Tableau_Analyse_Articles_Facteurs_Referencement

aine De	Oomaine de facteur INNOVATION	Code Catégorie de facteur 1 Intrinsinc	Type de facteur a Technical aspects	Code facteur 1 interoperability among applications software	nb fact	Tot 11	_	3 4	5 6	7 8 X	9 10	11 12	2 14 15	16 17	18 19 20	0 21 22	23 24	25 27 28 X	8 29	9 3 T	
	CARACTERISTICS	<u> </u>	a redimedraspects	2 Maturity of the technology / completeness / reliability / robustness		6	X X	x	H	X	_ x	X	\coprod		X X	x X	Ш	x	世	\pm	
				consistent IT platform, information sharing, collaboration planning and operation integration hardware requirements		2		_	\square	х		х	oxdapprox	Ш	\coprod	+	Ш	\coprod	$oldsymbol{\square}$	Ŧ	
				5 modifiability / adaptability		1	\vdash	+	${\mathbb H}$		H	+	+	${}$	+	+	Н	+	+	+	
				6 Type of licenses/ Licensing product to members other than owner and client		1		1	П				$\!$	x	\bot		П	#	世	ļ	
			b Economical aspects	 maintenance costs / running costs (recurring need for additional/associated resources) / need for frequent update Cost of human-based service costs and BIM consulting 	3	8	х	+	\mathbb{H}^{J}	х	х	х	₩	x	x	₩	H	×	₽	+	
				9 Cost of technology / affordability		1	\vdash	+	H		\vdash	+	+	$\forall \exists$	+	+	Ш	+	+	†	
			c Availability	10 availability of library	8	2		1	\square			х		Ш	\bot	х	П	\bot	卫	Ī	
				11 availability of commercial assessment tools 12 Availability of BIM training programs		1	x	+	₩	v v		<u> </u>	+		+		H	+	₽	\downarrow	
				 availability of framework and implementation plan / standards to guide implementation / legal framework for adop 	ng	4	x x	+	${\mathbb H}$	x x	×	x	++	 X X 	 *	X X	H	+	+	+	
				14 availability of technical supports / documentation / noteworthy publications		6	хх	İ	Щ	х			苴	х	世	x	Ш	x	T	İ	
				15 Trialability (possibility to try before deciding / availability of free trial software)		4	×	1	Ш	х	х		\coprod	Ш	$\bot\!$	4	Ш	\bot	\perp	1	
				16 long term providers : vendors / suppliers 17 competition among the (IT) suppliers		1	\vdash	+	\mathbb{H}	x x	\vdash	+	$+\!\!+$	₩	$+\!\!+$	₩	H	+	+	+	
			d Observability	18 Communicability, demonstrability, profitability / promotion of BIM / marketing of vendors on BIM potentials /	4	6		†	H	Ť	х	хх	#	Н	+	хх	H	+	+	,	
				19 Proof of efficiency , cost savings and productivity gain by adoption		7	×	Ţ	х	хх	x	\perp	\prod	Ш	x	П	Ш	×	$oxed{\Box}$	I	
				20 availability of evaluation criteria and measures for firms 21 Case studies		3	×	+	₩	+	H	+	$+\!\!\!+$	₩	$+\!\!+$	H_{\downarrow}	${\color{blue}H}$	$+\!\!+$	┦	$^{+}$	
		2 Company-relative	a Compatibility	22 BIM uses supported / applications / features	4	6	x ^	+	${\mathbb H}$	+	-	х	+	$\forall \forall$	 x	++^	Н	+	+	+	
		characteristics		23 Compatibility / applicability to existing processes		11	×	İ		х	х		ፗ	Ш	х х	x x x	х	x	T	1	
				24 BIM data schema pertinence 25 nature of the construction industry (fragmentation of industry)		2	х	+	₩'		Ш		+	₩	$+\!\!\!+$	#	Ш	+	\perp	\downarrow	
			b Relative advantage or		6	9	×	+	\mathbb{H}	+	\vdash	X	+	${\mathbb H}$	++	 x	${}$	x x	+	+	
			disadvantage	27 Risks / share of risks with bidding BIM projects (types, size, teams, locations) / security concern (data, propagating		6	x	†	H	х	H	Ť	++^	x	x	x	Ш	x	H	t	
				28 cost / saving & cost reduction		2	\prod	1	卩	х	I	\perp	\prod	П	х	\prod	П	#	\perp	1	
				29 Productivity 30 client's satisfaction with BIM projects		2	×	+	\mathbb{H}^{\prime}	х	\vdash	\dashv	#	H	$+\!\!+$	 	H	$+\!\!\!+$	+	+	
				31 consolidating marketing strategy		1	+	+	\mathbb{H}	х	+	+	++	+++	++	$++^{\times}$	H	++	+	+	
			c Perceived Ease of Use		7	9	х	\perp	П		хх		苁	Ш	x	x x	х	x	世	1	
			(complexity)	33 BIM standards, codes, rules, and regulations 34 Convenience of BIM operation		6 2	x	+	\coprod^{1}	X	х	\coprod	+	\coprod	x x	\prod	\coprod	×	\perp	\downarrow	
				35 Ease of getting expected outcomes by BIM		3	+	+	X	x	+	\parallel	#	+++	++	++	H	$+\!\!+$	+	+	
				36 user-friendliness of BIM tools		4	х	士	x		\parallel	ď	廾	x	x		\Box	#	廾	t	
				37 Frequency of errors made with BIM 38 he confused or frustrated when using BIM / he confestable		2	\prod	T	x	\perp	\prod	I	\prod	П	х	\prod	П	#	卩	1	
			d Perceived Usefulness	 38 be confused or frustrated when using BIM / be comfortable 39 Perceived Usefulness / suitability of BIM for practices, organization type, and project types / usefulness in my job (u 	es 3	10	\ \	+	×	v	\vdash	v	+	₩	+	//	Н	+	+	ł	
EXTERNAL I				40 effectiveness (and benefits) of BIM / improvement of job satisfaction, work performance, communication, outcome		8	^	T _x	×	x	\vdash	Ť	+	x	x ^	X	Ĥ	+	+	t	
				41 Personal recognition about case of BIM operation		1				х			\perp	Ш	Ш		Ш	\perp	\perp	1	
	EXTERNAL CONTEXT CHARACTERISTICS	1 External context (strong)	a Normative pressure	43 Availability of BIM professionals / trained professionals	11	10	x	\perp	\square	хх	х	хх	\Box	x	\prod	х	Ш	\prod	ot	Į	
				 Consultant effectiveness / BIM knowledge within project consultants Contractual sharing norms, and procurement methods about ownership (contractors benefit from confusion, mature) 	y of	7	<u> </u>	+	\mathbb{H}	X	х	+	+	$\frac{1}{\sqrt{1}}$	+	₩	Н	+	+	+	
				46 Procurement skills of client		1	Ĥ	$^{+}$	\forall	1	\vdash	+	+	HĤ	+	+	Ш	+	+	t	
				47 Devining levels of BIM working for reference in professional services agreements / advocation for the use of BIM fo	·	b 2		1	х				ፗ	Ш	х		П	\perp	T	1	
				 48 Culture of the sector (shared identity, norms, values and assumptions) and Awareness and readiness among industr 49 Standardized work procedures for BIM / Guidance on use of BIM 		3	x	+	₩	х	Н	4	$+\!\!\!+$	\coprod	+	Н.	\coprod	×	₽	+	
			50 Performance measures and benchmarking of continuous improvement / metrics for quantitatively evaluating the		2	\vdash	+	${\mathbb H}$	x	\vdash	+	$+\!\!\!+$	$\stackrel{x}{\vdash}$	 *	$\frac{1}{x}$	Н	$+\!\!+$	+	t		
				51 Reputation in the industry of other projects in BIM		1		İ	х				Ш	Ш	\perp		Ш	\perp	T	1	
				52 Industry standards and wide use 53 National applicability		3	\vdash	+	$\sqcup \sqcup$	х		х	4	Ш	$+\!\!\!+$	₩	\coprod	+	\perp	4	
			b Coercive	54 client's demands, interest, effort, support (financial / other), pressure (refusal to deal)	7	20	хx	+x	×	хx	хx	x x	#	₩	$\frac{1}{\times \times}$	X X X	H	x x	+	t	
				55 awareness, readiness, pressures or encouragement from the construction players (competitors, peer association, in the construction players)	ulti-	13	×	İ	х	хх		х	×	. х	ххх	k x	Ш	хx	T	1	
				 awareness, readiness, pressures or encouragement from team partners and subcontractors push, incentive programs, or support from government (promotion, financial support, regulation) and policy / regulation 	ory	17 17	×	X	\sqcup	x x	хх	x x	<u>X</u>		x x x	x x x		x x	\perp	4	
					58 Globalisation and competitive strategies	Oly	1	××	+	×	x x	X	XX	+	H ^x	* X	X X	H ^X	* * 	+	t
				59 Increase of design and build / BIM demand		1		İ	Ш	х		Ī	世	Ш	世	\dagger	Ш	廿	\perp	1	
		25		60 Dependance on parent company		1		\perp	\square	х		\perp	\coprod	Ш	\coprod	\bot	Ш	\prod	ot	\downarrow	
		2 External context (weak)	a Mimetic processes	61 Industry market trend and wide use / willingness to use BIM by stakeholders 62 Global openess or resistance toward BIM (subjective norm) / holistic readiness	8	7	V V	+	\mathbb{H}	X	×	+	+	H _v	$+\!\!+$	₩	H	* ,	+	+	
				63 Awareness of the technology among industry stakeholders		3	Ĥ	$^{+}$	${\mathsf H}$	x x	H	+	+	\prod	+	$\dagger \dagger$	ΠĤ	x	+	†	
				earliness of adoption (in the diffusion process)		4		1	\Box	х			$\!$	Ш	\perp	х	П	x	\perp	1	
				65 Environmental uncertainty 66 Mimicking behaviours by imitating successful practices/competitors in the market		1	\vdash	+	\mathbb{H}^{\prime}	X	\vdash	oxdot	#	\coprod	++	$+\!\!+\!\!\!+$	H	$+\!\!\!+$	+	+	
				67 Mimetic isomorphism in technology selection		1	+	+	\mathbb{H}	x	+	+	++	++	++	++	H	++	十	+	
				68 Willingness to recommend others to use BIM / recommand BIM to colleagues		2			х					Ш	世		縙	世	丁	1	
	INTERNAL CONTEXT CARACTERISTICS	1 Culture	 a Identity, demographic and strategy 	70 Organizational vision, challenges, policy and project strategy	13	3	х	T	\prod	T	П	T	\prod	П	\prod	х	П	\prod	卩	1	
				71 size (number of employees) / human resource 72 experience (date de création de l'entreprise)		2	\vdash	X	\mathbb{H}	X	\vdash	dash	++	++	×	$+\!\!+\!\!\!+$	H	$+\!\!+$	+	+	
				73 specialisation / service		2	+	+	\mathbb{H}	X	+	+	#	+++	++	++	H	++	+	+	
				74 Financial resources of organization		2		\perp	Щ	х			廿	Ш	廿	苁	世	x	丿	1	
				 75 Financial perspectives and economical health / ability to create business opportunities and possibilities 76 hiring strategy (hiring people to keep knowledge) / outsourcing 		4	\mathbb{H}	+	\coprod^{1}	x	$oldsymbol{oldsymbol{oldsymbol{eta}}}$	\coprod	+	\coprod	+	x	\coprod	×	4	\int	
				niring strategy (niring people to keep knowledge) / outsourcing 77 Organizational flexibility/adaptability to market / learning capability		2	X	+	\mathbb{H}	x	+	+	++	+++	++	$+\!\!+$	HH	+	+	+	
				78 differentiation in market (unique products or services in a large market) / niveau de spécialisation		1	\parallel	$^{+}$	Н		\parallel	廿		$\parallel \parallel$				x	廾	t	
				79 level of internationalization		1	Д	T	\prod	\bot	I	I	\prod	П	\prod	\prod	П	×	卩	1	
				80 Future needs 81 technological capability of organization		1	+	+	\mathbb{H}^{\prime}	+	+	dash	++	++	×	$+\!\!+$	H	+	+	+	
				82 Brand image and identity communication / reputation		2	+	+	\mathbb{H}	х	+	+	++	++	++	++	H	+	+	†	
		b Projects	83 physical size and cost of a project (square meters, cost and duration)	6	3		\perp	Щ	х		I	廿	Ш	x	x	世	廿	丿	1		
			84 complexity of projects (building shape or building systems) 85 use of buildings (hospital, office, factory, etc)		1	\mathbb{H}	+	\coprod^{1}	\perp	$oldsymbol{\mathbb{H}}$	\coprod	+	\coprod	\prod	x	Щ	#	\perp	ļ		
				use of buildings (nospital, office, factory, etc) 86 project delivery systems		1	+	+	\mathbb{H}	+	+	+	++	++	++	X	H	++	十	+	
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			c Innovativeness	 89 organisational innovativeness 90 Investments and initiatives / continuous investment / Financial resources devoted to IT technologies / software interest 	6 gration compe	2 ti 4	,	+	\mathbb{H}	х	+	dash	++	HH	×	K X	x	*	+	+	
				91 Intensity of IT integration		2	+	+	H	хх	+	+	+	++	++	$+\!$	H	++	+	+	
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				93 Research and development capability of organisation		1	Д	Ţ	卩	х	I	Д	#	Щ	#	\prod	Щ	#	otag	Ţ	
			d Effectiveness	94 resistance/openess to change 95 Availability and effectiveness of operations systems	2	1	+	+	\mathbb{H}	у	+	${+}$	++	H	+	$+\!\!+$	H	$+\!\!+$	+	+	
				96 Cross cultural effectiveness among members of organization		1	\parallel	+	\mathbb{H}		\parallel	\vdash	#	$\parallel \parallel$		+		x	\mathcal{H}	†	
		2 Interactions	a Collaboration	97 internal information flows / information-sharing protocols	7	5	Щ	1	\prod	х		I	ፗ	x	×	\prod	П	х	工	1	
				98 human capability resources 99 cross-training (job rotation)		1	\vdash	+	\mathbb{H}^{\prime}	\vdash	oxdot	dash	#	\coprod	$+\!\!+$	+	H	<u>*</u>	+	+	
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193 adopt effective communication, collaboration, coordination practices and use adequate communication coll coor tools 194 setup feedback loop for process improvement (continuous improvement) 195 raise issues as soon as they emerge 196 client satisfaction - product 197 client satisfaction - service 198 defects 199 predictability - cost / time 200 profitability / productivity / return on investment / performance 201 construction - cost / time 199 coordination operatices and use adequate communication coll coor tools 1			b Motives c Attitude towards change a Change agent & b Pilot Project c Training	156 Déductif/inductif 157 There are many: maybe not interesting to note 158 subjective norm (perceived expectations from others for adoption) 159 senior management support, reluctance or pressures / (top management support) (internal motivation to actively 160 Individual and group motivation to adopt BIM / interest / behavioral intention to use / continue using 161 team engagement 162 Project manager's interest an dwillingness in adopting BIM 163 consensus on appropriation 164 attitude towards BIM / change (positive / negative) 165 interest in learning BIM 166 Opinion on the idea to use BIM (think it's a good idea/bad idea) 167 Appréciation de l'utilisation (appraising) (j'aime utiliser) 168 organizational intention of Bim acceptance 169 Individual intention of Bim acceptance 170 level of bureaucracy (for BIM adoption decision-making) 171 approach for BIM: in-house ressources or outsourcing 172 team pilot project 173 interdisciplinary of team for pilot project 174 dedicated BIM/information manaager 175 deciared effinition of roles 176 Pilot project 177 Training process 178 provide technical training 179 customization and capability challenge 170 make sure the processes are in a logical order (sequence) 178 ask cure the processes are in a logical order (sequence) 178 delar definition of project (size (square meters, cost and duration) 178 delar definition of project (size (square meters, cost and duration) 179 clear definition of project (size (square meters, cost and duration) 179 clear definition of project (size (square meters, cost and duration) 170 definition of project goals clear definition of objectives and requirements before formation 179 clear definition of objectives and requirements before formation 170 clear definition of objectives and requirements before formation 170 clear definition of objectives and requirements (data exchange, information exchanges, reference 170 clear definition of objectives and requirements and appairements and requirements before formation	6	0 0 0 5 1 1 2 9 6 1 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1	x x x		x x x x x x x x x x x x x x x x x x x			x	x x x x x x x x x x x x x x x x x x x	x x x x x x x x x x x x x x x x x x x	x x x x x x x x x x x x x x x x x x x			x x x x x x x x x x x x x x x x x x x
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200 profitability / productivity /return on investment / performance 2 X X 201 construction - cost / time 1 X X			b Motives c Attitude towards change a Change agent & b Pilot Project c Training d Method and strategy e Communication	154 Base 155 Objectives, common objectives / needs (performance, etc) / necessity for future works / benefits motives / Project. 157 There are many: maybe not interesting to note 158 subjective norm (perceived expectations from others for adoption) 159 senior management support, reluctance or pressures / (top management support) (internal motivation to actively 160 individual and group motivation to adopt BIM / interest / behavioral intention to use / continue using 161 team engagement 162 Project manager's interest an dwillingness in adopting BIM 163 consensus on appropriation 164 attitude towards BIM / change (positive / negative) 165 interest in learning BIM 166 Opinion on the idea to use BIM (think it's a good idea/bad idea) 167 Appréciation de l'utilisation (appraising) (j'aime utiliser) 168 organizational intention of Bim acceptance 169 individual intention of Bim acceptance 169 individual intention of Bim acceptance 170 level of bureaucracy (for BIM adoption decision-making) 171 approach for BIM: in-house ressources or outsourcing 172 Team pilot project 173 interdisciplinary of team for pilot project 174 dedicated BIM/information manaager 175 clard definition of roles 176 Pilot project 177 Training process 178 provide technical training 179 Customization and capability challenge 179 Training on strategic issues 180 Training on strategic issues 181 provide a common data environment (CDE) 182 make sure the processes are in a logical order (sequence) 183 select appropriate tools to perform the applications 184 clear definition of implementation plan and clarity of implementation process / document BIM execution plan including, 185 clone of a Pilot project (size (square meters, cost and duration) 186 definition of projects (pade sequence) 187 dear definition of projects (datermine model content requirements before formation 188 delar definition of projects of determine model content requirements before formation 189 delar definition of projects professional plan and clarity of implementation process / docume	11 6 6 7 7 5 5	0 0 0 5 1 1 2 9 6 1 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1	x		x x x x x x x x x x x x x x x x x x x			x		X	x x x x x x x x x x x x x x x x x x x	X		x
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		203 level of stress during implementation		0			П	П	П					П	\prod
		204 level or errors during implementation		0		П		П	П	Ш			Ш	\Box	Π
	g Risk management	205 define model authors, users, managers throughout project life cycle / avoiding/hiding potential risks and liability	3	2				П				х		П	х
		206 legel issues around ownership, IP&PI insurance terms		4	П			П		Ш	х	x	x	П	x
		207 selection of project delivery methods (design-build, design-bid-build, CM) / sharing of risks and rewards among team members that are tied to project success / defining of the contracting/contract arrangement / definition of terms of payment / selection criteria for procurement (cost based, quality-cost based)		2								х			x