

# **Inclusive innovation:definition framework**

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## **Abstract**

Inclusive innovation has emerged in the last decade as an option for development. In this paper the inclusive innovation has been developed within a theoretical framework analysis that examines the definition of inclusive innovation as such. The systematic review methodology has been used to identify relevant literature for subsequent theoretical analysis. Within this analysis four categories of study have been evaluated: central elements, typology of studies, geographic coverage, and finally, the conclusion threads within the literature. In addition, it has also been identified which authors referred to inclusive innovation as homonymous with other similar currents or concepts. Once the systematic review in the four categories of research has been concluded, certain actions have been suggested in relation to the subsequent work for researchers within this field, since it has been explained the definition still requires some consolidation to establish its patterns of action and work in a medium term.

## **1.1. Introduction**

Erstwhile to the introduction of the term 'inclusive innovation' amid the spectrum of the innovation and the development fields (Heeks, Foster & Nugroho, 2014), there were studies and streams addressing the scientific, technological and communicational strands related to the innovation itself (Freeman & Soete, 1997; Dosi, 1988), and scoping innovation from a

system analysis perspective (Edquist & Hommen, 1999; Lundvall, Johnson, Andersen, & Dalum, 2002); innovation at this flank is undoubtedly broaden and still currently an object of study (Etzkowitz & Leydesdorff, 2000; Binz, Truffer, & Coenen, 2014; Bergek, Hekkert, Jacobsson, Markard, Sandén, & Truffer, 2015). Innovation was generally embedded to progress at those fields (Alzugaray, Mederos & Sutz 2013; Foster & Heeks, 2013a); it has been tackled up at diverse areas, populations, and has been widely studied across literature since the dawn of the industrial revolution (Conceição, Gibson, Heitor, & Sirilli, 2001). Nonetheless, 'inclusive innovation' pretends to disentangle some standpoints of the mainstream understanding and to expand the scope of innovation: proposes a shift unto targeted populations (Prahalad, 2004), to allow specific features to be part of the creation, the process, and diffusion of innovations (Foster & Heeks, 2013b); all without excluding the possible positive spillover effects of social transformation from these type of innovations (Utz & Dahlman, 2007). Moreover, what can be understood as an additional purpose of this nascent area is to broaden what has been sketched out at this wide-ranging field, according to the increased reality of inequality and poverty in the world.

In spite of the advances in relation to the reduction of gaps of poverty worldwide, for 2010 around the 40 % of the world population: approximately 2.6 billion of persons live with less than two American dollars per day (2 \$us./day); as billions of persons continues living with less than one American dollar per day (1 \$us./day); nevertheless, the privation for this population goes beyond the monetary aspect and the lack of assets, they are also deprived of the most essential services: as the health, the education, the social protection, and the access to the infrastructure – especially, roads, water and electricity – (World Bank, 2010). Currently, both the poverty and inequality persist; both became an object of analysis and arduous work of various international organizations. The concern by the United Nations has been reflected in the Millennium Development Goals 'MDGs' –also called MDG 'Millennium Development Goals'– which were replaced by SDG 'Sustainable Development Goals' after the Rio conference 2012 (United Nations Development Programme, 2016); agreeing to these new targets from 2015 countries gather direct efforts at different angles to relieve the needs of the world's poorest groups, to reduce inequalities and combat climate change, all ensuring that *'no one is left behind'* (United Nations, 2016). "Understanding the needs of the poor is the basis of inclusive innovation; some of the greatest needs are captured in the MDGs", and three axes oriented their movement on the agenda until 2030: poverty, inequality and climate change (World Bank, 2010). While addressing inclusive innovation, it explicitly suggests that nobody is excluded; as a

consequence, there is a major challenge towards fulfilling a real inclusion of all marginalized sectors at multiple levels.

Although, inclusion must go beyond financial aspects, thus a comprehensive inclusion of the aforementioned groups does not refer exclusively to those who have been and continue to be affected in their abilities of income generation and access to various basic services; it also refers to underprivileged groups or whose access has been limited, or abilities – those named firstly as capabilities by Sen (1999) – have not been fully developed, enhanced or have not been given. Therefore the spectrum within the inclusion is quite far-reaching: women, sectors, and groups inside society (Foster & Heeks, 2013b) that have been neglected in some way or have not been included to be part of the areas of the so-called development. Furthermore, the inclusive innovation has been also perceived as a possible of tool for improvements at the ecological flank, taking in count the environment as actor or beneficiary (Weber & Rohrer, 2012; Amaro-Rosales & De Gortari, 2016); actually, in this regard, Bryden, Cavicchi, Kvakkestad, Prestvik, and Refsgaard (2015) referred to inclusive innovation as not a subject to be considered only in countries labeled with 'developing', in the same way must be treated in countries with inequalities at different levels. Similarly to the term 'inclusion' which entails complexity and an all-encompassing features consideration; the term development and its treatment – as its convergence over the same objective and the steps to achieve it – could be catalogued as indefinite, in fact it has being raised and discussed by the authors for decades (Lewis, 1954; PN Rosenstein-Rodan, 1961; Prebisch-Singer, 1940-1950).

During the last ten years, there has been an enlargement of authors, institutions and organizations that had focused their attention on the inclusive innovation. However, its definition, extent of plausible action, constraints and measurable opportunities could be still meager. In addition, the repeatedly discrepancy at the scopes and procedures (Bryden, Gezelius, Refsgaard and Sutz, 2017; Ngoc, 2017; Chataway, Hanlin & Kaplinsky, 2016); plus, in most of cases, the assorted indistinctive use of the term within the development field might foster an unclear framework in this field.

As a result, an unblemished understanding of the term is absent; as its implications and what should be considered on future investigation lines. Furthermore, what has been clearly achieved, or the possible gaps throughout literature in an organized review is a shortage at this area. Subsequently, this study proposes to enhance the knowledge of inclusive innovation and aims to nail down the knowledge and advances by schematizing the potential research to carry on at this specific area.

Thereby, the main objective of this study is to portrait the inclusive innovation through the identification of the possibilities' variety of this stream and to identify the progresses and current state within specific literature at this area. This study aims to contribute by means of a theoretical structure, thus to lay an enriched groundwork for any further investigation.

In the pursuit of this objective the study will define the outreach level within inclusive innovation research; it will be disaggregated at four parts:

- First, the level of convergence or discrepancy at definition and methodologies to tackle inclusive innovation: is there a unique consensual definition for it? What are the common elements along the definitions?
- The second part will address the typology of applications of inclusive innovation: are there empirical studies?, is there a commonality among the empirical studies? If there are examples, what is the information they provide? Do we have an ex-ante ex-post type of studies? Can we measure the impact at the community?
- At the third part, the determination of the geographical coverage will be analyzed: are there geographical titling for this field? Is there a region of the world where it has been addressed the most? What are the specific countries of this study?
- While at the fourth, there will be classification and aggrupation for the main working/ conclusive strands of the studies.

In synthesis, inclusive innovation has been analyzed recently and diverse definitions are detailed through the literature in this field. As a consequence, the main objective of this work is to unravel the definition of inclusive innovation among all the stated possible concepts in this field and to set up a framework that sums up a basic guideline for this bourgeoning area. In order to address the study a methodology will be chosen as the methodology to follow up, while the main the research in general will include four flanks detailed in the previous paragraph, those will be carry out hereafter.

## **1.2. Methodology**

In order to schematize the literature under the label of 'inclusive innovation' some methodologies were examined to achieve the main purpose for this study. As a consequence two methodological options were selected to outline this frame; both are generally used at medical

sciences and psychology to confirm the suggested diagnosis of patients, dosage at specific groups or populations, and overall to resume results of those observed populations to enhance the assertiveness of their medical assistance. Both methodologies are considered great tools to summarize the scientific evidence (Sánchez-Meca and Botella, 2010)<sup>1</sup>. Nonetheless, the present study aims to apply the mainstream aspects from either one or both methodologies at social and economic sciences, respecting their core but adapting some features unto this specific case.

The systematic review (SR) and the meta-analysis (MA) are both frequently used at psychology, medicine and sciences wherein the vast literature tend to accumulate final results of treatments, diagnosis, medical perspectives, etc. Formerly, there is an imperative requirement to consolidate the scientific methods applied, and the results of final treatments; all to test either a medicine or the result of a final treatment; consequently, the investigator ends up selecting one or both methodologies pursuing to summarize and properly order all the specifications and results; furthermore, what is intended through these research methodologies is to show '*the state of affairs*' by knowing what has been investigated aiming to systematically collect evidence from studies of the same problem (Sánchez-Meca and Botella, 2010; Morales, 1993).

The prominent author for the MA is Glass (1976), whom has also been denoted as the pioneer of MA across all literature. The meta-analysis stresses the statistical methods used to analyze the results of integrated studies on it (Sánchez-Meca and Botella, 2010; Sánchez-Meca, 2010). Nevertheless, for some authors like Morales (1993) its methodology is fundamentally quantitative, but 'not exclusively' quantitative. Likewise, Morales highlighted the relevance of the concrete and clear rules meant for the research. Moreover, there has been a strong emphasis over the quality of the studies as a required quality to be comparable among them (Sánchez-Meca, 2010). For Sánchez Meca and Botello (2010), the MA study quantifies the size-effect and applies statistical analysis techniques to obtain the essence contained by those. In this sense, the size-effect is a statistical index which is contained by each empirical statistical study and is unaffected by the sample size (Sánchez-Meca, 2010).

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<sup>1</sup> As previously stated the methodologies are generally applied at medical and psychological problems. Nonetheless, the application of both methodologies has extended to other science fields. The authors emphasized that the accumulation of information can block the implementation of Evidence Based Psychology (EBP) approach, therefore SR and MA are the best alternatives to keep off this situation to occur.

At first glimpse, both methodologies could address the inclusive innovation framework. Even so, all through the reviewed literature on 'inclusive innovation' there are diverse type of papers and documents; yet the scarcity of empirical studies is deemed as an unwavering impediment to relate the MA as methodology with an entire scientific sense. Most of the papers containing examples of inclusive innovation studies, still among them there are no specific samples; thus there is an impossibility to calculate means or the size-effect of the studies in the majority of cases. Hence, for this particular case of study the selected methodology will be the systematic review (SR).

Therefore, for Mesenguer Guaita (2012) revision is “the general term for any attempt to summarize the results and conclusions of two or more publications related to a given topic; in addition if it endeavors in the comprehensive identification all over literature, assessing their quality and synthetizing the result is a Systematic Review”. For her, the difference among the SR and the MA is just the latter methodology adds a specific strategy to sum up all the results at a statistical global estimation. Notwithstanding, from all the reviewed definitions of systematic review (SR), the following is the one that will be applied and support the present study:

It is a type of scientific research by which scientific literature on a topic is reviewed based on a formulated question in a clear and objective manner, using systematic and explicit methods to identify, select and critically appraise relevant research to that question and through the application of a systematic protocol for collecting data and information from such research, with the aim of achieving valid and objective conclusions related to the stated topic (Sánchez-Meca, 2010, p. 54).

This methodology converge their stages in general terms with empirical methodologies, i.e. also with the MA. The majority of the detailed steps throughout the reviewed literature are appertained at the MA methodology; however the authors coincided by explaining the SR has the same stages excepting the statistical phase (Sánchez-Meca, 2010; Giménez, 2012; Sánchez-Meca & Botella 2010); thereupon, the stages will be managed indistinctively for the SR hereon excluding the statistical part. The stages are:

- formulation of the problem,
- selection of the studies,
- codification of the studies,
- analysis and interpretation;

- finally, the publication of the study<sup>2</sup>.

While addressing the protocol of the investigation the first stage the problem will be defined based on the main objective of the study; nonetheless, since the methodology underlined that the formulated question has to be very clear and specific –so any investigator could obtain a similar result based on the analogous conditions and approach foundations of the study; as a consequence, the parts of the main quest of investigation based on the SR –which has been selected as the methodology for the study– will be clearly detailed and break up correspondingly henceforth.

### **1.2.1. Formulation of the problem**

The main problem is formulated as following: what are the main relevant features to take in consideration at the inclusive innovation field that could lead the field to a suggested guideline thru a systematic review of relevant literature for a research agenda? Those '*relevant features*' will be categorized according to the following four extents:

- in the first place, the identification of core elements at the definition, then the analysis of the convergence/divergence at elements' management of the definition,
- then, the classification of the type of evidence – if existed – from the studies or examples provided of the field,
- followed by the geographical coverage along the studies;
- finally, which are the main working/ conclusive strands of literature for inclusive?

The main question reveals the identification of the objective of the study. By developing the relevant features throughout the diverse stated four areas the framework for inclusive innovation the objective of the study will be accomplished.

### **1.2.2. Selection of the studies**

In this phase is accurate to point out three aspects of the literature review that will be the filters or named as '*main selective criteria*' for the subsequent selected studies.

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<sup>2</sup> The steps of the methodology are in general terms consensual, however the exact words can vary from one author to other, and there are sub-steps which could be added or not depending the author. The sum-up of the stages was done taking in count the general objective of each stage and considering the statistical part as not feasible for the present study for what was stated above.

The first main selective criteria is the *source for the research*, it will be focused mainly on three main research bases: Scopus (SC), Scholar from Google (SG), and Scientific Resources Web (SRW)<sup>3</sup>; additionally the papers and documents for the study were transversely crossed among the stated sources. The considerations for this part are: at one hand the deepness; and at the other the academic/scientific scope; both reinforce the basis for their selection. Furthermore, for the first consideration, the number of citations on the web was not fully incorporated as a filter among all the sources, because the field is still emerging and the study seeks the comprehensive of the most relevant published literature on the field. However, at the most extended source will become an aspect to be considered. Reinforcing the board of the study, the second consideration implies that only documents matching the inclusivity sense amidst the management, economic, social and/or financial specified fields will be included.

Formerly, the second criteria titled as: *label* targets specific literature entitled with inclusive innovation<sup>4</sup>, those documents are the ones that will be considered for the study; yet there could be literature which implicitly mentions or refers to inclusive innovation in a minor or general manner; though if both words are present in the title of the document, there is an assumption about a major suitability of the document to the main field of the study.

Subsequently, the third aspect for the selection of the studies the documents is defined as *publication*. For this criterion those documents to be considered will be the ones that have been published: either at magazines of economic, social, financial or management sciences; or presented at conferences, even specific chapters of books could be

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<sup>3</sup> The main referred sources for the research are: <https://www.scopus.com/>, <https://scholar.google.es/>; and <https://apps.webofknowledge.com/>. The second source is a vastly universe of information, and for that reason – and highlighting the first consideration that will be stated for this part in the following lines at the main document – the more referenced or more relevant documents are generally at the first pages of the web, as a consequence those appearing in the first eight pages of search will be the ones will be considered at the research for the consecutive filters (just documents not references or citations), the total number of pages of search rises to eighteen. The last source is hosted by the *Ministerio de Economía y Competitividad* from Spain at <https://www.recursoscientificos.fecyt.es/> in Web of Science; in order to access I had to request a registration at the system as a PhD student. Additionally to the main three sources, some of the articles and documents were complemented with some authorized documents for scholars at Research Gate on <https://www.researchgate.net/>. Thus, all those authorized from the additional source and the previously three main sources mentioned above will be included as well. Duplicated studies in the content despite the different title assignments are not going to be considered.

<sup>4</sup> A label at this context implies the presence of 'inclusive innovation' at the title of the document. The specific approach on inclusive innovation will consider that if title refers to the studied field, then it will extendedly tackle inclusive innovation, though this consideration will be confirmed.

included<sup>5</sup>. Although authors like Morales (1993), Mesenguer Guaita (2012) and Sánchez-Meca (2010) suggested to include documents that had not been published across studies to avoid the publication bias, which sometimes the bias is present for those studies where the findings may be in contrast to what generally is found at the transversely results of the studies at medical or psychological sciences. Nonetheless, in this specific case of study the imperative requirement is to have a quite comprehensive approach of literature, but since the publication at a scientific magazine or the participation at a conference or seminar implies a strong filter that the author has passed through, meanwhile a previous revision of the work must be done. Correspondingly, this field can be considered as a nascent field, the filter *publication* is required in order to guarantee in some extent the quality of the documents that will be reviewed hereon. The previous condition undoubtedly provides a quality standard amid the documents; for that reason, the unpublished studies despite fulfilling the previous criteria won't be included for this SR.

To synthesize, the three main selective criteria were established, they were baptized as: source of research, label and publication. Each scope within the three criteria was meticulously justified establishing the three criteria for the selection of the studies that will guide the next stage of the systematic review process.

### **1.2.3. Codification of the studies**

In the previous section, the three selection criteria were described to outline the next stage within the systematic review. The wide diverse documents coming from the stated sources were analyzed according to the three selective criteria, wherein the ones that fulfilled all the conditions have remained for the analysis. In the next table accounted the number of documents at the different stages of selection was portrayed.

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<sup>5</sup> All the previous criteria selection statements are valid. The number of papers published at the most relevant magazines of the field is still incipient compared to other fields, thus that was the main reasons to join all the papers and to not disaggregate the study in two: the one published at these magazines and the others published at other magazines (still relevant nor not the top most relevant). The documents cannot just be presentations on Power Point or similar formats. Nonetheless, the publications included thus detailed and analyzed in the basic articles will not be repeated. Even so, the chosen documents will be the ones which have complied with all the previous stated requirements and filters.

**Table 1: Structure of the selective criteria**

<i>Identification (1st criteria)</i>		<i>Elegibility (2nd and 3rd criteria)</i>		
N° of documents through database searching*		N° of documents with the 2nd eligibility criteria	N° of documents with the 3rd eligibility criteria	N° of documents for the SR**
SC	262	18	16	
SG	1940	210***	31	41
SRW	31	12	11	

\* This was a general search with the words inclusive and innovation at any part of any document, even separated then not as the concept of inclusive innovation itself

\*\* Those on the additional source were added directly to the total (4)

\*\*\* Sometimes it displayed the "inclusive innovation" as separed words inside the title implying another concept

Own elaboration based on Moher D., Liberati A., Tetzlaff J., & Altman D.G. (2009)

The number of studies or documents which compiled all the three established criteria for the selection amounts to forty one documents between conference papers, book chapters, and/or articles (see Appendix 1). Each document was correlatively numerated, so each number will refer to the document at the following parts of analysis, especially on the tables and figures.

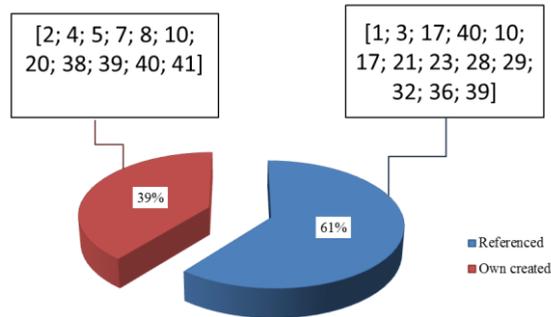
#### **1.2.4. Analysis and interpretation**

The first part of the analysis and interpretation will engage the core elements definitions and will test out if there is a convergence amid the definitions. The second part is going to address the classification and typology of the studies. Then, the third will check out the geographical coverage along the documents. Finally, the main conclusive strands will be developed.

##### *1.2.4.1. Core elements of the definition*

To start, among the 41 documents around twenty eight definitions of inclusive innovation were identified. These spotted definitions all over the literature were the ones concerning the analysis of what is inclusive innovation, and what are the key words or nuances involved for its conceptualization for each author.

Therefore, in this scrutiny, the 39% has created or provided a new definition for inclusive innovation, contrasted to the 61% which referred to another author to define it.



Source: Own elaboration

**Figure 1: Definitions based on the source of creation**

Along some documents – like Foster & Heeks (2013b), Sengupta (2016); Foster & Heeks (2014); Kimmitt & Munoz (2015), Foster & Heeks (2016); Amaro-Rosales & De Gortari (2016), also Ngoc C. T. (2017) – two or three definitions of inclusive innovation per document were identified.

Amid the 61% of referred authors there have been found trends of most cited or preferred referrals. In this sense, there are two definitions that stick out the rest, those definitions appeared in the paper of: George, McGahan, and Prablu (2012) and Foster and Heeks (2013b), respectively.

Nearly 15% of the authors' referred definitions have entitled the definition from George, McGahan, and Prablu (2012). These 15% is comprised of Ab. Aziz, (2016), Tello-Rozas (2016), Kimmitt & Munoz (2015), and Amaro-Rosales & De Gortari (2016). On the other side, about the 14% of the authors' referred definitions have named Foster and Heeks (2013b). The authors selecting for this definition were: Heeks, Foster, & Nugroho (2014), Foster & Heeks (2013a), and Sengupta (2016).

**Table 2 Distribution of referred authors**

<b>Codified documents and their referenced authors to define inclusive innovation</b>
1; 3; 17 (2); 40 (2)* George G., Mc Gahan, and Prablu (1)
10 (2) IDRC (2011) Innovation for Inclusive Development. Ottawa: IDRC.
10 (3) Codagnone, 2009
17 George G., Mc Gahan, and Prablu (2)*
21 Heeks et al 2013
23 Cozzens & Sutz 2012
28 (1) Altenburg 2009; Cozzens and Kaplinsky 2009; Foster and Heeks 2013a
28 (2) Heeks et al. 2013
29 Lorentzen 2011; Scerri and Lastres 2013; Scerri, Couto, and Maharajh 2014
32 (1) Piketty 2014 ; Stiglitz 2012 ; Wilkinson et al. 2011
32 (2) Cozzens and Sutz 2012
32 (3) Gault and Zhang 2010 ; STEPS Centre 2010
34 Heeks, Amalia, Kintu, & Shah, 2013; Sonne 2012
36 (1) CITED: Mohen and Stare, 2013:4
36 (2) Global Knowledge pool for Global Good
36 (3) Foster and Heeks, 2013:335
39 Mashelkar, 2011

\* (2) at the column of encrypted documents implies the second definition of the document

\*\* (2) in the column of the referred authors implies another concept or approach of the concept proposed by the same author (s)

Source: Own elaboration based on the coded documents

In the previous table the detailed of the authors was elaborated. Nonetheless, there is not a third definition that sticks out from the others, nor a fourth; thus, the rest of preferred definitions were distributed among diverse authors.

Above and beyond, all the definitions were also disaggregated in key words and key areas; those are embodied in the next table.

**Table 3: Core areas within the definitions crossed with coded documents**

Codified document (s)	Feature of what	Created or generated from	Process	What	For (verb)	In	To (Who)	Specific place/context	Comparison to some factor	Specific activity of the Who	Specific group within the Who
1; 3; 17 (2); 40 (2)*			development and implementation	new ideas	enhancing	social, economic and wellbeing	disfranchised				
2					widening		very small groups of innovating firms	emerging and developing countries			
4				critical factor	successful and sustainable based solutions						
5				innovation				relevant for needs and contexts	rather than simply cheap version		
7			create new services	potential	empower enable		poor			participation	
8				innovation	target	needs	specifically of low income populations				
10 (1)				means	developed	new goods and services	lowest incomes				women, youth, disabled at the minorities
10 (2); 21				inclusion		within some aspect of innovation	marginalized groups				
10 (3)							mostly the lowest incomes				
17 (1)	to failed top-down policy interventions		envisioned economic development	entrepreneurial response		in resource limited settings					
20			distinction between process and product innovation	holistic conception of innovation cycle	promote	less excluding patterns of growth	roles played by the poor				
23	appropriate to development needs of the innovation	involvement of poor community members in desing and develop	development, production and delivery	2 aspects: 1) process and output 2) innovation		goods and services	poor				

Codified document (s)	Feature of what	Created or generated from	Process	What	For (verb)	In	To (Who)	Specific place/context	Comparison to some factor	Specific activity of the Who	Specific group within the Who
28 (1)				innovation	provides	benefits	low income	developing countries			
28 (2)				positive impact			livelihoods of poor and member of low income communities				
29				applies knowledge		advance	economic development and social purposes				
32 (1)				interest on inequality not only as an ethical goal			economic and social cohesion	of nations			
32 (2)	connection to large oppennes of informal work	locally or indogeneously		created innovations	build						
32 (3)	move beyond R+D and technology produced focused			more AT and equitable innovation policy	push		developing countries				
34				set of activities	foster	development	marginalized communities				
36 (1)		In the developing countries		developed	suffering	satisfaction of basic needs and benefiting from technology ad					
36 (2)			knowledge creation, acquisition, absorption, distribution efforts	targeted to	to meet the needs		low income or BoP				
36 (3)				conceives development		in terms of active inclusion	excluded from mainstream development				
38	by improving their productivity				creates	accessible products	by all classes				
39 (1)		activists and communities		ways to	develop	solutions	poor and disadvantaged				
39 (2)				more products and services from less resources			for more people				
40	besides to improve productivity			mechanism	contributes to improve	life conditions in economical and social level even environmental and empowerment	for communities				
41				new ways	improving	lives	most needy				

Source: Own elaboration based on the coded documents

Henceforth, the set of definitions of inclusive innovation –listed from referenced and own elaborated sources– will be managed grounded in the previous table, all directly linked to the authors’ coded document. There are different identified areas and implicit fields of analysis and concerns for that can trickle down from it.

In this section, consequently to the objective of the study, the core elements grounded on key elements from the inclusive innovation definition are the ones that will be addressed.

The first core element is the *targeted group* of inclusive innovation. Those authors who specified it don’t fully converge on the approach of the inclusive innovation; in some cases the groups to be benefited from inclusive innovation tend to be directly related with poor –either accompanied by complements such as populations, or by another terms as excluded and disadvantaged– or low income, also needy. Another set of individuals refers to the disfranchised members of society. Similarly, the Bottom of the Pyramid (BoP) is another group, as the ones related and inequality affected. Those comprehended amid women, youth, disabled, and ethnic minorities have been specified as a separated group as well. The very small groups of innovating firms brings out a group related specifically with innovation, however the inclusivity factor of the definition has been left out.

**Table 4: Involved beneficiaries/ targeted groups according to definitions**

<b>Coded document</b>	<b>Identified targeted groups along all definitions</b>
1; 3; 17 (2); 40 (2)*	Disfranchised members of society
	2 Very small groups of innovating firms
7; 20**; 28 (2); 23	Poor
	36 (1) Poor and excluded
8; 10 (1); 28 (2)	Low income populations
	28 (1) Low income groups of developing countries
10 (2); 21; 34	Marginalised groups
10 (3); 21***; 28 (1)	Women, youth, the disabled, and ethnic minorities
	Inequality affected
	36 (2) BoP
	36 (3) Excluded
	38 All classes
	39 (1) Poor and disadvantaged
	39 (2) More people
4; 5; 29; 32 (2)	Not specified
	40 Communities
	41 Needy

\* (2) at the column of encrypted documents implies the second definition of the document

\*\*The author emphasized is not just that group

\*\*\* Reinforcing the identity issue in the concept

Source: Own elaboration based on the coded documents

The second nuance relevant to explore is the author's perceived field for the *inclusivity or its purpose area*, and how it was portrayed among the definitions in the studied literature<sup>6</sup>. The economic and social scope is predominant among the others. Notwithstanding, for one author there was a specification: for developing countries. An additional purpose of the inclusivity has been specified, it was the development and the benefits from the mainstream growth. Complementary, the gender, ethnicity, or disabilities reflect other sections for the inclusivity to take place. All the possible levels of inclusion are disaggregated in the next table.

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<sup>6</sup> The definition of inclusive innovation must have been provided in the document so the sense of inclusivity can be related in some point with the purpose of the identification of inclusive innovation features' in its definition.

**Table 5: Field/level or purpose of inclusion**

Coded document	Specific field (or purpose) of inclusion
1; 3; 17; 29; 40	Social and economical
2	Internet access
4	Sustainable sciences based solutions
5	Not cheap versions
8; 23	Economic
28 (1)	Economic from a develop country
28 (2); 34	Pursuing their development
10 (3); 21	Gender
10 (3); 21	Ethnicity
10 (3); 21	Disabilities
32 (3)	Economic and social cohesion of nations (purpose)
36 (2)	Needs (purpose)
36 (3)	Conceives inclusion in terms of those excluded from the mainstream of development
38	Accessibility
39	Benefits of mainstream growth

Source: Own elaboration based on the coded documents

Consequently, the third key element connoted in the definitions is the *process*: whether there is a process for the inclusive innovation and what type of process it involves or what aspect should be included. In some cases all of these were specified, for other authors there weren't or just some qualities of the process were highlighted. At one of the definitions, there is a characteristic specifying fewer resources, which may trigger a frugal use of resources connotation in inclusive innovation. The involvement level of the actors throughout the process reflects another relevant complement to the process. On the other hand, a sequel specifying activities such as: knowledge creation, acquisition, absorption and distribution efforts are a fundamental; whereas for other author, the split up in a movement that goes beyond conventional R&D is also explicit. The holistic approach implies a whole among stakeholders and processes; however, it doesn't extend or point out specifically in the definition what does the holistic line covers. It is shown below the table where all the previously listed aspects of the process are detailed by author.

**Table 6: Process, aspects to consider in the process of inclusive innovation**

Coded document	Process or aspect/characteristic within the process
1; 3; 17; 29; 40	Development and implementation of new ideas
17	The involvement of the entrepreneurial side
20	Holistic approach
"Ladder of innovation": 1	inclusion of intention
2	inclusion of consumption
3	inclusion of impact
4	inclusion of process
5	inclusion of structure
6	post-structural inclusion
34	Activities
23	Inclusivity of the process (involvement of poor community members in design and development). This as one of the aspects of Inclusive Innovation.
36	Knowledge creation, acquisition, absorption and distribution efforts
39	From less resources
32	That moves beyond narrow R&D and technology product focused definitions
4; 5; 8; 10; 28 (1); 28 (2); 32 (1)	Not identified

Source: Own elaboration based on the coded documents

Ever since the core elements itemized above: *targeted group*, *inclusivity or its purpose area*, and *process* are the most important elements of the definition, the fulfillment of its parts' disaggregation has been achieved.

#### 1.2.4.2. Evidence and typology from the studies

Subsequently, the classification and typology of the studies will be set forth. A classification was elaborated built on the level of accuracy from each document towards inclusive innovation and the aim of the study. Therefore, this taxonomy aims to classify the documents on the first stage in order to cluster them according to behave the inclusive innovation area taking in count the field itself (not just the utter sense to inclusion of something), and to attain the majority of assertive fulfillments to the study's main objective.

As a result, four categories of division (I, II, III, and IV) were established for this section to delimitate the coded documents as presented in the next Table 7. Those coded document whose target was merely inclusive innovation – without extensively inquiring at other fields or concepts as poverty, inequality or similar concepts amidst the innovation field, too – and explored the central concept while they may also expose some examples on the field, those were included on the category I. The amount of involvement on inclusive innovation reflected also at the conclusions'

segment of the documents entails the placement of the documents in the categories II and III. Contrariwise, the documents in the category IV reflect the lack of conclusions in the document related to inclusive innovation, in addition of not complying with one or more of the classification' requirements.

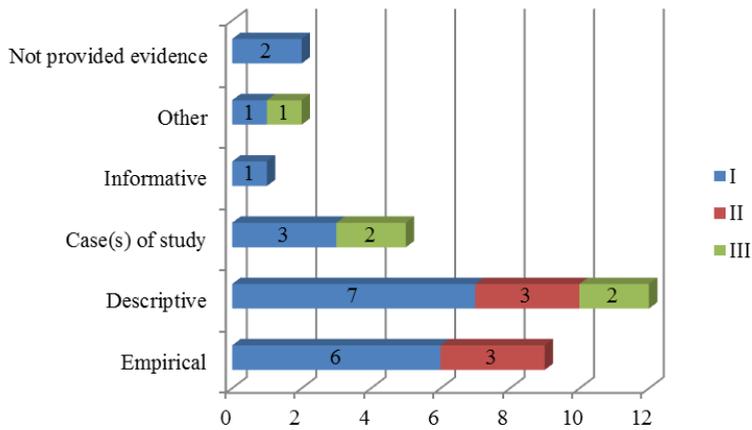
As a consequence, the category IV will be detached of the analysis for the next section; some remarks of these coded documents appear in the Appendix 2 instead.

**Table 7. Evidence/text provided connected to inclusive innovation**

Evidence provided related directly to inclusive innovation (I)	Evidence provided related in some extent to inclusive innovation (II)	Evidence provided not related to inclusive innovation but aiming it or trying to tackle it with other concepts 'approach (III)	Evidence provided not related to inclusive innovation per se (just the sense of inclusiveness somehow) (IV)
[1; 2; 3; 4; 5; 6; 10; 17; 18; 20; 21; 22; 23; 28; 29; 32; 34; 35; 36; 39; 40; 41]	[7; 8; 9; 36; 41]	[12; 15; 16; 25; 26]	[6; 11; 13; 14; 20; 27; 29; 33; 34; 40]

Source: Own elaboration based on coded documents

Consequently, an additional categorization of the studies to also typify them according to their main structure was elaborated. In the next chart the predominant structure among documents of inclusive innovation studies is descriptive; this is followed by an empirical type of documents, and then, in a minor proportion the group of case of studies.



Source: Own elaboration based on coded documents

**Chart 1. Type of document associated to the evidence/text type**

Nonetheless, is accurate to mention that there are documents whose type, despite an appertaining to a specific set, did not imply that the document belongs entirely to that category. Thereby, the predominant type in the structure of the coded document is the one that was considered.

Additionally, there are documents wherein the provided examples despite being named by the authors as inclusive innovation's examples are still hard to confirm whether they fully belong to this field or not. Likewise, there are authors whom managed inclusive innovation and other terms as equivalents; some others as complements.

Similarly, all the terms stated along the coded documents in which they have been compared, equated, or even mentioned to other related concepts are detailed in the next Table 8.

**Table 8 Concepts compared/mentioned/complemented with inclusive innovation**

Coded document	Other related concepts for the author(s)
1; 7; 8; 18 (I); 35 BoP	<ul style="list-style-type: none"> <li>18 Further innovation type to reduce costs</li> <li>3 Social innovations and its empowerment</li> <li>3 Inclusive social innovation</li> </ul>
9; 36; 38	Frugal innovation
36	Pro poor
9	Inclusive growth
9	Social inclusion
16	Socially integrative innovation policy proposition (his paper targets this)
3	Inclusive social innovation
	Frugal innovation
9	Inclusive growth
17	Capabilities approach to inclusive innovation (social justice)
9; 18 (II); 22; 33	Grassroots innovation
33	Rural innovation
19	Social responsibility in strategy and operations in organizations
	3 approaches to inclusive innovation: " <i>Pro-poor</i> early stage
18	technology development, <i>grassroots</i> entrepreneurs, and to absorb existing knowledge"
33	Indigenous innovation

(I) and (II) are the approaches of the coded document

\* This paper targeted the socially integrative innovation policy

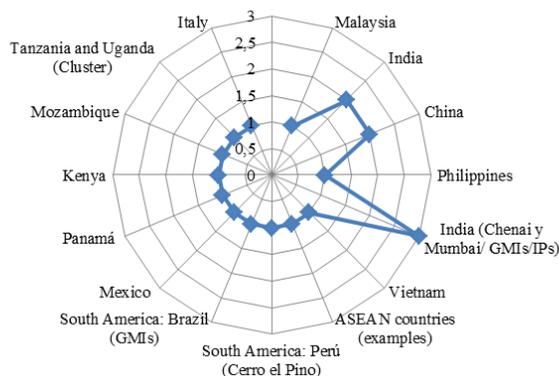
Source: Own elaboration based on the coded documents

#### 1.2.4.3. Geographical distribution

In relation to the geographical coverage, there is a continent wherein the inclusive innovation has been more encompassed: Asia, which comprised studies and/or examples over countries such as India, China, Vietnam, ASEAN countries (these were merely stated examples), Malaysia, and Philippines. The Asiatic continent is seconded by Africa covering countries as Kenya, Mozambique and Uganda. The third place is occupied by Latin American countries as Peru, Brazil, Mexico and Panama. Only Italy has been studied as reference in Europe for this field.

India clearly has taken the lead at the inclusive innovation studies with concrete (Chennai, Mumbai and Grassroots innovation movements (GIMs)/Innovation Platforms also named as IPs) and general examples.

This country is followed by China, though in a considerably slight expanse. The appearance of the rest of the listed countries is equally scattered.



Source: Own elaboration based on the coded documents

**Chart 2. Geographical coverage of inclusive innovation coded studies**

#### 1.2.4.4. Main working/conclusive strands

There are several scopes among the working lines and conclusive sections of the coded documents. Notwithstanding, the section of conclusions is where the conclusive strands mostly will be obtained. Clearly, the amount of possible conclusions themselves could exceed the length of this study. Consequently, the most relevant parts towards the main objectives of the study were the ones that guided the classification of the most associated conclusions.

Consequently, what are the main working lines and conclusive trends at the inclusive innovation field? The *policy making* occupies an important role: there is little work of policies that support inclusive innovation (23). In the development of their work three stages took place “for an analytical approach, at the second one the components of inclusive innovation were portrayed as sector specific, sector significant and sector foundational”. The policy makers should also “be aware of difficulties and resistance of this specific type of models” in inclusive innovation (22).

Following the policy area, the authors highlighted the importance of policies for faster targeting the inclusivity factor (32). In the same line,

“the complexity of alignment and implementation” was exposed as well (23). For (8) *government policies* shall encourage top-down policies for society and private sector towards the achievement of inclusive innovation; whereas for (29) governments should “move towards R&D activities and social policy goals”.

One of the main aspects is the indistinctively *concept management* among documents. Among the approaches to promote inclusive innovation the “pro poor early-stage technology development (ESTD), and the grassroots entrepreneurs” as diffusors emerge as two possible approaches (18). For (32), the grassroots innovations are useful to “potentially undertake small-scale innovations and adaptations based on their knowledge of marginal groups”, thus they are very useful for inclusive innovations which look to “marginalized groups”. So, this type of innovation can become a nurturing source for inclusive innovations. Conversely, for (33) rural development is the one that should drive inclusive innovation; while National Innovation Systems (NIS) for (33) may represent “the path for rural ideas to markets offering a policy perspective to increase collaboration”. Complementing this notion, (28) refers to BoP, as emphasizing how literature prizes a top-down innovation when there is a need to encompass the particular nature for low income consumers. Reinforcing a top down criticism (36) highlighted that marginalized and civil society should be able to “speak for themselves”.

The *holistic approach* stated by (20) certainly may comprehend as a key factor the relation of the *stakeholders* (1), and *actors* (36) for the inclusive innovation. The latter element involved an operationalization with IPs and highlighted their dependence (24). Thus, a great coordination among actors represents the basic to provide “food, health, education and dignity” according to (36).

In addition, the *difference from mainstream innovation* was pointed out by (16) and (23), the impact for *community* as a whole (3), even the requirement of the community’s involvement for its success (40).

Related to the how inclusive innovation is seen, its *vision* of was analyzed as a “new type of innovation to face inequality” (18), or as the “recouple of growth and development” (20) leads by some means to the quest of its nature, when according to (24) “many inclusive innovations are not necessarily new, but they are new in context”.

Complementarily, the *models and levels of inclusive innovation* framing their possible outreach were spotted by (21), the authors have included the grassroots innovation, the frugal innovation, cluster innovation, and innovation platforms as *models*; while proposing a ladder of 6 levels for

inclusive innovation. Similarly, (24) concerned the IPs as a “promising model for inclusive innovation” becoming a way to operationalize it; whereas (22) excelled the lessons from the “encounters between GIMs and STI institutions for the inclusive innovation models”. Whereas, for (21) cluster innovation represented one of the proposed models of inclusive innovation, for (25) clusters are “useful to fill gaps in emerging innovations systems, towards a more inclusive process”. This author underlined his peers’ contributions about inclusive innovation strategies and how important they are, while “those approaches resemble the empirical findings in the cluster program”. Moreover, (22) outlined the frames (ingenuity/ empowerment/ transformation) and modes of engagement (insertion/mobilization), and suggested Grassroots Innovation Movements (GIMs) as a source to propose models and ideas for inclusive innovation. Contrariwise, (39) conceived concepts as frugal innovation, grassroots innovation or BoP innovations are “multiple facets depending the context and specific conditions of various economies and societies”. Even more, the author targeted inclusive development as the aim of inclusive innovation, and referred to creation implying all should be actors.

The *process of inclusive innovation* involves different flanks: (22) remarked a process based approach as an imperative method to advance more compared to the outcome-based. Part of the process could start with the consideration of the drivers, those are tackled by (34) in as: “formal institutions, organizational context, commercial and non-commercial market forces in which they participate; and informal institutions like norms or beliefs”.

About *measurement of inclusive innovation* (35) presented a regional inclusive innovation capacity indicator system, it has contemplated “innovation input, innovation actors and innovation output”. The author stressed the factors that could lead to the “long-term lock of inclusive innovation capacity gap among regions”.

An element identified by (29) that can be the *outlier factor* was the “*informal sector* and how innovation works there since it represents the main source of income for a large proportion of the population”.

### 1.3. Main findings and discussion

Contextualizing inclusive innovation due the rich and quite diverse types of literature contributions and positions was challenging<sup>7</sup>. To start, the systematic review unveiled a 24% part of literature contained in the search titled with “inclusive innovation” as not pertinent to the field itself, and more oriented to an inclusive study within some factor, just focusing on the inclusiveness at some point. One inquiry could arise from this result: does the “inclusive innovation” definition is a strong concept yet since almost a quarter of the studied documents do not apply the total sense of this field? Even if there is a shift in the research outlines such as including words of “inclusive innovation” in the abstract or the entire document, will the result differ considerably? Inclusiveness by itself has an important bearing across social and developmental studies; nonetheless, what should be pursued by scholars in this area is the immediate and direct consolidation of the term to any future use.

Since the selected methodology for this study was a SR, a qualitative type of study was elaborated due the absence of the substantial quantity and significant statistical studies on the field. As a qualitative category of study, there are phases that can differ slightly from another author who may perform the same study; though, the procedure to attain the main objective and all the encompassing steps were detailed and carefully reviewed. The research resources and the selective process can differ grounded on the principal aims of the author.

Through the coded documents’ typology a vast 51% corresponds to descriptive and empirical structures (the latter account nearly 29%). The major type is descriptive, in which some theories on development are mentioned jointly to inclusive innovation. Notwithstanding, amid the empirical studies spectrum it may be difficult to confirm whether are exclusively inclusive innovation type of empirical models, despite the assignment of this title by the authors. The different perspectives related to the models, to the similarity of terms and the ease of replacement in term management makes this part hard to confirm.

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<sup>7</sup> In order to sum up the main findings hereafter the methodology there are two considerations to mention: first, the selected studies to tackle were based on a previous consideration made by the author; thus, some other studies could be included based on the considerations and targets the author would seek with the some other type of study. The second consideration to mention prior of the discussion is that the qualification of each item and its explanation were exposed; however it may differ according to the value the author might give to each aspect to be valued; therefore it could slightly vary as well.

The management of terms invite to a further deeper investigation based on the understanding, limits and fully comprehension of each one's boundaries and scopes of the concepts involved and related with inclusive innovation, and of the latter itself. Undoubtedly, inclusive innovation has ties with development and innovation (Heeks, Foster & Nugroho, 2014), but is not the field and its disciplinary foundations already covered by innovation for inclusive growth, for example? In this matter, does growth need to be linked to inclusiveness and innovation so the spread of the benefits for this growth can outreach its current sprawl? International organizations such as OCED enabled reports of inclusive innovation for growth as the major topic.

The discrepancy among authors was evident, as some concepts may overlap with others. As previously analyzed, terms as grassroots innovation, frugal innovation, rural innovation, or cluster innovation are sometimes allied to inclusive innovation in different ways: as tools, as models, as complements, as equals depending the context (Sutz & Tomasini, 2013; Ngoc C.T., 2017; Heeks, Foster & Nugroho, 2014; Mathew E.G., 2010). A wide-ranging exploration of the relation among all these concepts with inclusive innovation may well enrich enormously the theoretical framework. Effectively, a complete establishment of actors, roles, and required levels of involvements into the innovation process amidst the members is also crucial to avoid the fuzziness on inclusive innovation's concept. Even the definition of innovation in this field may trigger some other aspects to take in count in order to properly classify when an inclusive innovation can be considered and not just named as such.

Above and beyond this, the most significant nuances of the definition declare drifts over how inclusive innovation is conceptualized by authors. These distinctions can be classified in five groups according to their strands: innovation, inclusion, entrepreneurial/processes, less tangible factors, verb related activity and others. Around 21.4% defined inclusive innovation focusing on innovation; the character of the mainstream innovation remained strong as the guide for conceptualizing inclusive innovation. The complementary view of the preceding concept is the one beginning with inclusion or inequality overtone, both accounted 12.5%. Similarly, the relation with the entrepreneurial side and processes implied a 16%. The view of inclusive innovation as a less tangible aspect such as a factor, a potential or an impact implied a 14.3%. The verb related activity 10.7%; while roughly 25% was distributed amid others.

To reinforce the final results regarding the source of the definitions is accurate to state that around the 39% has own elaborated a definition for inclusive innovation, contrasted to the 61% of the referred authors.

Within the referred authors two definitions are the most cited definitions along the studied coded literature, those definitions were from George G., McGahan, and Prablu (2012) and Foster and Heeks (2013b). Similarly, the prevailing sense of inclusivity or purposed area in the literature mostly focused on the economic and social aspect; yet to spread the benefits from mainstream growth has been named as well. If this is the case, is not the growth-inclusiveness-innovation contemplated already at the innovation for inclusive growth? Once again this concept seemed embodied by the other.

In the same line of analysis within the definition, the sense of the process delimitation and possible edges of evaluation exposed the mindset of authors in this topic. Still, more examples and the convergence among procedures of evaluation are imminently required, since the stages of a process can become the basis for a possible unified measurement. Hence, an index aiming to calculate the regional inclusive innovation capacity was built up founded on: innovation input, the innovation output and the innovation actors (Yu, Gu, Zhao & Hu, 2016) – the lack of more studies and its measurement indirectly demonstrating the scarcity work in this field.

The continent leading the inclusive innovation was unarguably Asia, with India as the spearhead; so far China was at second place. Coincidentally, both countries occupied the first and third place (China and India respectively) at the published a list of the forecasted-top 32 economies which may become the most powerful by 2030 (World Economic Forum, 2017). The fact these countries endeavors' are taking the lead on the inclusive innovation field may have some sort of correlation for this event to occur? Other six countries which had appeared at the geographical coverage studies on inclusive innovation also made this list – Brazil, Mexico, Italy, Malaysia, Philippines and Vietnam – as a result, almost a quarter of this list have had an inclusive innovation geographical study coverage. The inquiry over a possible relation is broad: the steadily distributed benefits from growth of a country will certainly have this type of impact at a long term analysis besides the impact of the mainstream growth? Indexes as the Social Progress Index can reflect through to their dimensions some aspects of this inclusivity; nevertheless, the inclusive innovation per se as a factor is not included.

Accordingly, the wide-diverse flanks of the conclusive strands enable a complete outlook of the highlighted areas from the authors: policy making as a core aspect of innovation, besides the concept management unveiled a clarification of the concepts, each author's definition inclusive innovation still evenly undefined. Along the literature the perspectives of inclusive innovation differed on the context and the goal of each study.

Furthermore, the gap of years from when the first time the World Bank used the term inclusive innovation (Chataway et al., 2016) contrasted to one of the two most cited references founded all through coded analyzed literature is 5 years. Consequently, this may have involved a striving process of definition's construction that even currently seems to continue. Does the inclusive innovation completely rely to the informal sector or to the baptized as developing countries? The complexity of its full contextualization might overtake the contemporary outreach of this field.

## **1.4. Conclusions**

A strong uneasiness over the inclusivity and how it may intertwine with innovation spurred the research over the inclusive innovation field. Albeit there have been strides along literature in relation to the concept, its wide-diverse approach, the possible stages of a process, the level of actors' involvement and some guidelines for future research due identified gaps, yet there are some missed pinpoints at this emerging field. This study aimed to fill a void steering the inclusive innovation's theoretical area, focusing on the definition and how it has been tackled across literature. Thereupon, the significant features of the definition were clustered in four parts: core elements, classification of the evidence, geographical coverage and the major conclusive strands. Amid the core elements the economic and social are the prevailing aspects where inclusive innovation's action is heavily interlinked; whereas, there were studies about the disfranchised members of society and the suggested environmental aspect may becoming an active beneficiary; thereby while encompassing diverse purposed areas and potential beneficiaries broadly triggers a new scope for inclusive innovation to rearrange its primary scopes.

Notwithstanding, the sought pace to achieve this process also demands the fore-front for indexes' elaboration to attain a tangible measure the advances on inclusive innovation; more sheer empirical studies which may create a common staged analysis, so their achievements can be measured and compared. Hitherto the upshots of the concept management and related definitions to inclusive innovation differed according to contexts and perspectives; however, since they tend to overlap is necessary to drawn-up a schema taking in count their similarities, differences and commonalities. Undoubtedly, the lagging at the consolidation of inclusive innovation definition and framework hinders to expand and truly explore its potential.

Accordingly, at the geographical coverage studies of inclusive innovation Asia is ahead in the inclusive innovation studies; especially India, which has enhanced different institutions to encourage the participation of different stakeholders. Although, there are other countries which have address the inclusive innovation in a minor quantity. Yet in some documents was difficult to confirm whether the provided examples referred exclusively to this field or not. Consequently, the main strands throughout literature focused on the lack of consistent policies and the relevance of policy making in this area. The key role governments have to ensure inclusive innovation and the holistic approach were also consistently highlighted. Additionally, the proposed models and the IPs portrayed different options to operationalize inclusive innovation. On the other hand, the visions over the process for inclusive innovation still scattered.

Finally, the broad threshold for the inclusive innovation nuances' was commensurate with the main objective of this study; nonetheless, the increment of the number of studies arguably differs to the final proportions from the different segments.

## 1.5. Appendix

### Appendix 1

#### List of coded documents

#	AUTHORS	TITLE
1	Aziz K.	Convergence and inclusive innovation in the communications sector
2	Paunov C. & Rollo V.	Has the internet fostered inclusive innovation in the developing world?
3	Tello-Rozas S.	Inclusive innovations through social and solidarity economy initiatives: a process analysis of a Peruvian Case Study
4	Muzyka D.	The power of inclusive innovation: critical success factors for science-based solutions
5	Mitchell, W. & McGahan, A.M.	Chapter: inclusive innovation from the book: Innovating for the Global South: towards an Inclusive Innovation Agenda
6	Kuramoto J.	Inclusive innovation against all odds: the case of Peru
7	Yadav V.	Unique identification project for 1.2 billion people in India: can it fill institutional voids and enable inclusive innovation?
8	Rui J.	Institution level, policy option and inclusive innovation in China
9	Peñalba L. & Elazegui D.	Opportunities and challenges in socially inclusive innovation: the case of genetically modified corn in the Philippines

10	Foster C. & Heeks R.	Conceptualizing inclusive innovation: modifying systems of innovation frameworks to understand diffusion of new technology to low-income consumers
11	Aoun Chadi, Vatanasakdakul Savanid	Social Media in the workplace: key drivers for inclusive innovation
12	Sonne Lina	Innovative initiatives supporting inclusive innovation in India: social business incubation and micro venture capital
13	Hegger, Spaargaren, van Vliet, Frijns	Consumer-inclusive innovation strategies for the Dutch water supply sector: opportunities for more sustainable products and services
14	Heiskanen, Hyysalo, Tanja, Repo	Constructing innovative users and user-inclusive innovation communities
15	Altenburg Tilman	Building inclusive innovation systems in developing countries - why it is necessary to rethink the policy agenda
16	Guth Michael	Innovation, social inclusion and coherent regional development: a new diamond for a socially inclusive innovation policy in regions
17	Jonathan Kimmitt & Pablo Munoz	Re-thinking the ethics of inclusive innovation
18	Anuja Utz and Carl Dahlman	Promoting inclusive innovation
19	Nijhof, Fisscher, Looise	Inclusive innovation: a research project on the inclusion of social responsibility
20	Chataway, Hanlin &	Inclusive innovation: an architecture for

	Kaplinsky	policy development
21	Heeks, Foster & Nugroho	New Models of inclusive innovation for development
22	Fressoli, Arond, Abrol, Smith, Ely & Dias	When grassroots innovation movements encounter mainstream institutions: implications for models of inclusive innovation
23	Christopher Foster & Richard Heeks	Analyzing policy for inclusive innovation: the mobile sector and base of the pyramid markets in Kenya
24	Swaans, Boogaard, Bendapudi, Taye, Hendrick & Klerk	Operationalizing inclusive innovation: lessons from innovation platforms and livestock value chains in India and Mozambique
25	Trojer et al	Inclusive innovation processes – experiences from Uganda and Tanzania
26	Johansson et al	Making a case for gender-inclusive innovation through the concept of creative imitation
27	Ola David & Oyelaran-Oyeyinka	Can FDI foster inclusive innovation and technology development in Africa?
28	Christopher Foster and Richard Heeks	Nurturing user-producer interaction: inclusive innovation flows in a low-income mobile phone market
29	Phiri et al	Inclusive innovation and inequality in South Africa: a case for transformative social policy
30	Clifford et al	Engineering, global health, and inclusive innovation: focus on partnership, system strengthening and local impact for SDGs

31	Mendoza et Thelen	Innovations to make markets more inclusive for the poor
32	Christopher Foster & Richard Heeks	Drivers of Inclusive Innovation in Developing County Markets: A Policy Perspective
33	Mathew E.G.	Enhancing rural GDP through inclusive innovation.
34	Mapelli F et al	Inclusive innovation and the role of partnerships: The case of Semi di Libertà (Book Chapter)
35	Yu, K.a, Gu, X., Zhao, C., Hu, Y.	Research on Evaluation of Regional Inclusive Innovation Capacity Based on Catastrophe Progression Method
36	Sengupta	How effective is inclusive innovation without participation
37	Krishnan et al	Inclusive Innovation: Broader Market Coverage for Innovative Products with Deliberate Supply Chain Leadership
38	Goyal Ashima	Growth drivers: ICT and Inclusive Innovations
39	Ngoc C. T.	Universities and inclusive innovation for development: concepts and practices in Vietnam
40	Amaro-Rosales M. and Gortari-Rabiela R.	Innovación inclusiva en el sector agrícola mexicano: los productores de café en Veracruz
41	Bryden,Gezelius Refsgaard & Sutz	Inclusive innovation in the bioeconomy: concepts and directions for research

## Appendix 2

**Table Group IV features**

Refers to the concept of inclusive innovation?	Coded document	Author	Another specification
Does not apply the definition of inclusive innovation in the document nor implicitly	13	Hegger et al	
	14	Heiskanen et al	
	19	Nijhof et al	
	26	Johansson et al	
	27	Ola-David O. & Oyelaran-Oyeyinka O.	
	30	Clifford K. and Zaman M.	
	11	Aoun Chadi and Vatanasakdakul Savanid	
refers to a concept implicitly	9	Peñalba Linda and Elazegui Dulce	Not related totally to the inclusive innovation but more social inclusion through modern biotechnology management
	19	Nijhof et al	Inclusivity is more conceptualized over social responsibilities Not clear if it was just tackling poverty. More than studies are examples they present the characteristics of different stakeholders who tried to enhance the
	31	Mendoza Ronald & Thelen Nina	<i>inclusiveness</i> with business strategies that could improve market inclusivity Ex: mobile and card-based technologies for remittance transfers and payment, Also de retailing and pricing strategies
	37	Krishnan et al	Mangement and supply chain optimization paper: "inclusive innovation i.e. the alignment of the contract leader to be the investor in product development leads to the broadest market covergae as well as largest supply chain profits".

Source: Own elaboration based on the coded documents

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