IDENTITÀ, INNOVAZIONE E IMPATTO DELL'AZIENDALISMO ITALIANO.

Dentro l'economia digitale

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A cura di:

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ACCADEMIA ITALIANA DI ECONOMIA AZIENDALE

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PREFAZIONE

Da tempo e con continuità gli aziendalisti italiani hanno saputo interrogarsi sulla rispettiva identità e sul ruolo da ricoprire in un contesto generale, che per definizione è ritenuto dinamico e in continuo divenire. L'accelerazione intervenuta nel contesto tecnologico mondiale, che è evoluto nella direzione di una profonda rivoluzione digitale, sta innovando i modelli aziendalistici del passato e impone oggi nuove sfide e riflessioni alla nostra Accademia. Infatti, il processo in atto, innescato e alimentato principalmente da tre fattori interconnessi - la diffusione dei sistemi operativi e delle interfacce user-friendly, la rapida affermazione di Internet e del World-Wide Web e la convergenza di quattro settori di business precedentemente distinti (computer, software, comunicazione, media e intrattenimento) - oltre a introdurre nuovi modelli di business, modifica sempre più profondamente quelli tradizionali ed impone verifiche e cambiamenti negli schemi teorici di analisi dei fenomeni aziendali.

Intelligenza artificiale, Internet of Things, Internet of You, interfacce, social media, stampa 3D, cloud computing e dispositivi mobili in rete hanno contribuito alla diffusione di nuovi business model e alla generazione di ricchezza e valore economico. Inoltre, la digitalizzazione ha favorito l'introduzione di importanti modifiche nei processi produttivi tradizionali (come, dove, quando e con chi lavorare), accelerando la comparsa di nuove forme d'intelligenza organizzativa, attraverso la raccolta e l'analisi di big data. La velocità dei processi operativi, la flessibilità del processo decisionale, il modo di formulazione e implementazione delle strategie, le soluzioni con cui conseguire l'efficienza produttiva sono continuamente impattate da questi strumenti tecnologici, senza che nessuna dimensione delle moderne attività aziendali rimanga oggi immodificata.

I Big Data e i flussi informativi oggi disponibili sono diventati sempre più rilevanti e fonte di *business intelligence* per le aziende. Le ricerche online e la raccolta di informazioni sul processo decisionale di acquisto permettono di tracciare i processi personali di scelta e valutazione. Questo bagaglio di dati - generalmente non economico-finanziari -, ove raccolto e analizzato, può supportare efficacemente le aziende nel definire gli approcci dei clienti e condizionare, di conseguenza, le scelte strategiche e le forme organizzative da adottare.

A questi cambiamenti tecnologici se ne sono aggiunti di ulteriori, legati all'ambiente economico, fisico, culturale e sociale, che hanno portato le aziende a prestare attenzione ai temi dello sviluppo sostenibile ed alle esigenze di accountability.

Innovazioni e cambiamenti nella gestione aziendale, cui si affiancano rinnovati aspetti di responsabilità sociale e necessari nuovi approcci orientati alla sostenibilità ambientale, in una radicale riconfigurazione dei processi di formulazione delle strategie aziendali, delle forme organizzative e delle modalità di comunicazione, rilanciano il ruolo degli aziendalisti e impongono una ridefinizione degli approcci concettuali tradizionali e l'individuazione di nuovi schemi interpretativi. Infatti, i nuovi modelli di business e le novità nei processi gestionali presuppongono "innovazioni" nel ruolo delle figure aziendali e nei processi strategici e operativi tesi alla creazione di valore, coinvolgendo tanto gli aspetti più tipicamente tecnico-industriali quanto quelli amministrativi, finanziari, d'informazione e controllo.

Alla luce di questa acquisita consapevolezza, l'Accademia Italiana di Economia Aziendale, con il convegno dal titolo "Identità, Innovazione e Impatto dell'Aziendalismo Italiano. Dentro l'Economia Digitale", che si è tenuto presso l'Università degli Studi di Torino il 12 e 13 settembre 2019, ha inteso invitare gli studiosi, italiani e stranieri, di discipline economico-aziendali a riflettere, forti della loro identità, sulla direzione che le scienze aziendalistiche devono intraprendere sin dal presente, specie alla luce delle profonde e dirompenti trasformazioni che stanno rapidamente modificando i contesti e i modelli competitivi. Questa pubblicazione contiene il frutto di tali riflessioni e offre un'opportunità per la generazione e diffusione di conoscenza su questi temi.

Francesca Culasso – Presidente del Comitato Scientifico del Convegno AIDEA 2019
Michele Pizzo – Delegato AIDEA e membro del Comitato Scientifico del Convegno AIDEA 2019

INDICE

25. From Blockchain to Bitcoin and Beyond: A Social Learning Approach

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Abstract
The research purposed, would open a window on the possibility to define at first, the bitcoin and blockchain (BTC-BC) as a social learning phenomenon.
That assumption would be validated thanks to a netnographic method operated on the Internet thanks to the filter and analysis guaranteed by Google Trends, enhanced by a field analysis that would contribute to mirror-system creation.
The aim to demonstrate a kind of voluntariness in information seeking activities, lead the authors to investigate on the voluntariness to search information able to acquire knowledge on new themes as antecedent of innovation acceptance.
The exploratory approach of the analysis would interpret the BTC-BC scenario through the social learning interpretative paradigm, that could provide managerial implication in terms of informed context able to facilitate application and usage of new technologies in different ambits through knowledge-based strategies.

Keywords: Blockchain-Bitcoin, Social Organizational Learning, Knowledge, Active Information Seeking, Voluntariness, Innovation.

1. Introduction

Authors' objective would be to go beyond Blockchain and Bitcoin, their reciprocal influences, interactions and the actual ferment to the probable application in several sectors.
The orientation follows the aim to take a step back to the original trigger of Bitcoin and Blockchain emergence. At first, the authors presume that Bitcoin, thanks to the Blockchain innovative technology could be considered a social learning phenomenon through the information seeking activity.
The authors focus the attention on the fact that these powerful and disruptive technologies (Bresciani, 2016) in socio-economic field, need acceptance and legitimacy (Oliver, 1991) to be useful for further application in different ambits (O'Leary et al. 2018; Karpela, Hallikos & Dohlberg, 2017; Guo & Liang, 2016; Subramanian, 2018; Tarr, 2018; Iansiti & Lakhani, 2017; Azaria et al. 2016; Kokina, Mancha & Pachamanova, 2017).
The research work explores these considerations intersecting three areas: information seeking, relationship between information seeking and knowledge creation, conscious decision making and innovation acceptance. It would be helpful to consider rational decision theory (Berryman, 2008) and rational management theory (Migliavacca et al., 2017) connecting information seeking and decision making with social learning (Bandura, 1971) through the voluntariness to know and to know the true (Foucault, 1976).
The authors consider information seeking as a vehicle to acquire self-knowledge for decision-making and social learning interpreted as the action on the others' actions and vice versa in a whole thinking (Foucault, 1982). That could be useful to face uncertainty (Alchain, 1950) and barriers to innovation adoption (Kleijnen, Lee & Wetzels, 2009) thanks to voluntariness.
The aim would be not to demonstrate the effect of persuasion or internal motives to seek information and subsequent mitigation of rejection sentiments against innovation. By contrast, the authors, being aware that these kind of influences may occurr, consider them as research limits. In fact, they envisage future more focused analysis, precisely designed to investigate these variables. On that way, the perceptional sphere and knowledge on characteristics related to innovation (i.e. Bitcoin-Blockchain) would reinforce reflective and evidence based decisions (Mishra, Allen & Pearman, 2014) through the paradigm of social learning theory.
According to that objective, the authors provide to fill a specific gap present in literature on decision-making about innovation acceptance or reluctance. Decision-making literature on innovation has been adequately investigated on the hand of characteristics perceptions, but the modes of how to acquire knowledge on that characteristics for subsequent new technology acceptance or reluctance, appears scarcely investigated.
On the other hand, user's perceptions and innovation timing and diffusion (Rogers, 1995) have been studied. That point of view makes understandable that innovation characteristics and voluntariness would be determinants of acceptance (Agarwal & Prasad, 1997) through knowledge acquisition.
In this sense, if it is true that innovation resistance would be a response based on conscious choice (Kleijnen, Lee & Wetzels, 2009) it also should be true that innovation acceptance bases on rational choices.

The authors try to demonstrate what aforementioned on the fact that human beings would be conscious and critical decision makers. The assumption would be that voluntariness in seeking information activity to self-knowledge making, could be an antecedent of innovation acceptance.

2. Investigation scenario and gap

To make a conscious choice it would be necessary to reach a good knowledge on the argument.
The process in which individuals acquire information creating own knowledge has been described by Ellis' Model (Ellis, 1989).
Wilson (1997) identifies different categories of information seeking including both passive and active approach. The one the authors consider for the scope of the research would represent "Active Search".
That kind of searching information activity would be the most commonly used and occur when individuals actively seeks information. In this sense, information seeking behavior would represent purposive seeking for information related to a need of knowledge satisfaction.
Polanyi (1958) affirms that in regard of knowledge the focus should be on the act of knowledge as an active comprehension of things, intending the personal participation of knower in the activity to acquire information. In this sense, a great distinction could be done. On one hand, the act of acquiring knowledge through active information seeking would shape the voluntariness of the knowledge making (internal side). On the other hand (external side), there would be voluntariness of the action to create an informed context. The latter would be interpreted by authors as managerial implication (knowledge-based strategy) to facilitate innovation acceptance. That aspect would not be object of the contribution. By contrast, it precisely focuses the attention on a specific case about individual voluntariness to seek information related to bitcoin-blockchain.
It would be really important to shape the scenario of investigation as the base for research methodology and interpretative paradigm.
In the course of seeking, the individual may interact with manual information systems (newspaper or library), or with computer-based-systems (World Wide Web) (Wilson, 2000).
For research purposal, the authors decide to observe the World Wide Web community information seeking behavior as a translated daily life in virtual context, verifying the validity as a mirror-system through field analysis.
Netnography would offer only a partial view of many offline phenomena and observation in real life would reflect the same partial view of online phenomena (Kozinets, Dolbec & Earley, 2014).
That appears the justification of the use related to a multi-method approach. In this sense, it would find confirmation and strength. What above mentioned, would aim to shape the lines of the antecedent (neglected in literature) related to active acquiring knowledge to further conscious decision making process on innovation acceptance or reluctance.

3. Research questions and methodology

In that perspective, the World Wide Web could offer new opportunities to restructure the learning interexchanges.
Digital world would allow people to leave traceable activities.
These kind of activities appears a treasury for researchers, making possible to operate on behavioral aspects thanks to the huge amount of data that could be analyzed in several ways. Modern modes of technology are changing the information environment.
A revolution is occurring also in the pursuit of knowledge. Mainly a vast information expansion has been made accessible via cable or wireless all over the world. In that direction, increased sensitivity on the information seeking behaviours would be crucial (Xumei, 2010) to understand collectivity actions in making knowledge: on one hand, about new themes and innovations and on the other one, implementing conscious choices to adopt or reject innovations.
Focusing the attention on the starting phase (acquiring knowledge on innovations' characteristics) and on subsequent phase of conscious decision-making process (that anyway could be influenced by internal and external factors), the aim of this article could be considered multifaceted because of perspectives multiplicity that conducts to the results.
RQ1: Should Bitcoin and Blockchain be considered a social learning phenomenon?
The authors try to investigate that thanks to netnographic approach on Google Trends searching frequency analysis about the theme;
RQ2: Should voluntariness in information seeking be considered an antecedent of innovation acceptance?
The authors try to investigate that thanks to field analysis approach survey-based.
At methodological level, the authors opted for a new kind of ethnography: a web-based approach.
The ethnographic method needs that the ethnographer participates in people's daily lives for an extended period of time observing and interpreting actions in everyday life (Hammersley & Atkinson, 1983).
At theoretical level, social life could be intended as "human coexistence" (Shatzki, 2016) and translated on the virtual plan.

The authors implemented the netnographic method or virtual ethnography (Hine, 1994) to understand community behaviours on bitcoin/blockchain information seeking phenomenon.
Kozinets (2002) observes that per se ethnography would be time consuming and elaborate, requiring considerable skills and substantial investments in terms of resources.
To face these problems, the authors decided to implement an unconventional ethnographic research double filtered on internet: (1) not only screen-mediated, but also (2) through technological tool provided by "Google Trends" data analysis. In this sense, the time consuming activity in observing directly behaviours in information seeking and non-intrusive manner, has been remediated thanks to the filter operated by Google tracement activity. That preliminary research conducted by the authors would not loose solidity because it would include all the elements required for ethnographic observation over: time and presence of natural field (in that case: virtual) due to a web based phenomenon.
These conditions, as well as the ethnographic research, would be able to interpret behaviours (seeking for information) and to abstract the possible types of motivation at its base (Fig.1). The possible motivations (i.e. probable news titles influence on searching activities) could trace the limits of the research and should be subsequently investigate with a more specific method and analysis.
Another level of methodology considers a field research. In fact, a field analysis has been conducted to ensure a plausible correspondence thorough the mirror of behaviours between the real world and the virtual one or overturn the assumptions.
In this way the authors try to demonstrate the presence of active (Choo, Detlor &Turnbull, 1999) behaviours in information seeking enacting the field analysis through a questionnaire adequately built (Dolnicar & Grun, 2007; Krosnick & Presser, 2009; Burgess, 2001; De Leeuw, Hoox & Dillman, 2008) in support of the previous netnographic approach. That condition moves from the possibility to overlap and match results observed in the reproduction virtually mediated of a social ambience and the ones reported by the sample analyzed through field analysis. Is widely accepted that the relevance of different information sources and channels are evaluated on the basis of the familiarity and with the tool (Savolainen, 1995). The research provided by Meho and Haas (2003) attests that the 88% of respondents use electronic resources for information seeking. That would justify authors' observational channel choice. In accordance with Savolainen (1995), Meho & Haas (2003), the authors started the observation on google trends (to observe routinary people searching behavior) based on bitcoin and blockchain arguments (criteria used: "bitcoin", "blockchain" and "bitcoin-blockchain wikipedia").
The authors decided to overlap these trends with bitcoin price during the years. As result, they shows the same higher peak on a specific period (December 2017). Basing the assumptions on that, it has been necessary to build the questionnaire attempting to avoid personal values influence (Bruner & Goodman, 1947), giving no information (neutral) to respondents involved for the research on voluntary base. The population (38 males and 29 females) has been sampled through specific characteristics. The age considered it has been fixed between 18 and 29 years old students (n.67). As an active social learning phenomenon, information seeking behavior opens a window on the way to accept or reject innovations in social daily life and contexts.
This kind of multi-method approach based both on netnography and field analysis could represent on one hand, the social learning phenomenon and on the other one, the possible innovation acceptance related to the self-motivation for individual information seeking on google searching engine.

4. Activism in information seeking as social learning paradigm

In actuality, each learning phenomenon results from direct experience. The direct experience could be based on direct doing or direct observing. Both these types are modes of active self-knowledge making (Bandura, 1971). The action of seeking for information related to new arguments, becomes the crucial phase to making knowledge on it. In fact, an important rationale for seeking feedback is the desire to obtain useful information that can be used not only to reduce uncertainty, but also to self-evaluation, gain competence and knowledge (Morrison, 2002). Searching for information is an important part of being human, and it is something that people do on a regular basis (Case, 2007). The literature about innovation reluctance and acceptance, focuses the assumptions on the conscious decision especially on characteristics related to the tool (Agarwal & Prasad, 1997). On the other hand appears neglected the previous phase connected with the activism in self-knowledge making process on the innovation characteristics. How people create knowledge about new and unknown themes appears a little bit neglected. Kleijnen, Lee and Wetzels (2009) suggest that little attention it has been considered about the conceptualization of innovation resistance (individual or institutional).
The research provided by Kleijnen, Lee and Wetzels (2009), used as framework for that work, explains the major resistance (rejection, postponement, opposition) based on two antecedents groups: (1) degree of changes required and (2) conflicts with individual prior belief structure.

- Rejection appears provoked by an active evaluation with a strong disinclination to innovation adoption;
- Postponement shapes a kind of voluntary delay to accept innovation after other people opinion and usage;
- Opposition is a radical active rebellion and a kind of sabotage deciding to launch an attack against innovation.

Kleijnen Lee and Wetzels (2009) summarize existing literature in the following concepts, shaping the antecedents of innovation reluctance: traditions and norms, existing usage patterns, perceived image, information overload, physical risk, economic risk, functional risk, social risk. It has been well explicated by several researchers that the principal causes of reluctance would be considerable as the individual preference to the status quo if the innovation requires new skills or alteration in routines long-ingrained, and also the lack in potentialities and value that innovation would enact (Garcia, Bardhi & Friedrich, 2007). On the hand of knowledge-based choice, that perspective appears includes only on the case of information overload that could create confusion and reluctance. The categorization purposed appears scarcely focused on the voluntariness and activism to self-knowledge creation through information seeking. By contrast, active behaviours and voluntariness would be widely present in relation to rejection categories purposed by Kleijnen, Lee and Wetzels (2009). In this sense, the interpretive paradigm would open a second perspective of the research. Considering human beings as conscious decision makers, in light of the framework gap, voluntariness of active behavior in self-knowledge making (through information seeking) could be considered a facilitator-antecedent to innovation acceptance after information processing to create knowledge (Neisser, 2014).

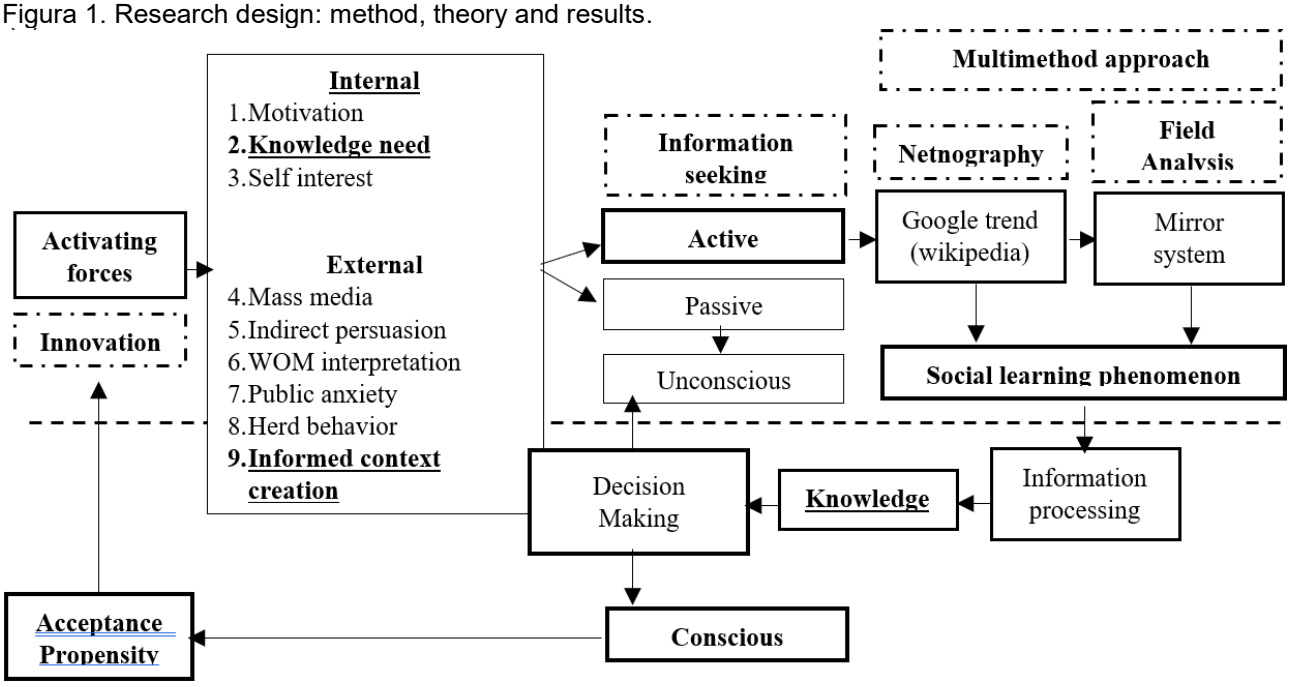
5. Information seeking behaviour

The model provided by Ellis (1989) it has been the first related to the information seeking behavior. He described six characteristics of information seeking:

- Starting: related to the first phase approaching a new theme;
- Chaining: the process of creating connections between different sources;
- Browsing: searching profoundly in different areas related to the theme;
- Differentiating: act of identifying probably useful material;
- Monitoring: activity based on following developments related to the theme in different areas;
- Extracting: activity based on identifying great source-verified material and summarizing (Ellis, 1989).

These phases formulate a scientific approach to make knowledge on a specific theme seeking information. In fact, aligning authors' aim and scope of the research, it has been useful to insert in questionnaire design a part based on habits and individual approaches in searching information related to new and unknown themes. Kuhlthau (1999) supposes that the decision-making process and the information seeking process probably intervene in recursive interaction rather than one following another in a neat, formal sequence. In that paper (Figure 1), the authors decide to separate the moment of self creation of knowledge through information seeking (1) and decision-making related to consequent innovation adoption or rejection (2). In the authors' point of view, the attention should be focused not so much on the hierarchical process of decision-making (define problem and kind of knowledge, define the goal, construct a set of pairwase and priorities of value) (Saaty, 2008), but rather on the previous phase based on how information would be acquired (actively or passively, in a deeper or superficial manner) to subsequent conscious human judgment.

Figura 1. Research design: method, theory and results.



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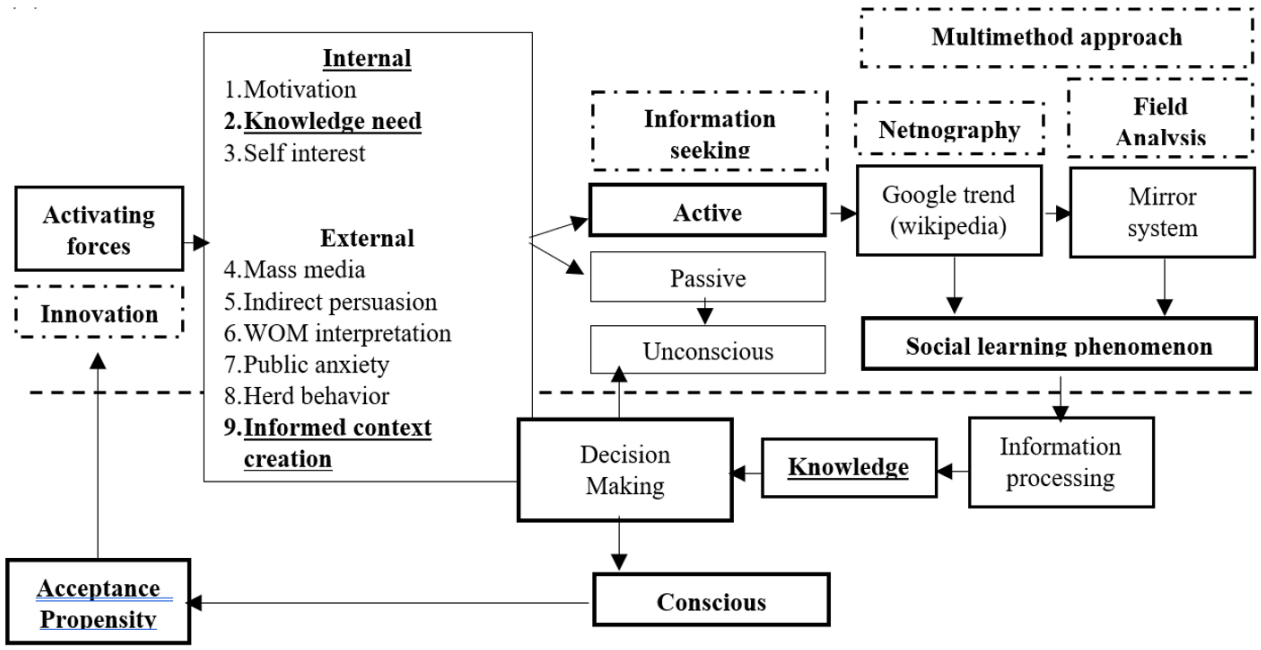


Source: our elaboration.

6. The why of the approach

Social life would be much more than small social phenomena alone. Innumerable large phenomena also exist. The authors consider examples as markets, international financial systems, educational systems, sport leagues, military alliances, the world of painting, and the fashion industry etc.

These phenomena would be larger than smaller ones and would not be directly accessible through experience, participation or direct observation (Shatzki, 2016).

Bitcoin and blockchain would be, due to their innovative skills a large world wide phenomenon.

Hence natural, not artificial settings like experiments or formal interviews, should be the primary source of data that the authors reinterpret with netnographic and field analysis approach.

A social researcher should adopt an attitude of respect or appreciation toward the social world (Hammersley & Atkinson, 1983).

Due to these reasons the decision to conduct the preliminary research on Google Trends, implementing a kind of ethnographic web-based observational approach, took substance. In this way, it would have been possible to be non-intrusive observer in the world where born and continue to evolve the bitcoin and blockchain phenomenon.

The aim to observe the real activity on web searching by keywords would have further implications and connections with real life.

The why to pursue this aim would be reconducted to the choice of netnographic and survey validation approach ensuring objectivity.

In fact, according to Collins (1981), the active agents in any sociological explanation of social structure must be microsituational. Macro aggregates of microsituations can provide the context and make up the results of such processes (Collins, 1981).

In this sense, the tool able to create the social reality mirror, would show the activism in actions that would construct at macro level the social context.

Several authors stress the role of ethnography in detailing day to day practices, while others emphasize the ability of ethnographer as stranger to bring into question the ethnographic setting.

A common character would appear to be the ethnographer as embroiled subject in the setting, face to face with the natives, able to understand their practices and behaviours (Hine, 1994).

Hamerly and Atkinson (1983) shaped the conventional enthnography through these words: *"the ethnographer participates, overtly or covertly, in peolple's daily lives for an extended period of time, watching what happens, listening to what said, asking questions; in fact collecting whatever data are vailable to throuw light on the issues with which he or she is concerned"* (Hammersley & Atkinson, 1983).

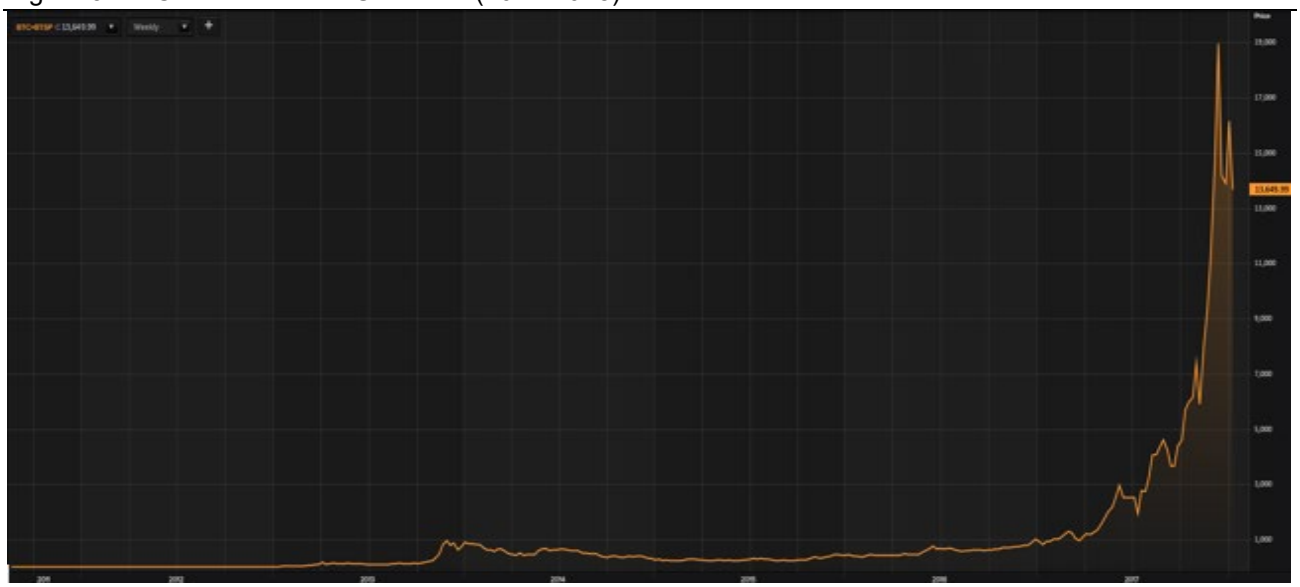
These kind of ethnography would be characterized by conventional schemes. By contrast, it would be possible to argue about ethnography through the medium of technology and the role that technologies play in ethnography (Hine, 1994).

In this sense, the authors' approach could be considered unconventional because of the observation based on virtual field and validation expressed by survey based methods, enabling the method on the assumptions that virtual world would be the mirror and just an extension of a translated reality.
The term virtual might misleadingly imply that these communities would be less real that physical communities. Kozinets (2002) points out these social groups have a real existence for their participants and thus have consequential effects on many aspects of behavior.
Netnography, or ethnography on the Internet, would be a new qualitative research methodology that adopts ethnographic research techniques to study the cultures and communities emerging through computer-mediation.
Ethongraphy per se would be time consuming and elaborate method that requires considerable skills and substantial investments on researcher resources (Kozinets, 2002).
To face these problems, the authors decides to implement an unconventional ethnographic research on internet, not only screen mediated, but double filtered also by technological tool provided by Google Trends. In this sense, the time consuming activity in observing behaviours on information seeking directly and not intrusively has been remediated by filter operated by Google tracing activity.
The preliminar research operated by the authors does not lack solidity because it would include all the elements of observation over time and the presence of natural field (virtual) of web based phenomenon.
These conditions, as well as the ethnogrphic research, would be able to interpret behaviors (in this case seeking for information) and the possible types of motivation at its base.
Possible motivations could be trace the limits of the research and should be subsequently investigate with a more specific analysis and methods.
To ensure a plausible correspondence thorough the mirror of behavior between the real world and the virtual one, a field analysis has been conducted to validate or overturn the assumptions.
According to the fact that netnography would offer only a partial view of many offline phenomena and, by contrast, observation in real life would offer the same partial view of online phenomena (Kozinets, Dolbec & Earley, 2014), the justification of a multi-method approach, provided for the research, would find confirmation and strength.
It could be generalized that people use frequently internet in daily life for satisfying the need of knowledge by seeking information.
According to that assumption, it should be understandable the why of the authors' choice, opting for the observation of active behaviors in information seeking on the bitcoin and blockchain themes directly on the web.
Technology acceptance and adoption has been widely discussed in literature (Mahajan, Muller & Bass, 1990; Zaltman, Duncan & Holbeck, 1973; Davis, 1989; Legris, Ingham & Collerette, 2003; Davis, 1993).
New information technologies or systems represent innovations for the target audience of potential adopters. It is well known in innovations literature that individual perceptions about using innovation, among other factors, are factors would be significantly a character of influence on user acceptance (Rogers, 1995; Moore & Benbasat, 1991).
Voluntariness would play a crucial role in technology acceptance (Agarwal & Prasad, 1997).
To support what above expressed, the figures provided (Fig. 1-2) would show the trends in bitcoin prices (BTC) from 2011 using the dollar as a unit of measurement (USD), focusing the attention on time frames at 1 year (Fig. 1) and from 2011 to December 2017 (Fig. 2) point of the maximum peak ever.
This would be useful to explain that the trends would be indicative of the fact that bitcoin had a strong growth in the last year.
By contrast, for a long time since its emergence, the trend has been without particular peaks, except that for a slight ferment between 2013 and 2014 (Fig. 2).
Between 2011 and the second half of 2012, the value was still almost at 0, gradually increasing to touch the first peaks on thousand dollars in the middle of 2013 with changes in value of even 50% down until the second half of 2014.
From this point the trend has been constant until 2016. At the beginning of 2016 the value had a gradual rise, increasing in the second half of the year amounting to $ 3,000.
At the end of 2016 and beginning of 2017 the value was the half of the previously reported and then back up again, triggering a succession of multiple appreciations and depreciation, reaching the higher point to approximately $ 19,000 at the end of December 2017, suddenly breaking down to $ 14,000 in a week.

Figure 2. BTC Price Trend in US Dollar (2017).

Source: Thomson Reuters (accessed: 11-01-2018).

Figure 3. BTC Price Trend in US Dollar (2011-2018).

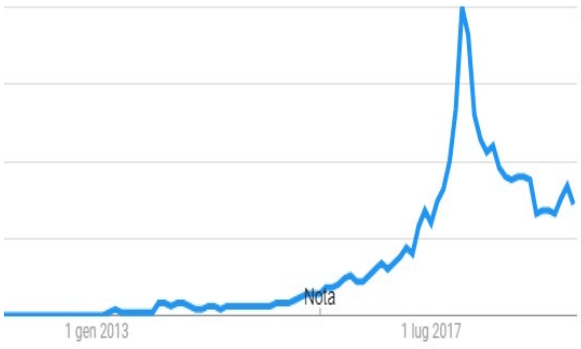


Source: Thomson Reuters (accessed: 11-01-2018).

The same period peak would be visible in online behaviour searching related to bitcoin and blockchain themes. In fact, through Google Trends tool it has been possible to overlap information seeking behaviours on the internet and price trends (form: Thomson Reuters).
The following figure (Fig. 3) compares searching activities related to the “bitcoin” and “blockchain” criteria; “bitcoin wikipedia” and “blockchain wikipedia” criteria.
The same period that affects BTC prices maximum peak, would reflect the behaviour in acquiring information and knowledge (Wikipedia searching criteria) about bitcoin and blockchain related to knowledge acquiring on the theme. One of the criteria used to validate the activism in information seeking, has been the Wikipedia searching related to the bitcoin and blockchain phenomena.
According to what expressed by Bandura (1971) bitcoin and blockchain could be considered as social learning phenomena.

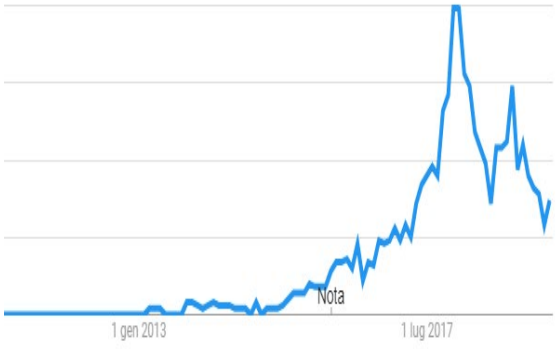
Figure 4. Blockchain and Bitcoin Searching Trends.

“Blockchain” trend (2011-2019)



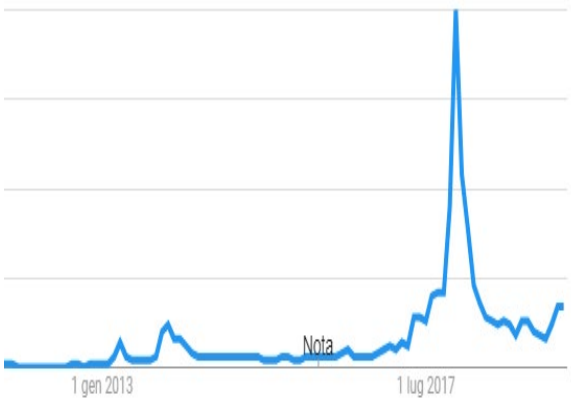
Source: Google Trends (accessed: 25-06-2019)

“Blockchain wikipedia” trend (2011-2019)



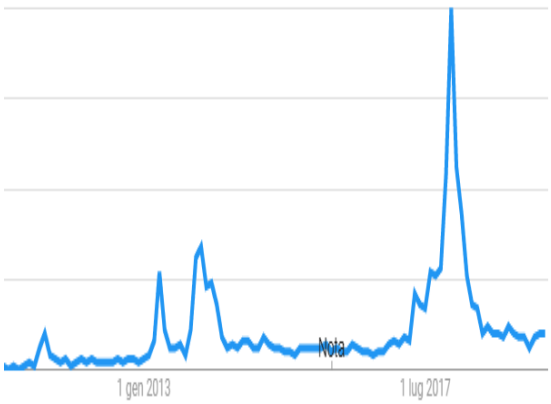
Source: Google Trends (accessed: 25-06-2019)

“Bitcoin” trend (2011-2019)



Source: Google Trends (accessed:25-06-2019)

“Bitcoin wikipedia” trend (2011-2019)



Source: Google Trends (accessed: 25-06-2019)

Source*:* our elaboration.

The BTC and blockchain information seeking activities, analyzed through a world wide area, shows that the trend are similar and also, in several cases, antecedent to the highest price peak on December 2017.
The table 1 shows the starting points related to the increased interest on bitcoin and blockchain.
Different levels of searching activities on the web have been considered: starting point, midpoint and peak point.
The periods connected with these levels, would be able to reveal, at theoretical plan, the probable nexus with the voluntariness in information seeking that could empower the assumption of social learning.
At methodological level, it has been crucial to intersect the results in searching activities related to the criteria “wikipedia” added to “bitcoin” and “blockchain” ones.
In that way, it has been possible to investigate and consider the behavioural voluntariness in searching information to increase knowledge on innvation and unknown themes.
Both bitcoin and blockchain would be intrinsecally interconnected (Caetano, 2015).
On one hand, bitcoin appears mediatically pushed, on the other one, blockchain remains behind the BTC shade.

Table 1. Interest Searching Activity Periods on Bitcoin and Blockchain.

Level / Criteria	Starting point	Midpoint	Peak point
"Bitcoin"	-7th May 2017-	-19th November 2017-	-3rd-20th December 2017-
"Bitcoin Wikipedia"	-7th May 2017-	-19th November 2017-	-3rd-20th December 2017-
"Blockchain"	-7th May 2017-	-19th November 2017-	-3rd-20th December 2017-
"Blockchain Wikipedia"	-8th-14th November 2015-	-3rd September 2017-	-15th October 2017- 7th January 2018

Source: our elaboration from Google Trends.

The netnographic analysis conducted, would confirm the similarities between the different interest searching activity periods and BTC price highest peak. By contrast, the interest around blockchain technology started in 2015.
Attesting that the starting point of a great level in searching activities about blockchain information would be datable several years before the larger social phenomenon and media influence, could be predictive on the social learning practice.
That evidence considers only the input criteria on web searching engine, without qualitative data about external or internal influences (i.e. Internal: Motivation and Self interest; External: Mass media, Indirect persuasion, WOM interpretation, Public anxiety, Herd behavior). Isolating these variable, the authors consider on the internal side, the knowledge need and on the external one, the informed context creation.
The interpretative paradigm, based on social learning approach through information seeking, would be validated thanks to the intent in searching activity to consider "wikipedia" as criteria to learn something about emerging and unknown themes like bitcoin and blockchain.
Linking active information seeking and knowledge creation with conscious decision-making through human information processing (Neisser, 2014), voluntariness could be considered as antecedent of innovation acceptance.
The field analysis, used to complete the multimethod approach would reflect, as a mirror system, the reality translated in searching activities on the web.

7. Field analysis findings

The questionnaire it has been useful to validate the mirror of virtual reality with behaviours in reality.
The field analysis based on the multimethod approach would reflect the possible relation existing between voluntariness in information seeking, the bitcoin and blockchain frame as social learning phenomena and knowledge building on the theme.
That would show the possible acceptance propensity in innovation as a more conscious decision-making process based on human rationality.
Basing the assumptions on that, it has been necessary to build the questionnaire attempting to avoid personal values influence (Bruner & Goodman, 1947), giving no information (neutral) to respondents involved for the research on voluntary base.
The population (38 males and 29 females) has been sampled through specific characteristics. The age considered it has been fixed between 18 and 29 year old students (n.67) (n.21 of economics and n.46 others faculties) because of the major innovation impact on them. In this way it has been possible to extract by the sample involved the risk propensity that appears lower considering 64,18% of scarce propensity, 31,34% medium and 4,48% higher (due to the only three answers by students of not-economics fields. In addition the levels of knowledge reflected by the sample would be 32,84% scarce, 62,69% medium and 4,48% higher.
These data appears fundamental to sample the population because the age, risk propensity, gender, knowledge and education level affects perceptions (Rainero & Modarelli, 2019; Deshpande, 1997).
Others important data extrapolated, represents the individual seeking information traits about innovation and new unknown themes.
Thanks to the field analysis has been possible to shape the standard behavior and approach that people use in seeking information to validate the assumptions related to the first phase of the research.
The 92,54% of the sample declares and shows a specific trait in searching (if interested and excited by the curiosity): *"on internet or different channels a huge number of information that once interconnected would create a clear frame of the argument, ensuring about the reliability of the sources"*.
The sample, in a multiple choices paradigm, also declares that the main channel through which it has been possible to acquire knowledge about BTC-BC it should be considered Internet and word of mouth (WOM).
The following table (Tab.2) shows the main data in bold, related to the frequency, revealed through the questionnaires, about the channel used to acquire knowledge on BTC-BC.

Table 2. Channel used to acquire knowledge on BTC-BC.

Channel	Frequency	(%)
Internet	55	82,09%
Newspaper - Journal	11	16,42%
Radio	1	1,49%
TV	25	37,31%
WOM	39	58,21%

Source: our elaboration.

In support of the research provided by Meho and Haas (2003), that attests about the 88% of respondents use electronic resources for information seeking, the field analysis (Tab.3) would validate the data and the research channel choice to operate a netnographic method, because of the major use of internet to acquire information and knowledge about new themes.

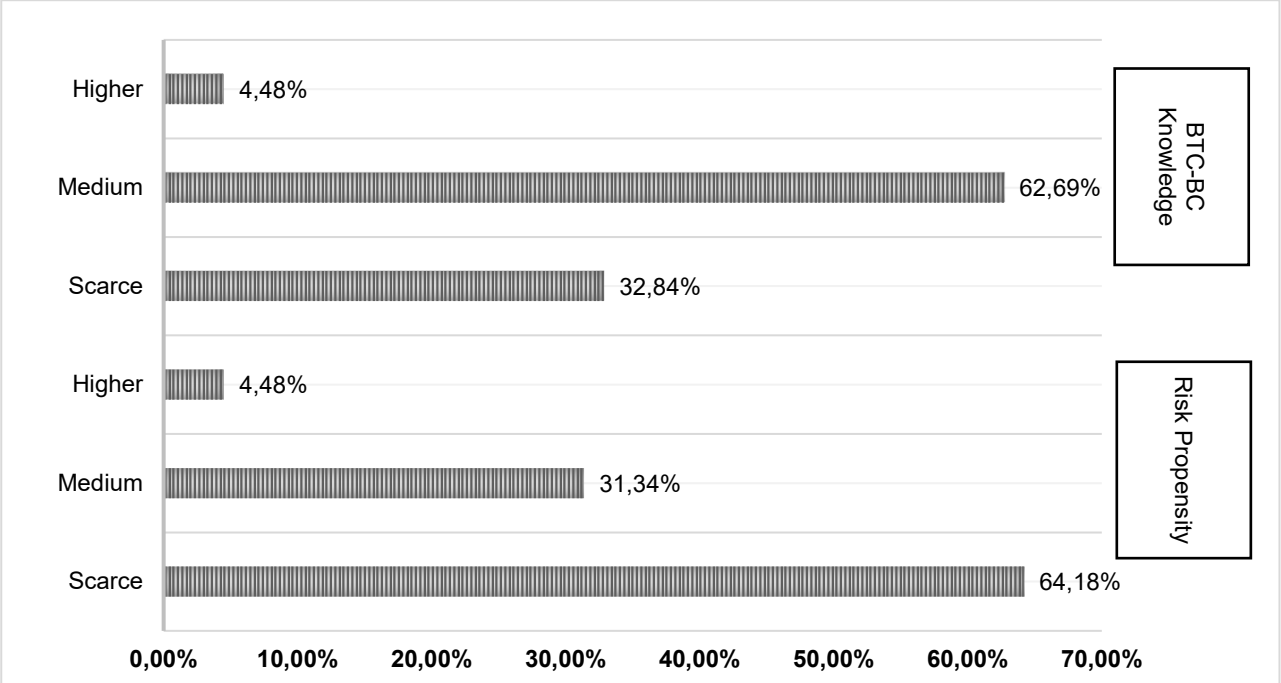
Table 3. Main channel used for information seeking.

Channel	Frequency	(%)
Internet	66	98,51%
Newspaper - Journal	4	5,97%
Radio	2	2,99%
TV	5	7,46%
WOM	3	4,48%

Source: our elaboration.

In addition to the data reported, the fig.4 represents the risk propensity and knowledge about BTC-BC phenomena in a graphical way.

Figure 4. Risk propensity and knowledge on BTC-BC.

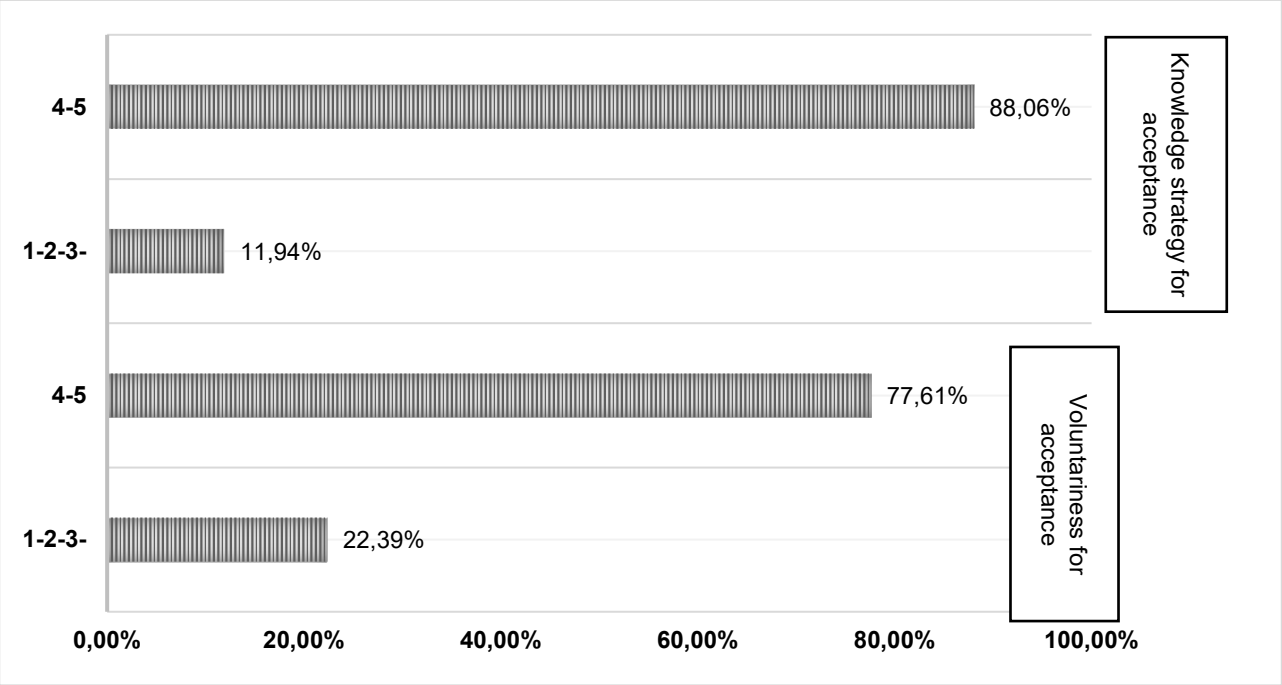


Source: our elaboration.

The following figure (Fig.5) shows the results extrapolated from the field analysis graduating the answers through a Likert pentenary scale, that for ensure and facilitate readability, the data have been aggregate (1-2-3 as scarce, lower and indifferent; 4-5 as higher).
The answer coded in the fig.5 as *"knowledge strategy for acceptance"* would be representative of a managerial implication related to the creation of an institutional and accessible knowledge context about innovation (characteristics, potentialities and risks).

The 88,06% of respondents would have a great propensity to accept innovation if it were possible to have at an institutional level access to information on the potentialities, characteristics and risks of any innovation (validating the trait related to the reliability of the sources).
The answer coded in fig.5 as *"voluntariness for acceptance"* would reflect the propensity to accept innovation through the voluntariness/ activism in seeking information on potentialities, characteristics and risks of any innovation.
The 77,61% of the population used as sample, reflects a higher propensity to acceptance if it were possible, in a voluntary manner, to create own knowledge on innovation tools through information seeking.

Figure 5. Voluntariness as antecedent of innovation acceptance and knowledge strategy.



Source: our elaboration.

8. Discussion, limitations and future perspectives for managerial implications

The main limit of the research would be related to the sample and its size, due to the exploratory approach.
By contrast, the research would open a great perspective on the BTC-BC phenomena, creating, through that case study, a generalization for innovation acceptance.
The authors would shape the voluntariness as an antecedent of acceptance, and above all, the self-knowledge creation on characteristics, potentialities and risks through information seeking.
The double validity of the data comes from the Wikipedia searching criteria added to the bitcoin and blockchain arguments and the mirror system created by the field analysis.
Another limits of the research could be underlined around the needs and motives that move people looking for information.
In that case, possible influences could be represented by mass media (Jennings & Dolf, 2002; Giles & Shaw, 2009) indirect persuasion (McQuarrie & Phillips, 2005) and WOM interpretation (word of mouth) (Kozinets, de Vlack, Wojnicki & Wilner, 2010,; McQuail, 1979), public anxiety (Tausczik, Faasse, Pennebaker & Petrie, 2011; Gadarian & Albertson, 2014), herding behavior (Lee & Lee, 2012; Bikhchandani & Sharma, 2001) and in the case of bitcoin, the aim of knowledge related to self-interest to gain easier profit.
Further research would remediate to these limits, on one hand investigating the possible mediatic influence with a sentiment analysis based on title of news articles during a specific period. On the other one, it could be necessary to study deeply, through a perceptive analysis, the real knowledge that people, citizen and workers in different sectors have on bitcoin and blockchain applications. That could be useful to solve the problem of barriers to innovation not only relating the acceptance on structural side (i.e. organizational, interactions, characteristics, contextual and process related) as affirmed by Cinar, Trott & Simms (2019), but restoring to people the intrinsic capability to make conscious knowledge-based decisions in the digital era.
Managerial implications could affect the role of marketers, policy makers, public administrations and companies per se, in view of knowledge context creation. These subjects could prepare people to innovation acceptance, favoring facilitated access to objective, impartial and comprehensive information on possibilities and risks about the near future of pervasive technologies in organizational frames.

The connections between knowledge creation and voluntariness could affect in a positive manner people behaviours and the conscious decision-making in accepting innovation.

9. Conclusion

According to the vision on creating knowledge-based contexts as external facilities, so the constructive activity or activism in seeking information (individual point of view), become the interpretative paradigm discriminant (social learning). In other words, the individual objective to extend the state of individual knowledge on particular characteristics, risks and potentialities on innovative themes (i.e. Bitcoin – Blockchain) assumes the main role, and permits to extrapolate significance from information (Kuhlthau, 1991). At individual level, voluntary activism in acquiring information on innovation characteristics could be representative as an antecedent of propensity to accept new technologies in social life practice.

The research considers the possibility to underline BTC-BC as a social learning phenomenon based on voluntariness in seeking information on the theme. That fist validation it has been pursued through netnographic method that necessitates, as a mirror system, an empowerment of data thanks to a field analysis. The field analysis would reflect, through a specific sample, the virtual information seeking behaviour.

The validation of voluntariness through the multi-method approach would create the base for innovation acceptance opening a window on knowledge and conscious decision-making.

On the other side the need of informed context could favor managerial implications in enacting knowledge-based strategies making information at institutional level accessible reducing in a preventative manner the natural resistance, finally avoiding rejection sentiments in usage and application of new tools.

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