Methods

In this article, we follow the methodology of Abson et al. (2014) to obtain a quantitative, bibliometric overview of the peer reviewed literature and get inductive insights in different research fields. Based on the quantitative results, we then use a qualitative approach to gain deeper insights into the commonalities and differences of research approaches and thus find out how alternative trade arrangements are perceived and addressed in the academic literature (Hoon, 2013).
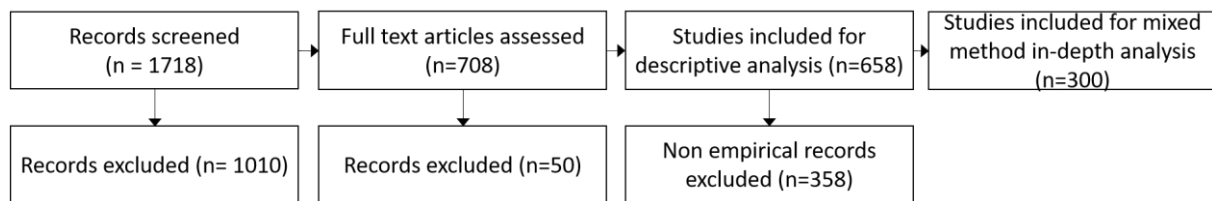

Fig. 1: 1718 documents were identified through the use of the database scopus. Based on the abovementioned criteria 1010 of these initial publications were excluded. 658 publications were used for descriptive statistics whereof 300 where identified as empirical papers. These were used for an qualitative as well as quantitative in-depth analysis.

For this purpose, we use the electronic database Scopus to search for all relevant scientific articles. (See Fig. 1) The database was queried using a search string consisting of a variety of terms related to 'alternative trade arrangements', 'ehtical trading' and 'fairtrade' (See supplementary material for the detailed search string). Only peer-reviewed English journal articles were considered. Conference papers and business reports were therefore excluded (e.g. Ellen 2003). Articles were included that dealt with fair, ethical or alternative trade on a business, governance or certification level. Although the authors acknowledge that there are similarities between local and global value chains and that macro-economic factors play an important role in these dynamics, this review focuses solely on scientific insights from value chains in the global arena. Articles that thematize trade relations within a region or country (e.g. Feyereisen et al. 2017) and trade relations that refer to macro-economic questions (e.g. Lowe 2014) were thus excluded.

Even though a variety of products (e.g. minerals, fabrics, garments and electronics) are distributed through global value chains, we specifically focus on food commodities. Papers investigating the apparel(e.g. Miller and Williams 2009) or flower industry (e.g. Wright and Madrid 2007) were not considered. Our interest is on trade relations and global value chains, therefore we excluded perspectives of corporate social responsibility (e.g. Wildes 2008) or corporate-driven ethical sourcing initiatives such as the Ethical Trade Initiative from the United Kingdom (Terstappen 2012). In doubtful cases, besides abstract screening, the full paper was used to take a decision.

Of the potential 1718 documents 658 matched the inclusion criteria and were considered for full-text analysis. Abstract screening and full text analysis was used to identify descriptive characteristics of the respective articles (e.g. focus of the supply chain, certified market, product, geographical region).

Under the hypothesis that co-abundance of different conceptual vocabulary can be used as a proxy for separated research streams, we performed a bibliographic full-text, multivariate word analysis. In accordance with the work of Abson et al. (2014), we conducted all statistical analysis in R (R Core Team, 2012). We generated a word matrix, which we then filtered in order to delete buzzwords that generated no conceptual insight ("SMART" from the function "stopwords"; library "tm"). We then

checked for co-abundancy of words between papers. The rationale behind this step is to reduce the bias of favoring longer articles (e.g. that contain more words).

To identify words that characterize the differences between the clusters, we used the indicator species analysis brought forward by Legendre and Legendre (1997). This method uses multivariate statistics in order to identify and compare habitats through characteristic species. In this review, we used 15-20 indicator words that characterize the respective clusters ("indval" with 1000 iterations to calculate probabilities; library "labdsv"). We then use a detrended correspondence analysis to locate the indicator words, their distribution in the respective clusters and the interrelations between those clusters.

A combined co-abundancy of words was used to group the scientific articles into different clusters. Articles that use a similar set of words are more likely to belong to the same cluster. To do this we used agglomerative hierarchical clustering (function "ward.D2";library "hclust") This method uses the "minimum variance" criterion in order to aggregate two elements (in this case scientific articles) into one cluster. This method reduces within-group variance and increases dissimilarities between groups and therefore results in relatively even distributions of elements per cluster and a high agglomerative cluster coefficient.

Based on the cluster affiliation of the scientific articles qualitative characteristics were examined in the full text analysis to gain conceptual insights into the specific research mode and problem framing of the respective clusters.