Hypothesis	Response variable(s)	Explanatory variable (Effect)	Mechanism(s)	Examples of supporting literature	Results
(1) Anthropogenic pressures					
Human disturbances extirpate species richness	S_I, S_P, S_{tot}	HII (-)	Habitat destruction/degradation Agrochemical pollution	Aguilar *et al.* 2006; Ricketts *et al.* 2008; Winfree *et al.* 2009; Brittain *et al.* 2010; Burkle *et al.* 2013; Weiner *et al.* 2014	Not detected
Human disturbances promote species richness	S_I, S_P, S_{tot}	HII (+)	Landscape heterogeneity Invasion of alien species	Aizen 2007, 2008; Winfree *et al.* 2007, 2008; Carré *et al.* 2009; Stouffer *et al.* 2014; Vanbergen *et al.* 2017; Wenzel *et al.* , 2020	Not detected
Human distrubances favor generalist species	C, G_I, G_P	HII (+)	Specialization-disturbance Theory (Vazquez & Simberloff 2002) "Spreading the risk" (Den Boer 1968) Secondary extinction cascades (Dunne 2002a; Memmott *et al.* 2004) Super-generalists invasion (*sensu* Olesen *et al.* 2002)	Biesmeijer *et al.* 2006; Steffan-Dewenter *et al.* 2006; Aizen *et al.* 2008; Aizen *et al.* 2012; Burkle et *al.* 2013; Spiesman & Inoue, 2013; Albrecht *et al.* 2014; Stouffer *et al.* 2014; Weiner *et al.* 2014; Tylianakis & Morris 2017; Redhead *et al.* 2018	**Detected** for complete networks and Hymenoptera, not Diptera
(2) Climate effects					
Pollinators tend to favor hot and dry environment	S_I, S_{tot}	P_{tot} (-) T_{mean} (+)	Poor flying conditions under rainfall (Cruden 1972) Metabolic activity (Turner *et al.* 1987)	Arroyo *et al.* 1982; Wolda 1987; Devoto *et al.* 2005; Martin Gonzalez *et al.* 2009	**Opposite results** T_{mean} (-) on S_I, S_{tot}
Productive environments favor specialization	C, G_I	P_{tot} (-) T_{mean} (-)	Resources abundance and Optimal Foraging Theory (MacArthur & Pianka 1966)	Dalgaard *et al.* 2013; Takemoto *et al.* 2014; Takemoto & Kajihara 2016 Petanidou *et al.* 2018	Not detected
Diverse environments favor generalism	C, G_I	P_{tot} (+) T_{mean} (+)	Resources dilution and Optimal Foraging Theory (MacArthur & Pianka 1966)	Schleuning *et al.* 2012	Not detected
Climate seasonality limits species richness	S_I, S_P, S_{tot}	P_{var} (-) T_{var} (-)	Unfavorableness of unstable environments (Brown 1988) Diversity-stability (Pianka 1966)	Arroyo *et al.* 1982	**Detected** only for P_{var} on S_I for Diptera
Climate seasonality promotes species richness	S_I, S_P, S_{tot}	P_{var} (+) T_{var} (+)	Climatic niche diversity	Petanidou *et al.* 2018; Takemoto *et al.* 2014	**Detected** only for T_{var} on S_I for Hymenoptera
Climate seasonality favors generalist species	C, G_I, G_P	P_{var} (+) T_{var} (+)	Optimal Foraging Theory under fluctuating environment (May & MacArthur 1972) Diversity-stability (Pianka 1966)	Arroyo *et al.* 1982; Devoto *et al.* 2005; Dalsgaard *et al.* 2017	Not detected
Climate seasonality increases phenological mismatches	C, G_I, G_P	P_{var} (-) T_{var} (-)	Forbidden links (*sensu* Olesen *et al.* 2011)	Vazquez *et al.* 2009; CaraDonna *et al.* 2017; Petadinou *et al.* 2018; Takemoto *et al.* 2014	Not detected
(3) Sampling effects					
Connectance decreases with network size	C	Network size = S_{tot} (-)	Link-species scaling law (Cohen *et al.* 1990; Winemiller *et al.* 2001)	Jordano 1987; Olesen & Jordano 2002; Thébault & Fontaine 2010	**Detected**
Link density of species increases with available partners	G_I, G_P	Partner pool = S_I or S_P (+)	More potential partners allow more interactions (Relative specialization: Armbruster 2017)		**Detected**
Sampling effort inflates the number of interactions & species recorded	C, G_I, G_P, S_{tot}, S_P, S_I	SE (+) or stdSE (+)	Completness of the survey (Blütghen *et al.* 2008; Dormann *et al.* 2009; Rivera-Hutinel et al. 2012)	Ollerton & Cranmer 2002; Chacoff et al. 2012; Vizentin-Bugoni *et al.* 2014; Traveset *et al.* 2016; Dalsgaard *et al.* 2017; Zanata *et al.* 2017	**Detected**
Richness increases with temporal extent	S_{tot}, S_P, S_I	ATS (+)	Completness of the survey	Sajjad *et al.* 2017; Schwarz et al. 2020	**Detected**
Connectance decreases with temporal extent	C, G_I, G_P,	ATS (-)	Increase of forbidden links (*sensu* Olesen *et al.* 2011)	Sajjad et al. 2017; Schwarz et al. 2020	**Detected**
T-O sampling decreases richness detection	S_{tot}, S_P, S_I	Sampling method (-) [a]	Completness of survey		**Detected**
T-O sampling increases interaction detection	C, G_I, G_P	Sampling method (+) [a]	Evenness of observation effort allocated among plant species	Gibson *et al.* 2011	**Detected**
Low taxonomic resolution hides real richness	S_{tot}, S_I, S_P	Taxonomic resolution (+)	Lumping of species in morphospecies		**Opposite results** Taxo (-) on S_{tot} and S_I
Low taxonomic resolution inflates generalism	C, G_I, G_P	Taxonomic resolution (-)	Merging species partner pools	Renaud *et al.* 2020	Not detected