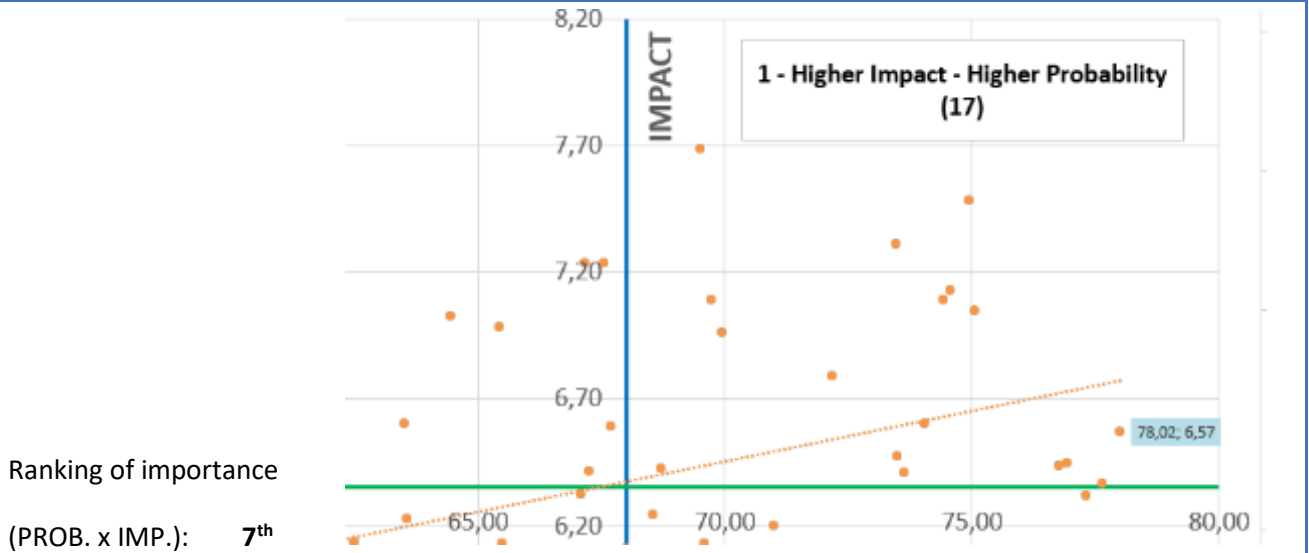
Forecasted Evolution:

VOLUNTARY INSTRUMENT

16.1 - Chain of Custody FSC/PEFC

Customers, final customers (B2C) or intermediate customers (B2B), positively value that the furniture product has a chain of custody certification, according to existing schemes (FSC, PEFC, etc.), which have become a competitive advantage.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **7th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
78,02	**16**	**6,57**	**1,96**	**512,46**

Survey respondents' comments:

Probability
- Chain of custody certification has become something like "must do" in the recent years. Despite many ot producers doubt in it it is a ticket to the markets.
- I think this is already the case.

Impact
- With a view to a greater contrast of the illegal timber trade indicated by the European Union as one of the primary objectives of its forest policy program and of the request for a greater quantity of material deriving from renewable sources, particularly within tenders Public procurement, FSC and PEFC certifications can be a useful element for companies to demonstrate their aptitude for sustainable forest management
- To implement chain of custody certifications will be highly extended and require by customers. All companies will need to adapt to this new certification.
- this already happens. companies have to organize to be able to obtain COC certification. not a big deal, non a major change. new iso 38200 on COC could also help, for companies that already have a quality or environmental MS
- The chain of custody certification has a strong impact on the sustainability of the sector. Traceability is essential when we apply the life cycle of a product.

- since the chain of custody has one unique logo, although the costumer don't know all the requiremets that the product comply, at least is a good instrument to raise the awareness, and helps them to choose better furniture.
- NOw it is very important. THere are certifications which require it.
- It is already happening, but for sure it will go much further in the next few years.
- It all depends on whether or not the companies will centralize these schemes, group themselves in strategic alliences, or team up with different sectors with a similar target audience.
- is already going on
- Inreased incentive to use only certified wood and accordingly increased production, training and marketing costs
- if a supplier of producer can comply: a huge business benefit. creates a level playing foiled for suppliers. Will affect the whole of the supply chain.
- Getting to 100% certified wood is not easy but achievable. If IKEA manages to get there, everyone else in the industry could do it.
- Customers can change companies polices.
- Custody certification, according to existing schemes (FSC, PEFC, etc.) is relevant specially for wood.
- As mentioned before, wood products should be trackable from its origin
- A increasing number of brands and products are certified FSC or PEFC, so it will become the standard very soon.
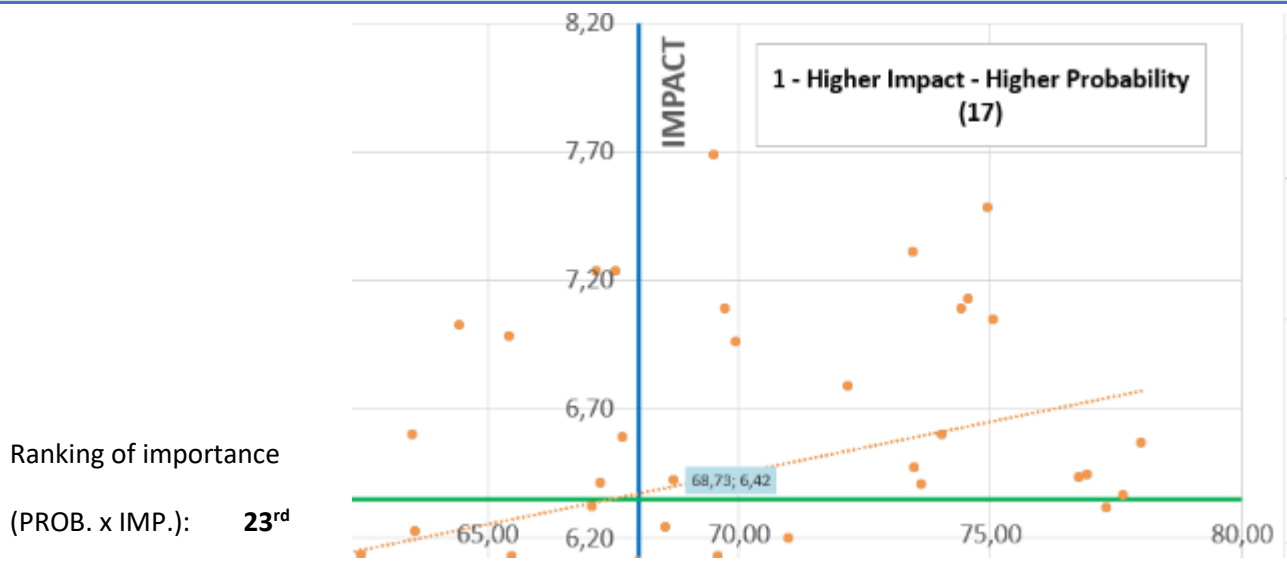
Forecasted Evolution:

VOLUNTARY INSTRUMENT
16.2 - Chain of Custody FSC/PEFC 70% of the furniture sector products have at least one type of Chain of Custody certification - CoC, whether FSC, PEFC or similar.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **23ʳᵈ**

1 - Higher Impact - Higher Probability (17)

68,73; 6,42

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
68,73	**18**	**6,42**	**1,77**	**441,39**

Survey respondents' comments:

Probability

- can we afford not to?
- 70% is too high, but it will increase for sure.

Impact

- Yes, it is very important
- With a view to a greater contrast of the illegal timber trade indicated by the European Union as one of the primary objectives of its forest policy program and of the request for a greater quantity of material deriving from renewable sources, particularly within tenders Public procurement, FSC and PEFC certifications can be a useful element for companies to demonstrate their aptitude for sustainable forest management in contrast to the illegal timber trade
- will be an important marketing issue. can be used in the competitive struggle. requires strong communication with the end users and convincing that it really means something. so:enforcement and regular check on compliance required.
- This will promote and guarantee the sustainability of forestry sector
- The Chain of Custody certification is very important because illegal logging will reduce .
- no feedback
- It would for sure assure that wood is coming mostly from sustainable sources, so it will be an important change.
- it will become more and more important also for export

- Inreased incentive to use only certified wood and accordingly increased production, training and marketing costs
- If the chain of custody schemes are broadly accepted and implemented, it would have a significant impact in the sector because it would require the implementation of a strict control of the origin and delivery of the wood used as raw material. This would force the better management of forests, which will reduce the environmental impact of wood as raw material.
- Great impact of this impact in the industry in different scales: big companies, but also SMEs will implement this certifications.
- Furniture manufacturers should be able to guarantee the origin of wood raw materials. The importance of sustainably sourced wood among furniture customers has been significantly increased. The adoption of CoC certification schemes (FSC and PEFC being the more popular ones) is a guarantee for compliance with the circular economy requirements.
- A increasing number of brands and products are certified FSC or PEFC, so it will become the standard very soon.

Forecasted Evolution:

VOLUNTARY INSTRUMENT

16.3 - Chain of Custody FSC/PEFC

Customers, final customers (B2C) or intermediate customers (B2B), positively value that the furniture product uses wood from forests with certified management according to systems such as FSC, PEFC, or others equivalent, which have become a competitive advantage.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **10ᵗʰ**
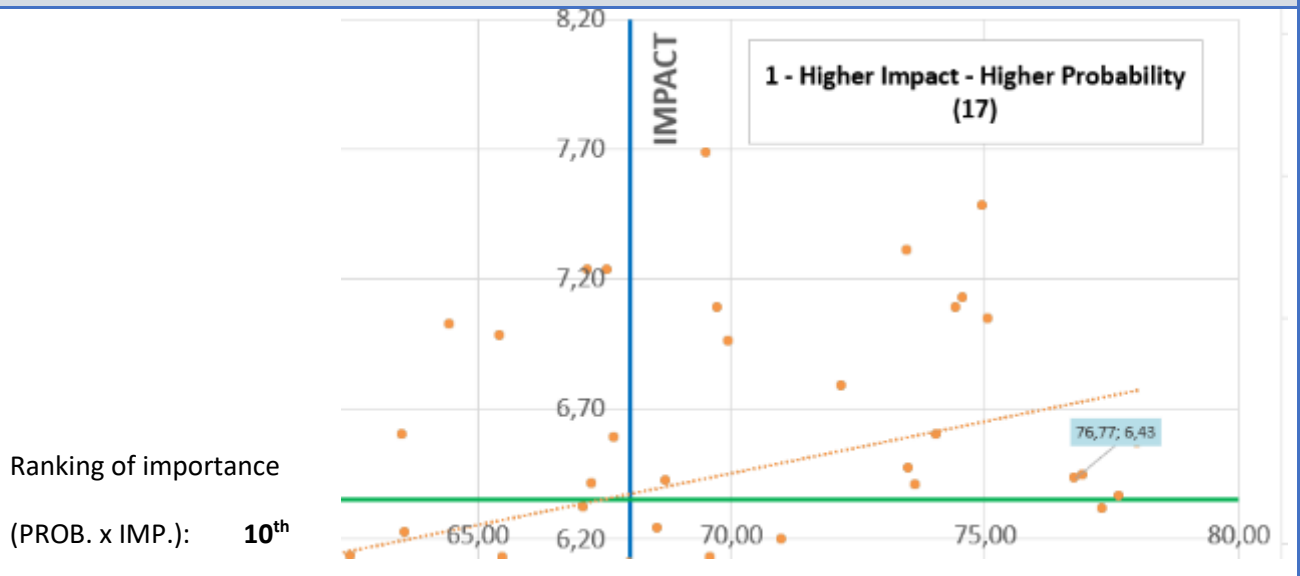
PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
77,67	16	**6,36**	1,95	**494,24**

Survey respondents' comments:

Probability

- Most companies in the sector use some kind of sustainability certification of the supply chain, mainly due to requirements in green purchasing criteria.
- Depend on state of forests in Europe in relation with climate change...
- can we afford not to do this?

Impact

- The impact can be strongly financial due to higher timber prices. The impact will reduce after 2030 if more than 95% of used timber come from certified sources.
- will be an important marketing issue. can be used in the competitive struggle. requires strong communication with the end users and convincing that it really means something. so:enforcement and regular check on compliance required.no compliance will be unacceptable form a societal point of view. non compliants will be named and shamed.
- This will be the previous step to ban the wood products without certification
- This is one of the main criteria consumers of B2B companies make their buying decisions.
- these tools will become a competitive tool for companies
- The importance of sustainably sources wood raw materials, covered by chain of custody certificates issued by an independent third party certification scheme, is an important stage of adopting the circular economy principles.

- The FSC and PEFC certifications will become necessary elements for companies to increase their competitiveness in the market: in this way in fact the companies in the sector will have the opportunity to demonstrate to their final customers the respect for the timber trade, the sustainable management of forest heritage and the use of renewable raw materials, all central elements of forest policies and the circular economy package of the European Union, as well as being useful elements for participation in public tenders
- The Chain of Custody certification is very important because illegal logging will reduce .
- Many products will have this certification, so it won't be a competitive advantage to have it, but a big competitive disadvantage to not to.
- it's similar to the previous one. if you have COC is because wood comes from...
- Inreased incentive to use only certified wood and accordingly increased production, training and marketing costs
- I agree this is a competitive advantage.
- Having furniture that has a certified management of the forests from which the wood has been obtained has a great impact, since it helps identify the product's production chain. The protection of natural resources is very important for the sustainability of the planet and customers are aware of this.
- Customers ask for this but with the same price
- Companies will need to implement these certifications, as are one of the best known by consumers and implementation of new regulations.
- Companies could have also a competitive advantage by declaring the total environmental footprint of their products that will then consider also the transportation impact of wood coming from outside Europe for example.
- A increasing number of brands and products are certified FSC or PEFC, so it will become the standard very soon.
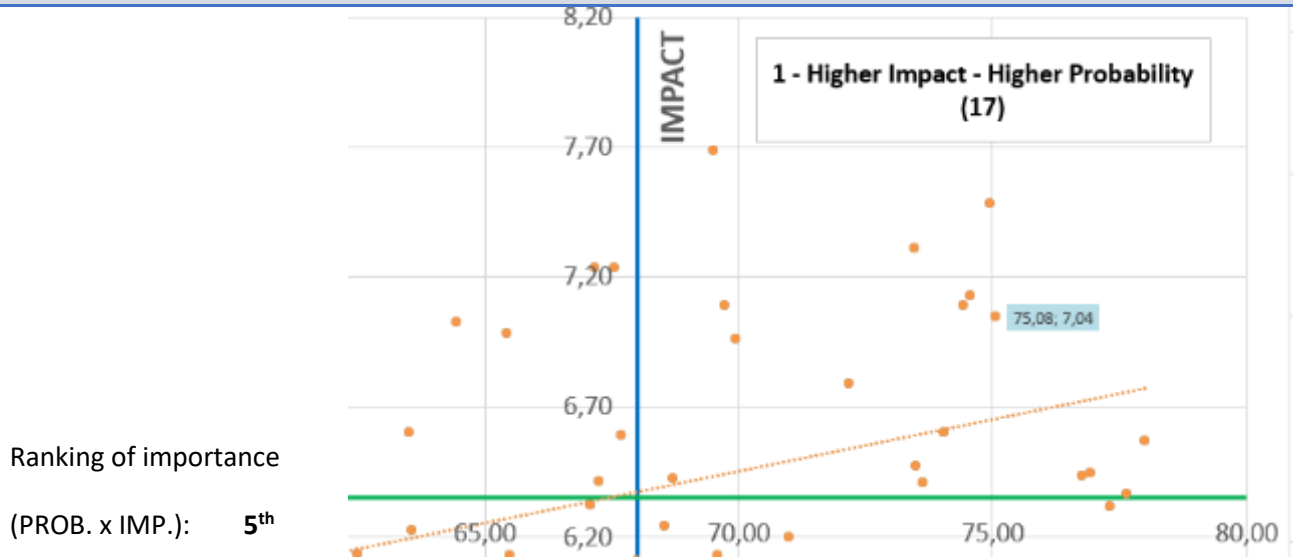
Forecasted Evolution:

VOLUNTARY INSTRUMENT

16.4 - Chain of Custody FSC/PEFC

New technologies (e.g. Internet of Things - IoT, blockchain, etc.) are used to improve the traceability of wood products and ensure the chain of custody along the whole value chain.

Summary of statistics:

1 - Higher Impact - Higher Probability (17)

75,08; 7,04

Ranking of importance

(PROB. x IMP.):   **5th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
75,08	**14**	**7,04**	**1,54**	**528,84**

Survey respondents' comments:

Probability
- perhaps, but I have my doubts that the value of furniture worths the investment on traceability technolgy
- My answer isn't lower than 40 but I'd still like to add that this evolution would also be an added value for the second-hand market (being able to sell at higher rates due to good storytelling and processing at end-of-life (often, the problem is that you don't really know what you're processing.) Also, it seems a lot easier to apply for subsidies if the change in your company is linked to an emerging technology, as governments are keen to invest in these.
- i think it is probable that this evolution will happen further thatn 2030

Impact
- these technologies are prerequisites for successful implementation of supply chain changes and control of material flows. Already possible from a technology point of view. The textile sector is already experimenting with this.
- The use of IT systems will increase in the coming years and will help improve the traceability of wood products and ensure the chain of custody throughout the entire value chain. Impact will increase
- The successful digital transformation is vital for survival
- Technology investments needed as well as additional training and re-skilling of staff. Increased competitivness of the company using these technologies and improved image toward the general public and potential workforce. Better contact with IT sector is also very likely to produce

modification of business models in the furniture industry (more agility and better project management due to synergy effects).

- See projects Singularoty University or Canadian Forestry 4.0
- Production costs
- New technologies such as IoT or Blockchain are already enabling a more connected and transparent supply chain, and it is just the beginning. From the business perspective, these technologies are interesting for investors, so they will be finding funds easily in the coming years, spreading the adoption to the whole sector.
- New data streams will help build more resilient value chains.
- Material passports enabled by Internet of Things - IoT, blockchain, BIM, RFID sensors will be the key to preserve the material value in the future. In this way, waste will be reduced and materials will be reused or recycled.
- it would have a positive effect
- It will simplify procedures and lower costs. At the same time, it will make for customers to have reliable information almost on time.
- it could happen but it won't change a thing, maybe making traceability easier?
- Industry4.0 technologies will be a great revolution for the industry, specially for a traditional industry as the furniture sector. Companies will need to adapt processes and workers skills to implement them and ensure the chain of custody along the whole value chain.
- If new technologies are used for wood traceability, the required efforts to guarantee the chain of custody would be reduced and better information will arrive to manufacturers and final users. This would reduce management costs and better guarantee the real origin of the wood.
- A barcode read on the mobile phone will display the entire supply chain of the final product.

Forecasted Evolution:

VOLUNTARY INSTRUMENT

17.1 - Green building certification BREEAM/LEED

The criteria associated with the use of furniture that uses sustainable materials acquires greater relevance in the systems of Green building certification (e.g. LEED or BREEAM), encouraging their use in those buildings that aim to obtain this type of certification.

Summary of statistics:
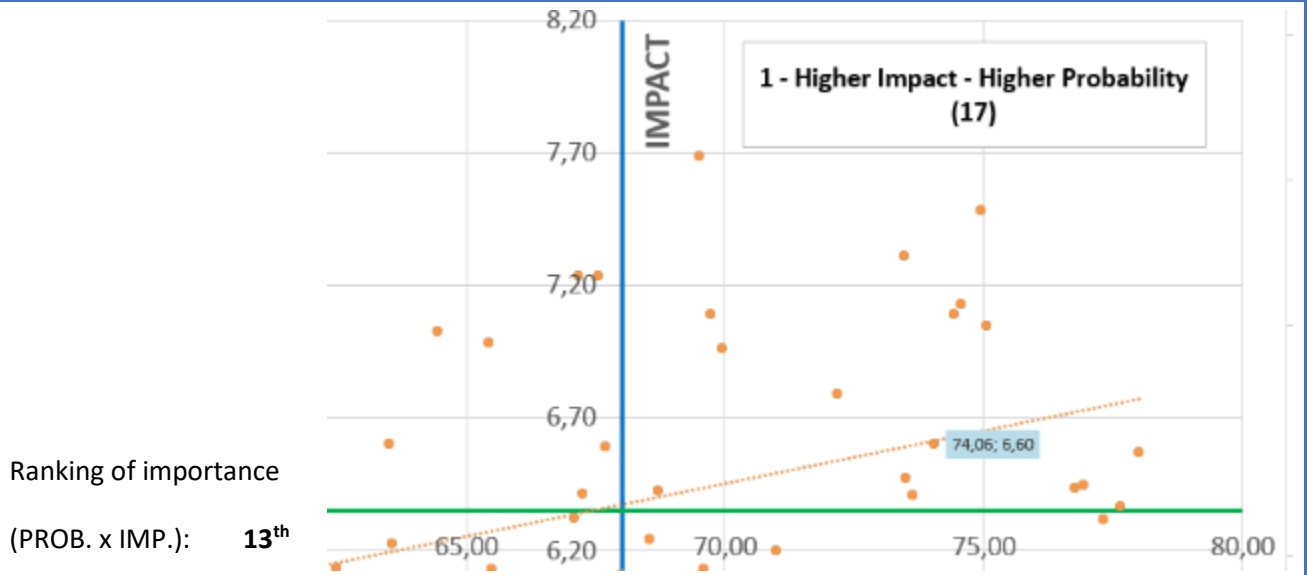
Ranking of importance

(PROB. x IMP.): **13th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
74,06	17	6,60	1,77	488,81

Survey respondents' comments:

Probability
- will meet strong opposition from the powerful building an construction sector. some countries may be leading but the majority will lag behind. requires strict legislation and prosecution.
- I believe that in the near future (2030) the number of buildings wishing to obtain the certification of green buildings will increase, but this increase will not be as high as it would be desirable.

Impact
- Sustainability certificates in buildings will be a tractor element of ecodesigned products.
- Possibility for better positioning in the market
- Not sure about the percentage of new buildings that will have these certifications (for sure bigger, but maybe still smaller than the ones that don't have them) but for sure they will be furnished with products coherent with their design criteria.
- no feedback
- more important for "real" building products than for furniture
- Many companies are already working to meet the sustainability requirements of this type of certification.
- LEED or BREEAM are very diffuse in Italy and Spain and this will be a trend in the future.
- It would help.
- it would have strong positive effect, especially when the criteria for furniture are designed to be compatible with the most important building rating schemes

- It will all depend on whether or not the company knows how to look beyond their product and bring something new to the building (eg. BAMP - Building as Material Pasports models will value the systemic approach more than a purely material innovation focus).
- It could be an opportunity for furniture suppliers to change its procedures in order to achieve a competitive advantage.
- Investment needs in material research and product design, potential alliances with real estate developers and specialization on this market segment (new and more specialized businesses)
- important role for architects, project developers and designers. will have major impact since it will change procurement and access to delivering to major projects. So a producer cannot afford not to comply.
- Furniture need to fulfil or help to fulfill these standards.
- environmental protocols for buildings or for the well being would become more and more important.
- As happen in the GPP, the BREAM and LEED standards might be able to encourage the adoption of sustainable products and supply chains, by pulling the market demand for this type of models (upstream) in connection with customers awareness (downstream),
- As buildings have significant direct and indirect impact on the environment during all stages of their life cycle, the Green building certification schemes are important steps towards mitigating the environmental impact of buildings. However, the number of BREEAM and LEED certifications in the EU countries is still rather low.
- Although the green building certificates are voluntary, they push furniture manufacturers to comply the requirements.

Forecasted Evolution:

OTHER POLICIES AND STRATEGIES

18.1 - Cascading use of wood

The European Commission reinforces its circular economy strategy by regulating the strategy of cascading use in the furniture sector, promoting the recovery of wood in the different stages of the product, recycling or reusing it repetitively before moving it to the next stage.

Summary of statistics:
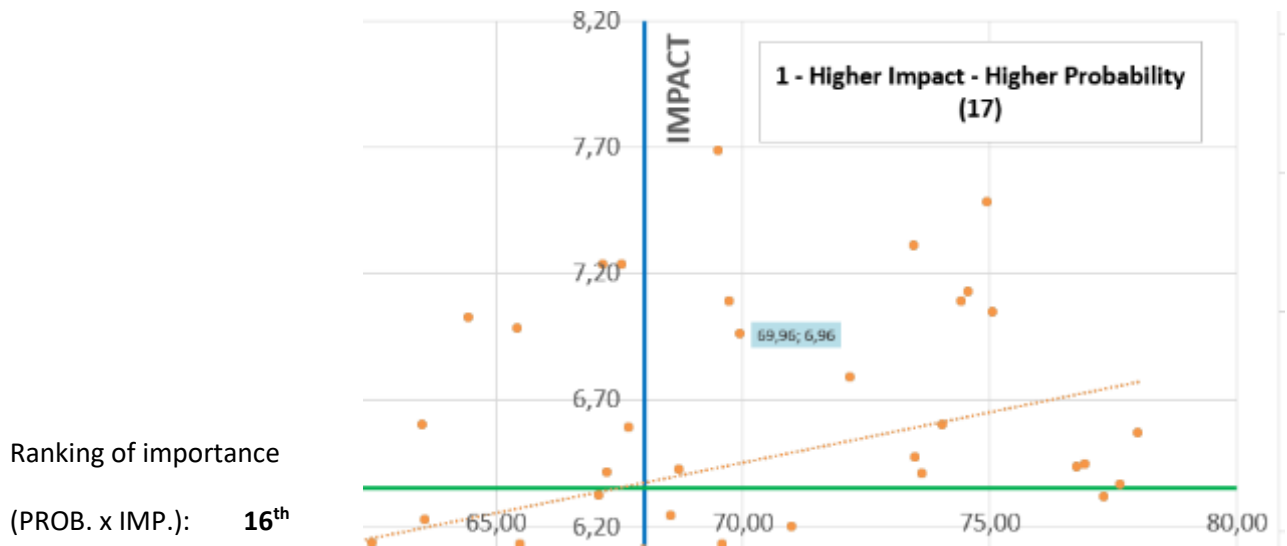
Ranking of importance

(PROB. x IMP.):   **16th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
69,96	19	**6,96**	1,71	**486,67**

Survey respondents' comments:

Probability

- Like I mantionet in the beginning of the questionarry, joint implementation of all the critheria/instruments together will cause lack of consensus. The planning period of 10 years is too short of such significant changes.
- too complex on EU scale. total chain is global oriented so not very feasible
- no feedback (likley unprobable?)
- It will happen at the long term, but as many furniture products are used for a long time, 2030 might be te early for the implemenation of such a system
- in some situations it's already so
- forest sector does not want regulation over the destination of their produtcs. so i don't see it happen

Impact

- Thi instrument will change the way of producing and consuming furnitures.
- To lose as less value as possible for materials, components, products, etc is one of the main principles of the circular economy, so if cascading is applied properly will for sure provoke structural changes in the wood sector. it's something strategical that should be regulated.
- The reinforcement of the circular economy stratey affecting the furniture sector will start as results of different pilot cases, that will have an impact in some steps of the chain value as the recovery of used/waste furniture.

- The furniture sector is not prepared at this moment to deal with this issues
- The cascading use of wood appears to be and will continue to be more and more, the basis of how the sector of the wood-furniture supply chain will be able to understand the opportunities deriving from the circular economy: the continuous reuse of the material, in addition to prolonging the use of the material itself, it allows to reduce the extraction load of the raw material and the creation of new professional realities as well as stimulate the concept of proximity of use of the raw material.
- no feedback
- Increases in costs related to technology, storage facilities and associated logistics, product design, staff training and new business models research. Good practice examples will be highly valuated and followed within production specificity limits.
- Important if recycling of wood products (chips included) is comprised in the concept of cascading
- if this happens the impact would be high and positive for the environment.requires rethinking of business models and the implementation of rigid IT based control systems.Also: opportunity for new businesses in used materials.
- If the cascading use of wood is regulated by legislation, it would have a significant impact on the sector because will require a better exploitation of the wood resources in their life cycle, from forests, to manufacture to end-of-life. This will imply a change in the sector and the need to deploy the needed infrastructures to supply services that nowadays are not put in place (e.g. recycling/recovery facilities, etc.).
- If it succeeds, it will significantly change the way of production.
- if enforces would be beneficial. but it won't be :-/
- hopefully they are smart enough
- Even before recycling, the regulation has to think about remanufacturing and refurbishing. The companies need to think about it since the design of the products.
- Cascading use wood is a leading principle of the circular economy and resource efficiency. In this respect further efforts and legislative measures are needed in order to maximise its effect and overcome the existing technical, market and other barriers. Strong efforts are needed to address the existing imbalance between material and energy uses of industrial wood residues.
- By reporting on CE companies will have more opportunity to find an opportunity to gain competitive advantage.
- -business models change throughout all supply chain -change the exploitation of the forest heritage at local and global level
- As soon as a regulation forces reuse before recycling and final disposal, there will be circular iniciatives in the sector
- All the prodcutive process will have to be redefined to meet this procedures. It is not a regular practice. Once again, the reasons are economical rather than environmental.

Forecasted Evolution:

OTHER POLICIES AND STRATEGIES

19.1 - EU industry policy for Forestry

The EU industry policy for Forestry (COM (2013) 659 final), extends beyond forests, also covering aspects of its value chain, such as how forest resources are used to produce products or services.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **36th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
63,57	**21**	**6,22**	**1,48**	**395,56**

Survey respondents' comments:

Probability
- This is just an EU policy for forestry. It is only a philosophy. Only the existence of regulations, requires compliance.
- I would be very suprised that a forestry policy extended its vision to the life cycle of wooden products
- I can not imagine that this will be the case in 2030
- as before: too complex to manage. Too many global partners and companies all over the world involved.

Impact
- If the supply chain is involved this changes everything. All the consequent flows will e affected, also labour force, machinery etc.
- The situation of forests in Europe is a very important problem, and although unfortunately it is not of main interest for the industry, the European commission will focus efforts at the legislative level.
- The role of forests and their sustainable management are at the heart of the EU Forestry Strategy as a key element in contrasting and mitigating climate change: a key role of forest heritage is also contained in the European Bioeconomy Strategy, in which we recommend the cascading use of wood raw material and its key role as a material for future use as an alternative to current materials of fossil origin.
- Its impact will be bigger in the wood industry, as first stage of the furniture industry. It will suppose to implement LCA and strategies of forest management.

- Important to assure the sustainability of the whole supply chain
- impact would be high since it involved rules for local and regional forest management. How will regional or m=national groups respond? I expect heavy opposition.
- hopefully they are smart enough
- Better marketing opportunities for furniture manufacturers, better transparency and visibility of the sector and consequently better image towards the general public due to value-added products manufacturing. Increased costs to ensure transparency of production and business processes as well as certifications. Increased opportunities for CSR actions and increased opportunities of high-quality supply with wooden raw materials.
- availability and prices of "local" wood vs imported wood???

Forecasted Evolution:

OTHER POLICIES AND STRATEGIES

19.2 - EU industry policy for Forestry

The activities of greenhouse gas emissions compensation generate a reactivation of forest resources, making necessary their better management that allows greater traceability and monitoring.

Summary of statistics:
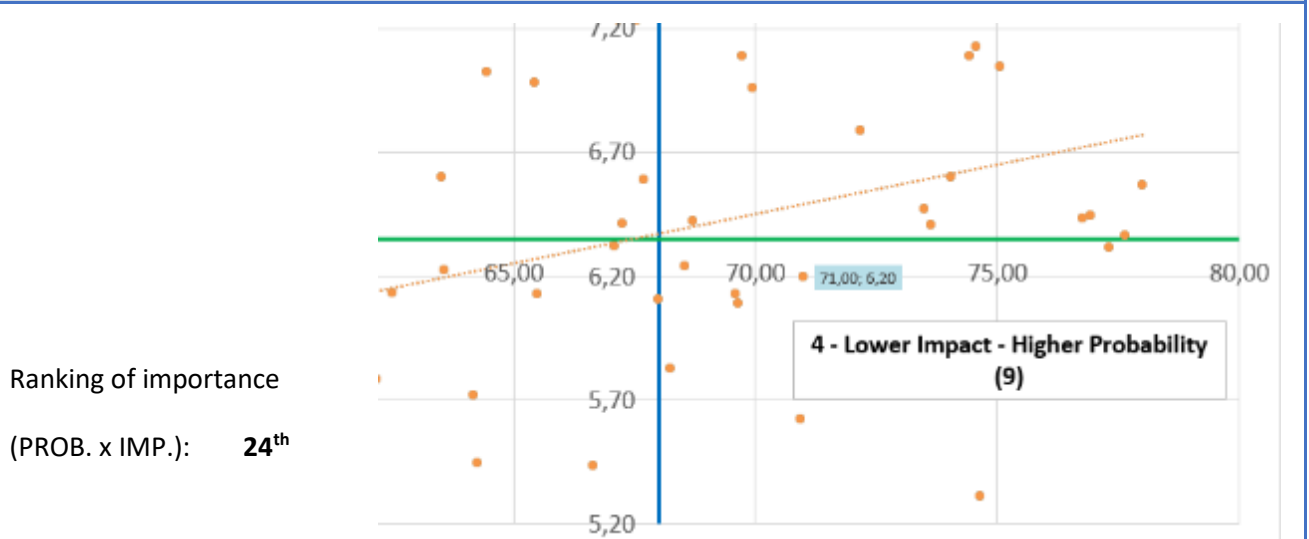
Ranking of importance

(PROB. x IMP.):   **24**th

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
71,00	18	6,20	2,05	439,89

Survey respondents' comments:

Probability

- most wood comes from plantations and waste, not forests
- I don't think these elements are so relevant in 2030.

Impact

- This will create opportunity! For collaborations with local suppliers and CO2 compensation companies.
- This is happening especially in Scandinavia (Finland included).
- this is already happening on national level.However: the choices made made are prone to all kinds of local and regional action group opposition. It will not directly influence the furniture industry, but on the longer term, depending on cost aspects and the opportunity for marketing this will have supply chain impact.It will also influence the choice of which materials are being used.
- The traceability, monitoring and sustainable management of forest resources are one of the key components of industrial processes for production of environmentally friendly furniture products. It is also important to determine and assess the carbon footprint of furniture products and their components.
- The activities of greenhouse gas emissions compensation will be very important impact at global level. This kind of actions are necessary for the sustainability of the planet. Small actions have great impact.
- not enough interaction with building sector.. but a good opportunity to change landscape of furniture sector
- no feedback

- It is crucial to generalize the current market for carbon bonuses or similar instruments
- hopefully they are smart enough
- Emission offsetting must be recognised in the LCA/PEF methodologies.   Today it is only partially recognised.
- Co2 compensation is a trend that is already here (and that will grow even more in the next few years), so the increasing number of forests (also provoked by the smaller number of crops in many countries) will make necessary a good management.
- CO2 capturing is key to achieving climate change objectives, so, forestry sustainable management is one of the most interesting strategies to apply and connect with the furniture value proposition. Choosing sustainably sourced wood is not only safer and healthier for the customers but also is helping to capture CO2, the challenge is to maintain wood pure (avoiding additives etc) and create a transparent and trustful narrative around it.
- Better access to higher quality wooden raw materials, which are also better managed. Investment in certifications, awareness-raising or marketing, technology and staff training needed, which will result in higher costs inthese areas. A larger playing field for innovation and pioneers. If correctly managed at EU level, it could be a potential competitive advantage towards imports
- A great potential can be unlocked thinking about forest resources. Taking into account climate models for the next 20 years, indigenous knowledge, market circumstances and much more will be possible to manage forests better.   Technology will be key: deep learning computers maybe finally make it possible to look for network effects in landscape and forests.   Next to it, forest well managed will become valuable if we start to pay companies for biodiversity, water storage and carbon storage.

Forecasted Evolution:

OTHER POLICIES AND STRATEGIES

20.1 - Forest Based Industries Blueprint

A strategic vision and its needed actions are set to secure the competitiveness of the furniture sector in 2050. Sector companies establish concrete and binding commitments, based on the update version of the study carried out in 2013 (SWD(2013) 343 final).

Summary of statistics:
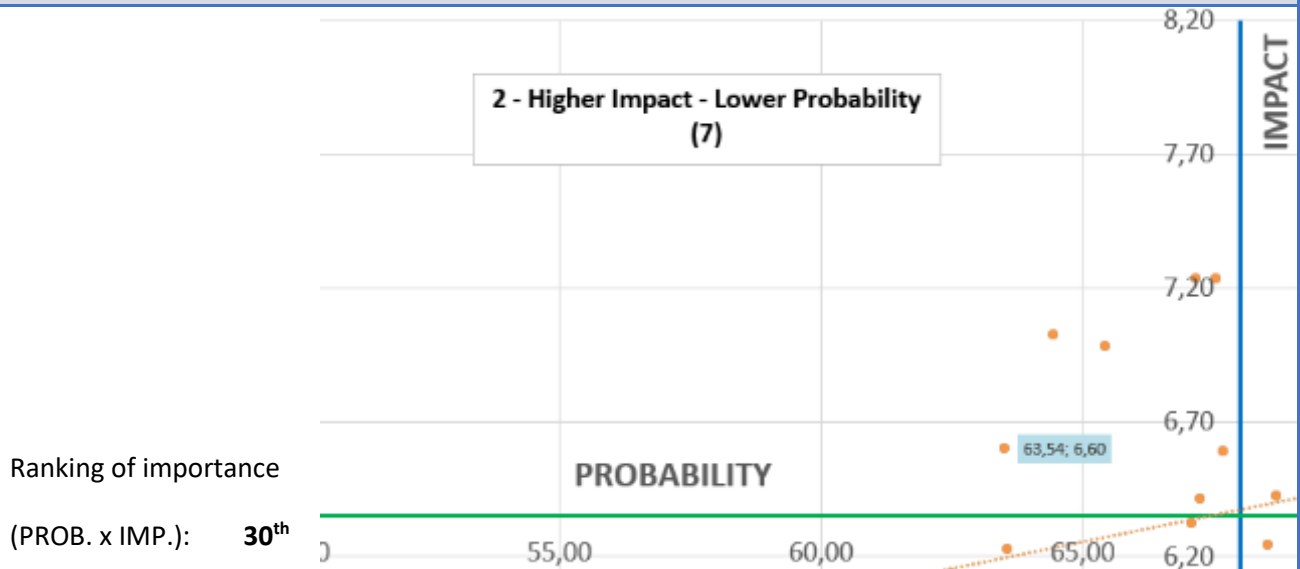
2 - Higher Impact - Lower Probability (7)

Ranking of importance

(PROB. x IMP.):   **30th**

PROBABILITY (mean value)	**PROBABILITY (Standard Devation)**	**IMPACT (mean value)**	**IMPACT (Standard Devation)**	**IMPORTANCE (PROB x IMP.)**
63,54	**18**	**6,60**	**1,40**	**419,38**

Survey respondents' comments:

Probability

- Sectorial agreements don't use to have *concrete and binding* commitments.
- only if forced by a law
- no feedback
- difficult to involve e.g. Eastern EU countries since they basically oppose EU guidance. the companies all over EU have widely different views to the world around them. Multinational furniture companies will shift their harvesting elsewhere. See e.g. how the textile industry has reacted to rules and agreements. These are still not really working.

Impact

- This would for sure set a strong base for the future of the sector.
- This long-term vision changes the game going from quick-reactive thinking to strategic investment and collaboration.
- The impact of this topic depends on the concrete actions to be implemented and the level of compromise to implement them by the sector. If the actions are adequately defined and the compromise of the different actors is strong, it would have a significant impact in the sector.
- Still Eastern European companies are lagging behind.
- Resource and energy efficiency are one of the main challenges the EU furniture companies had to address in order to remain competitive on the global market. Further development of the cascade

principle should allow the EU furniture manufacturers to use the limited wood supplies more efficiently in the face of growing demands of the circular economy.

- no feedback
- New commitmets will suppose new targets on the way that the industry is already following-up. SMEs will have to do a bigger effort.
- Increased competitiveness of the industry on the global market towards protectionist intrenational markets, but also potentially higher costs for actual implementation of committments (technology-, research-, staff training-, design- and innovation-, and certification-related)
- In long term, things will have to change. It is imperative to build a strategy from the companies, otherwise they will no more be   feasible.
- If this would happen it would be very positive.but still the industry acts in a global force field. What would be the roil of Chinese or African and South American based companies be? they don't really care.
- I have limited knowledge of the 2013 study. But the contents seem to me very ambitious.
- Furniture sector will create strategies as recycling wood and using new raw material other than wood . Adaptation is necessary.
- As far as some binding commitments exists, this will change the manufacturing and design processes ant could have a great impact in furniture business
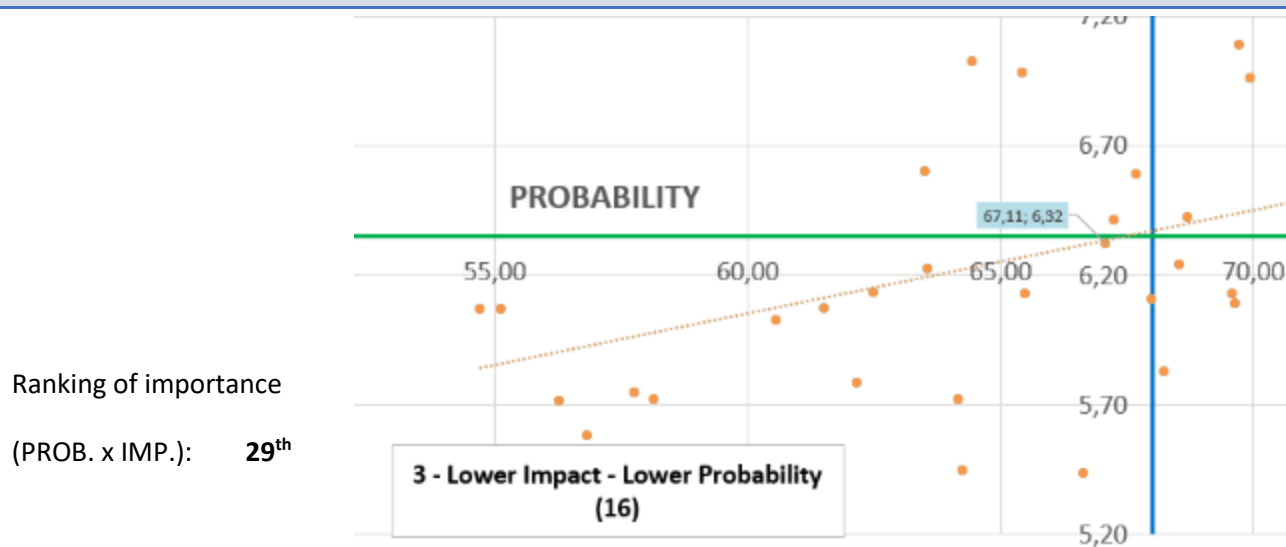
Forecasted Evolution:

OTHER POLICIES AND STRATEGIES

21.1 - Bioeconomy

The European Bioeconomy strategy identifies the furniture sector as a relevant sector to achieve its objective, setting concrete actions that bind sector companies.

Summary of statistics:

Ranking of importance

(PROB. x IMP.):   **29th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
67,11	**15**	**6,32**	**1,63**	**423,99**

Survey respondents' comments:

Probability

- this depends largely on the tools and means developed to implement and enforce the rules. Local/national companies will adhere. the major multinational companies will simple evade the measures.
- no feedback
- I don't see Bioeconomy sector as a big player with capabilities to become structural in european economy and force agreements.
- don't see it as a likely outcome

Impact

- This could impact supply chain, production, design and business model.
- There's a big opportunity on the development of new technolgies based on bioeconomy. But we should be carefull with bio-based products, that can be the solution for some cases, but for other may not. So it is important to calculate the environmental profile of each product depending upon the specific case.
- The replacement of non-sustainable raw materials, used in the production of furniture, with eco-friendly bio-based materials is one of the main steps to enhance the transition to a stronger, circular and low-carbon economy.
- The central role that the European Bioeconomy Strategy poses in relation to the role of forests and their sustainable management as a pillar in the fight against climate change, gives companies in the wood-furniture supply chain a great opportunity to be at the forefront of this path ,

- demonstrating how the supply chain and the sector are directing their way of doing business towards a culture devoted to sustainability.
- The bio-economy will take on a vital role in the circular economy the moment it is approached from a bio-manufacturing and bio-design pov instead of a materials-alternative in a business-as-usual model.   If that shift is made, the impact in regard to regenerative design, sustainability etc is very hard to already pin down, but will quite probably be huge.
- The bioeconomy can be a source of many jobs in the near future, so a clear expansion is expected in the coming years.
- no feedback
- Local/national companies will adhere. The major multinational companies will simple evade the measures.
- If European Commission considers the furniture sector as a key sector to comply with its bioeconomy strategy, it would have a significant impact in the sector, because it would be needed to define synergies with other sectors that use bio-materials, redefining the relationships between them. The key point to assess the level of impact is how these synergies are implemented and the real implication of the different sectors.
- Furniture as sector based on wood will be a good example in the Bioeconomy Strategy and action plan.
- Bioeconomy is being re-valued nowadays as the "green (color)" cycle of the Circular Economy, the biosphere.   For this reason, promoting a biobased economy is key to decarbonise industry.
- Binding concrete actions result in increased costs, often with a significant administrative burden increase. Stronger efforts for innovation of products and especially of business models needed, as well as for training of personnel in bioeconomy-related matters.
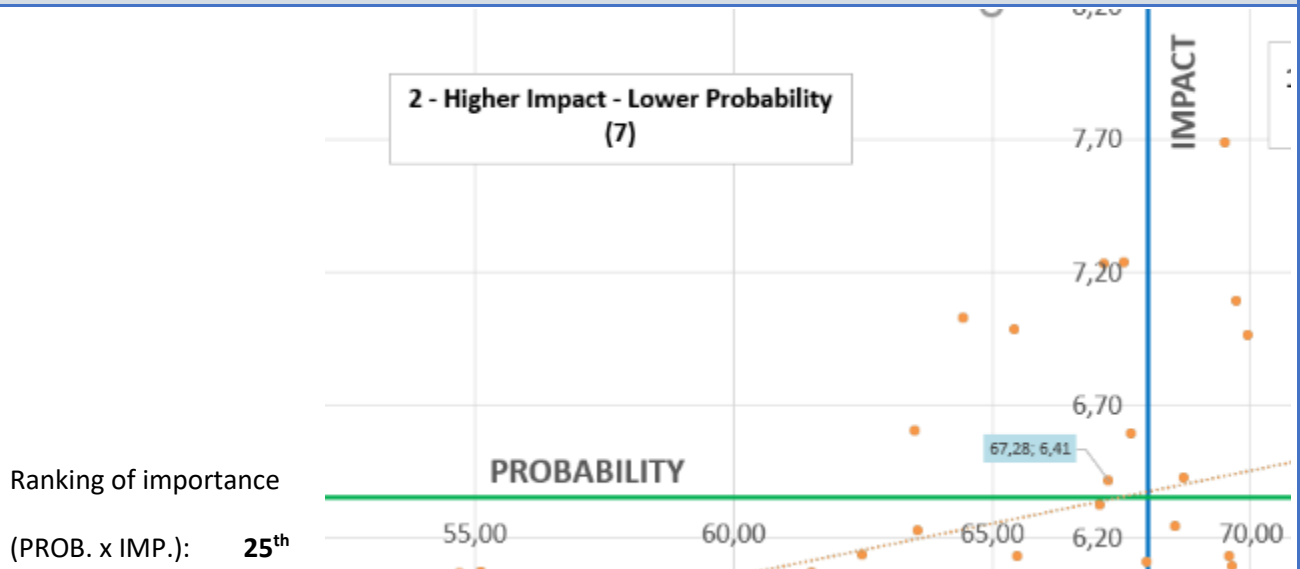
Forecasted Evolution:

OTHER POLICIES AND STRATEGIES

21.2 - Bioeconomy

Based on the European Bioeconomy strategy, significant synergies with other sectors of primary production that use and produce biological resources arise, optimizing raw materials consumption and minimizing generation of waste.

Summary of statistics:

Ranking of importance

(PROB. x IMP.): **25th**

PROBABILITY (mean value)	PROBABILITY (Standard Devation)	IMPACT (mean value)	IMPACT (Standard Devation)	IMPORTANCE (PROB x IMP.)
67,28	16	6,41	1,73	431,18

Survey respondents' comments:

Probability
- This evolution is going to happen and it has to happen, but more slowly than it should be.
- On broad term, e.g.with the food or textile industry this would be possible.

Impact
- The supply chain considered in the Strategy involves optimization of industrial consumption of such poroducts like warehousing of raw materials, transportation of logs, supply of agricultural waste etc. Everything influence direct product costs.
- Wood products can participate in a same global frame of circular economy applied to consumption and production of goods
- Waste management will have a seconday used and companies will adapt their waste management to this new regulations. It will also have a possible new income for the industry.
- This would eventually lead to a very different way of working and a lot of new partnerships.
- this will become widespread all over Europe and it is a necessity to save the planet for our children and grandchildren.
- The reinforcement of the existing synergies with other sectors of primary production (e.g. Agriculture), as well as with EU and national funds and instruments, is expected to maximise the opportunities to, and the impact of, promoting the circular economy principles.
- The bioeconomy strategy is linked to the development of new materials, new processes and new ways of generating products. Learning from nature, not only to recirculate mass and eliminate the

concept of waste but also, how to collaborate. CE can not be achieved by one company but by an ecosystem of players in symbiosis.   The furniture sector has a great opportunity to make this first step ahead.

- Synergie effects can be a added value. To use the material more effective and more than one time.
- Potential competition among sectors could distort supply in the furniture sector, but could also stimulate innovation and research of new bio-materials
- not a real challenge for furniture. more for forestry sector
- marginal impact
- it would be coherent and would have a strong impact if all of the sectors in primary production were creating synergies, circularity is something structural, not something that a sector or a company can achieve independently, so agreements and common strategies between sectors will be extremely useful and necessary
- I lack the hope that European economic policy can understand and apply the basic principles of the network economy.
- I have answer it in the previous question ;)
- As mentioned in the previous point, the real implementation of these synergies would have a significant impact in the sector because it would change the way the manufacturers use raw materials and manage their wastes.
- Although the evolution will be slow, the impact will be very positive and little by little all the companies in the sector will copy those same strategies of change.

Overall comments:

- The scenario is covered in great detail. All elements of the circular economy are covered, but some detail in the use of human resources may be required. It is not clear what the link is between strengthening the role of the circular economy in the Furniture Sector and: - labor productivity; - employment in the sector; - required competencies of all kind of staff.
- You could consider the role of sectorial technical standardization activity at European level (CEN) as a tool to encourage this process on a voluntary basis.
- Within the instruments and communication, it has not included the proposal of the European Product Environmental Footprint that could incorporate a system of levels through letters for products at European level.
- We need to find new additives which makes furniture healthier, because wellbeing is going to be also a priority, and certifications as WELL are going to win importance.
- There were questions from the consumer's perspective regarding specific systems such as ISO, certifications, chains of custody, environment. I don't think that the consumers will look at specifics. Their demands are more in general that they demand changes in a more sustainable production way. The producer has to show real commitments under the system they then select. Under circular economy and sustainability there also is a total need for social sustainability.
- There is nothing missing. We have no specific comments.
- There are a number of policy instruments that could increase the furniture sector transitioning to a circular economy.   - Financial instruments to increase repair and re-manufacturing (could include VAT exemptions or tax refunds) - Banning the landfill of reusable furniture - infrastructure development for consisting bulk waste collection and sorting systems across Europe.   - training & up-skilling programmes for furniture designers and producers -funding for pilot and demonstration programs that include the full value chain - consumer education programmes that encourage valuing of long-life products.   - taxation of virgin raw materials to encourage the use of recycled etc.   - shifting tax from income tax to resources consumption tax - as a CE will be more labour intensive so reducing these costs without reducing wages is key
- The instruments considered in the document "State of the art of Circular Economy in the Furniture Sector" appear to be a quite complete list and I do not know other missing instruments. Maybe, I am too optimistic in my evaluation of the foreseen scenario for 2030, but I consider that most of the actions considered, consider changes in production schemes and in attitudes and habits of consumers. These changes are positives for sustainability improvements and also for economy improvement.
- One of the main challenges to the EU furniture sector is the enormous competition from countries having low production costs. Embedding the principles of circular economy, including the reliance on raw materials from sustainable sources, reuse and recycling of furniture products/components, cascading use of wood, as well as the increased furniture products' transparency and synergies with other economic sectors are one of the main ways to overcome the existing challenges and stay competitive on the global market.
- Nothing come to my mind.   I would like to emphasize that in the end those changes will be driven by people. People have to be well educated in new way of working and understand the reason.
- My specific comments: - The scenario that we predict tends to be the one that we create. Let's aim high.   - Let's think user-centered, storytelling, strategic advantages.   - Let's be inspired by stories such as Too Good to Go. Everyone used to think an app for food-surplus was bound to fail, no one would use it, reaching critical mass would be impossible, and yet it all turned out possible with compelling enough storytelling and investment.   These comments are probably not new to you at all. I don't mean to be captain obvious, just want to stress what's important in my view. Keep up the nice work!   Kira

- In your questions many items are related to each other. It is a general trend to produce more sustainable products. Green public procurement can be a major driver to accelerate the transition of the furniture sector into a sustainable and circular industrial activity.

- In 2030, increased awareness (concern) about environmental impacts will favour the market for green products. The legislative framework will favour companies that promote sustainable innovations. Products will also be replaced by services in some furniture sectors. Eco-design will be a key tool to prevent impacts by increasing product quality.

- In 2030 what will be the balance between the historical furniture manufacturers and the new structures (associations, start-up, companies...) collecting used furniture and refurbishing or upcycling it. What economic consequences, what about taxes applied or not on refurbished products. What about the competences and skills needed to facilitate the reparation of used furniture? The answers in this survey only reflect my position and do not engage the responsibility of FCBA.

- I would suggest to map all the relevant stakeholders currently working to achieve the transition of the Furniture Sector toward a more Circular Economy in 2030.

- I think you have covered all the related issues of the furniture sector. I am optimistic with the 2030 scenario. There is still a lot to do, but we (researchers, designers, providers, manufacturers, distributors, retail, consumers and recyclers) have instruments to paw our way to a more circular sector. Big efforts will be needed, but they are worth it! The change of mindset in production and consumption is already happening, we now need to replicate at large scale. Congratulation for the work done!!!

- I think we need to focus more on consumers' needs and wants, and find issues that can be used as nudging their buying behaviour to concern more circular economy aspects (transformative marketing).

- I think the questionnaire dealt with the main points that await the European political agenda until 2030. In addition to what emerged during the questionnaire phase, I would add the need for companies in the wood-furniture supply chain to achieve the goals set by the SDG's Agenda. 2030 and the need on the part of the EU states and companies to turn towards a digitalisation of their industrial processes in order to favour the traceability of products and greater transparency of their work towards final consumers.

- I think the instruments listed are complete. with regards to the report, it might be relevant in the introduction section to clarify how these tools and instruments strongly relate to the circular economy framework (which part of the framework). An introduction on Circular economy concept and its understanding in the sector would be relevant as well in the intro. a final section could also delineate which instruments are more likely to accelerate the implementation of a circular economy in the sector,

- I think the focus of the current instruments (and therefore this report) might be a bit too much on the materials and innovations around a business as usual approach. The biggest challenge imo lies into redesigning companies as a whole, taking in the circular (but also social) challenges on a strategic level. A report that imo was rather successful in combining these different levels of change is the plastics report of the EU here: https://op.europa.eu/en/publication-detail/-/publication/33251cf9-3b0b-11e9-8d04-01aa75ed71a1/language-en/format-PDF/source-87705298 We were also part of writing this report (the parts on design and business model innovation), and would love to share these insights with you for this report if needed.

- I think that there is a lack of elements that consider the importance of the dimension of local production and distribution, the synergies of local enterprises from different sectors (sectorial cluster and non-sectorial industrial district). ecopark ...

- I think that the great change to a circular furniture sector won't come thanks to legislation but from a shift in business models.

- Regional and national government policies will have a great impact on the 2020 scenario of all sectors, but obviously it is impossible to foresee their future evolution and the consequent impact, at the moment. I suggest to take into consideration during the workshop the relevance of the growing sensibility of people toward environmental friendly aspects in their purchasing and the increasingly alarming effects of climate change on the planet as factors that can push toward more restricting environmental friendly demands and criteria, in spite of the difficulties to forecast their real evolution and impacts.
- I miss the attention for developing sound business models. If entrepreneurs begin to understand that they can build a healthy company and make profit with circular business models than there will be a market incentive to develop the circular economy. We need to enhance this awareness among our companies. I think in 2030 there will be a new type of circular entrepreneurs that make the difference.
- I don't think we can expect big voluntary commitments. Customers might want to change but other factors beyond sustainability are on the table. I see them more into health so some links with sustainability might be interesting. New business models may arise but I don't see them completely changing the linear economy within 10 years. The only choice we have are strong regulations not only for European producers but mostly for those who want to sell goods in EU
- I consider the survey very complete. Nevertheless, the implementation of circular economy tools will suppose more opportunities of industry symbiosis with other sectors that we don´t know already.   Moreover, the implementation of circular indicators by sector or regions will have an impact in the industry, as it will be necessary to monitor its implementation, with legal minimum indicators to achieve.
- I believe the missing "strategy" not considered by legislative or voluntary instruments is education. Ecodesign from an engineering perspective can be considered or "added" within a framework but the people behind the process of redesigning or challenging status quo with a new design or model need inspiration, education, tools.. in other words we can set up the game "rules" but if no one knows how to play well that it will be very difficult to achieve the results we desperately need. Ecodesign and lifecycle thinking should be included in all education levels to start generating radical results.   Furniture, as textiles and apparel, have a great chance to be leading a new generation of products and business models, but the sector should embrace a more cradle to cradle approach, demanding for better educational tools and positive (fiscal and market) incentives to reward virtuous cycles and efforts.   By 2030 I believe, great innovations would be in place, mostly on new bio-materials.
- generally speaking, there will be a movement of general opinion that will ask the furniture industry to become increasingly green, as for the food and cosmetics industry. The sector will need to have a B2C oriented label to measure its compliance with environmental issues.
- For a CE to happen we also require: Pilot studies, demonstration projects, e.g. R&D Financial instruments, e.g. tax, refunds, discounts - for example taxing resources rather than people Training and development, e.g. upskilling for the CE Infrastructure development, e.g. EU-wide collection schemes Customer awareness campaigns, e.g. create demand for circular goods Specific bans, e.g. landfill, incineration
- EPDs are a voluntary tool that is currently gaining strength in the sector due to the demand for environmental market information. However, this information is too technical for the final consumer. The European environmental footprints (PEF) are expected to be a very useful tool to be considered by all sectors when informing this type of final consumer of the environmental properties of their products. https://ec.europa.eu/environment/eussd/smgp/ef_pilots.htm
- Companies in the furniture sector will move at two speeds. The largest that can invest more money in research will include more sustainability actions than smaller ones. The latter will need more time, but will take the largest ones as a reference, achieving similar long-term results. The

existence of European regulations will force companies to carry out the necessary actions to comply with the established standards.

- Companies are clearly stepping in and experimenting with the furniture as a service models (es. https://www.livefeather.com or https://www.duurzaambedrijfsleven.nl/circulaire-economie/20571/auping-wil-circulair-slapen-as-a-service-groot-maken). Legal instruments to make these models viable and really circular and environmentally sustainable are needed.
- carbon stock in the harvested wood product, including furniture, will possibly be regulated in the next years. voc regulation and testing for furniture (with classification and labelling) would become a major drive for the customers (both B2C and B2B).   if service as a product will take off, it will be great for the environment, great for the consumers, and great for few companies that would be able to implement it. many others would suffer.
- At this stage no.
- As with any scenario, a lot depends on how the political landscape changes over time. Defining this kind of scenarios is extremely important if they are regularly updated in order to become political decision-making instruments.