COMPARING LITERATURE REVIEW USING PRE-STUDY (QUANTITATIVE) AND POST-STUDY (QUALITATIVE) METHODS IN THE AREA OF INFORMATION GATEKEEPING BASED ON EXPLORATORY BLENDED METHOD

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Abstract. Grounded theory method can reveal social (behavioral, cultural and environmental) factors forming the foundation of informal behaviors of the scientists in the process of science production. Literature review is recognized as a part of the grounded theory method. Discussions about how to carry out the stages of a grounded theory study have come about since 1960. During the early years, the experts had reached a consensus over the idea that the literature review should be conducted in the final stages of this methodology so that the least bias and dogmatism could occur in the creation of a theory. But, the current viewpoints are laid on the foundation that the literature review in the seminal stages of grounded theory not only does not reduce degrade the study power but it also can augment creativity, theoretical sensitivity and precision thereof. The present study compares these two perspectives within the area of information gatekeeping. The study population included the medical genetics researchers from Mashhad's medical sciences university who were assigned to two identical groups and examined by two researchers based on pre-study and post-study. After interviewing with the researchers, two questionnaire groups, including the information gatekeeping variables extracted from the interviews, were distributed amongst the study sample volume. The results indicated a trivial difference between the two variable groups. The notable point in the result was the respondents' easier understanding of the variables defined assisted by the post-study.

Keywords: grounded theory, literature review, information gatekeeping, pre-study in grounded theory, post-study in grounded theory

Introduction. As put by Niazi (2011), the first wave of methodology begins with quantity-orientation and it was determined following the revealing of quantitative methods' shortfalls in demonstrating the people's thoughts and intentions regarding special and complicated activities and incidents. The second wave of the methodology was expanded under the title of qualitative research that emphasizes on the perception of the processes leading to the studied results. Next, the constraints of these methods in generalizing the findings and other challenges of the qualitative research caused the attentions to be directed towards a combined approach named the third methodological movement. In this method, the quantitative or qualitative methods are not refuted rather they supplement one another via playing their corresponding roles, i.e. discovery and confirmation (Niazi, 2011). Since a complex phenomenon, called human being, is encountered in the study methodology of the human and behavioral sciences, there is a need for a larger diversity in the study methods so that more sure information could be attained. The diversity and wide use of such methods as 1) historical-comparative; 2) descriptive; 3) elaborative; 4) statistical; 5) simultaneous change; 6) Gestalt's holism; 7) content analysis in humanities studies signify that, aside from the competencies and usability of each of these methods depending on the complexity of the study subject, blended methods should also be applied. This same attribute resulted in the preliminary conflict and later on the interaction between the quantitative and qualitative perspectives in methodology to finally provide for the formation of a third blended methodology wave in the contemporary area. There are numerous debates in the area of the methodological studies regarding the preference of the quantitative and qualitative methods and there are very diverse approaches adopted in this regard. On the one hand, some believe that these two methods are generally separate and each reflects an aspect of reality and, on the other hand, some others are of the belief that these two methods should be blended (Briedenhann and Wickens). The blend-oriented researchers came to the conclusion that the combination of the quantitative and qualitative approaches enables a more subtle recognition of the social phenomena (Hasani, 2010). But, the investigations show that the method has been antiquated by the survey methods. In the methodological study conducted by Mokhtarpour and Haidari (2017), the lack of paying attention to multi-method and combined studies in the researches on information and knowledge science was pointed out. The main idea in combined method, also known as multi-attribute approach, multiple-method or mixed method, is that the combination of the quantitative and qualitative approaches provides for a more proper and more comprehensive comprehension of the topics. In this approach, the weaknesses and limitations of each quantitative and qualitative research will be compensated. Also, this method offers more comprehensive documents and evidences for performing studies on a subject and assists the researcher to find replies to the questions that cannot be answered by qualitative and quantitative approaches in separate (Niazi, 2011). In a methodological study that was carried out on the domestic and foreign researches in the area of information and knowledge science, Mokhtarpour and Haidari (2017) concluded that the common feature of the domestic and exotic studies is, first of all, the use of content analysis and, secondly, the unquestioned governance of the quantitative methods, particularly surveys, over the structure of the studies on the information and knowledge science and it was also remarked that the

daily increasing prevalence of qualitative methods' use has fallen short of overshadowing its domination domain. This is while the qualitative analytical methods are to be incumbently applied alongside with the quantitative methods in some information science fields due to the weakness of the theoretical foundations (Mokhtarpour and Haidari, 2017).

Statement of the Problem. One debated topic in qualitative and quantitative methodological approaches is the position of the literature review performed by researchers with various purposes. The objective of literature review in quantitative research has substantially been purging of the study questions, defining the extant gaps between the preliminary studies, defining the appropriate plan of the research and defining the data collection methods. But, the literature review position is rather vague and indefinite in qualitative research. In grounded theory methodology, the concepts are taken from the experimental data in lieu of via referring to the various texts. In the minds of their founders, the important thing in this theory is that the researcher should discard his or her presumptions in discovering a theory. Then, upon the formation of the assumption or theory, the relevant texts should be mixed with the findings. There are proposed numerous theories and suggestions regard the literature review position in grounded theory. Generally speaking, the literature review position in grounded theory research (before the commencement of the study) is reflective of the idea that it has to be investigated that whether a similar research has been previously undertaken or not? This level of the study can also be useful in line with preparing study suggestions, as well (Halberg, 2010). This important issue is made feasible through a brief review of the various studies. In spite of the distinctions between the qualitative and quantitative approaches to the study and the dominance of the quantitative research in humanities science fields, they are interrelated in a way or another. Few researchers have rarely denied the usefulness of the qualitative researches that have been recounted mostly as an exploratory path for the performing of social investigations. Qualitative researches are applied to prepare a useful and effective quantitative plan.

To be able to more accurately gain access to the study questions and assumption, not many researchers try taking advantage of qualitative researches with the objective of discovering the attributes and characteristics of the study background when their information is scarce about the study grounds and foundations (Pajouheh Journal, 2003). One common aspect of the qualitative and quantitative research is the investigation of the texts bearing topics on the study subject. Grounded theory, as a qualitative method, has not adopted a certain approach in this regard. According to El-Hussein, Kennedy and Oliver (2017) the literature review possesses a vague stance in the grounded theory. On the one hand, the researcher has to enter the study process with an empty mind and with no presumption for discovering and defining variables and, on the other hand, preparation of a research plan entails investigation of the related texts. The issue is still considered as an ambiguity in the grounded theory method by the researchers (Hussein, Kennedy et al, 2017). Giles (2013), as well, has examined the issue of temporal subsequence or precedence of literature review in the grounded theory as an ambiguous problem. In his opinion, the investigation of the texts is carried out before the data collection in the quantitative research and after data collection in the qualitative research. It is assumed in grounded theory method that the entry to the study process should be done with empty mind or, in other words, with no literature reviews (Giles, King et al, 2013).

The present study aims at comparing the pre-study and post-study approaches in the grounded theory methodology regarding the information gatekeeping concept; to put it differently, the present study is seeking to find an answer to the question as to what are the result changes of defining the variables and sub-variables of information gatekeeping based on grounded theory method with and without literature review?

Study Objectives:
1) Determining the consistency extent of information gatekeeping concept based on pre-study[18] and post-study[19] method;
2) Determining the consistency extent of the results of information gatekeeping investigation based on pre-study and post-study methods
3) Determining the theoretical saturation time assisted by pre-study and post-study method in information gatekeeping concept

Study Questions:
1) Are information gatekeeping results obtained based on pre-study and post-study methods in the same research consistent?
2) Are the results of the same study based on pre-study and post-study of information gatekeeping consistent?
3) How different is the theoretical saturation time in the pre-study and post-study of information gatekeeping?

Study Literature Review. There are many researches carried out on the quantitative and qualitative research methods. Amongst the discussions existing on the selection of one of the two foresaid methods, the application of a combined method was posited as the dominant approach that allows the researcher with its high flexibility to choose either of the two quantitative or qualitative methods or a combination of both as deemed expedient (Briedenhann and Wikens). To investigate the texts related to the present study subject matter, the articles pertaining to qualitative and quantitative methods and positing the researchers' preference in choosing each of them were selected. Generally, the approach adopted in the recent studies is a mixed or blended one. Abedi and Showakhi (2009), Takhshid and Matin

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[18]Literature review before data collection
[19]Literature review after data collection

(2009), Vakili and Ansari (2011), Mokhtarpour and Haidari (2016), Niazi (2011), Rahmanpour and Nasr Esfahani (2013), Avijgan and Nasr (2012) and Kashmiri (2016) are amongst the researchers who have dealt with the issue. The latest research on the study methodology has been carried out by Mokhtarpour and Haidari (2016) who dealt with study methodology inn information and knowledge science. Meanwhile pointing to the blank space of the qualitative research in between the collection of the methods, the methodological investigation has been conducted for the last ten years in the study. It has also been stated that the number and diversity of the methods used by the researchers have been increased during the early 21st century. In the end, although the governance of survey methods is considerably manifested in both sets of the domestic and foreign studies in various time spans, it has to be taken into account that such governance has not been accompanied by a methodological diversity in Iran, unlike the other spots around the globe. Finally, the common aspect of the internal and external studies has been firstly the use of content analysis and secondly the undisputed governance of the quantitative methods, especially surveys, over the structure of the information and knowledge science and it has been the case that the daily increasing prevalence of the qualitative methods has not been able to overshadow its dominance (Mokhtarpour and Haidari, 2017). At the same time with this research, Kashmiri (2016) offered a blended research methodology in urban design. The study findings indicated that the blended methods have been more frequently applied in urban design studies than the quantitative and qualitative methods in separate and alone. Moreover, the results of the blended investigations have been found well beyond the total sum of the quantitative or qualitative findings and this situation can cause the enhancement of the urban design programs and plans (Kashmiri, 2016).

Rahmanpour and Nasr Esfahani (2013) investigated curriculum planning in terms of methodology. The study was conducted based on a quantitative approach using documentary content analysis. The study results indicated that the qualitative approach is dominant in the foreign studies. The case studies and phenomenological studies were found taking the next ranks. In Iran, the quantitative approach is enumerated amongst the dominant methods of doing research in this area and the survey methods were found most frequently applied. Furthermore, it was also indicated that the trend of the domestic and foreign studies signify an orientation towards quantitative research, then, qualitative and finally blended research approaches. Of course, the trend is more vividly tangible in the foreign studies (Rahmanpour and Esfahani, 2013).

Avijgan and Nasr (2012) investigated the study methodology in medical education within the format of 132 articles. They showed that the majority of the researches have been undertaken based on quantification of such types as descriptive and cross-sectional with census and convenience methods as the most frequent sampling methods and questionnaire as the data collection method of choice and descriptive statistics analysis as the method of data evaluation. It is stated in the results if the foresaid study that the medical education will be suffering superficiality if it is restricted only to quantification presumptions. The use of blended method for more exact recognition of the complexities of a studied phenomenon and finding answers to the study problems has been put forth as a solution (Avijgan and Nasr, 2012).

In a study part entitled the "evaluation of the entrepreneurship study method in the country", Vakili and Ansari (2011) investigated the dominant methodology in the studies on entrepreneurship. The study population of the study included the articles (92 articles) published in research and scientific journals of entrepreneurship development during the time period between 2008 and 2011. The study results indicated that quantitative method is the dominant study methodology in common entrepreneurship researches and the qualitative and blended studies that are more in proportion to the dynamic and complex nature of entrepreneurship have been less frequently applied (Vakili and Ansari, 2011).

Niazi (2011) concluded in an investigation of the evolution trend of the blended study methodologies in humanities that, in order to enhance the study methodology, it is necessary to follow the blended research approaches in social studies. He has pointed to the substantial approaches in the social and human studies that incorporate three waves, namely quantification, qualitative research and blended approach (Niazi, 2011).

Takhshid and Matin (2009) investigated the blended research methodologies in political sciences. In their study, they offered various definitions of the blended research methodology, models and patterns and investigated the use of these methods in political and social sciences. It was pointed out in the study that we are now bearing witness to the increase in the tendencies towards the use of blended methodologies in social sciences, in general, and, more specifically, in political sciences following the increase in the criticism of the qualitative and quantitative methods. In fact, the use of blended methods enables overcoming of the weaknesses of using a quantitative or qualitative method. Despite the use of blended research methodologies in political sciences, these methods are found still applied in a low volume of the researches in this field. It has been pointed out in the end that the entire experts are of the belief that the use of blended methods as a supplement alongside with, and not in opposition to, the positivist and interpretation-oriented approaches will be increased as a third approach and paradigm (Takhshid and Javid, 2010).

Leaving the studies pertinent to the comparison of the quantitative and qualitative methods behind, in the next stage, some of the studies have dealt with grounded theory research and the position of the quantitative and qualitative methods in this methodology. El-Hussein (2017), Avamaria (2013), Briedenhann and Ramalho (2015), Thurman (2018) and Giles (2013) are amongst the researchers who have penned topics in this regard.

El-Hussein (2017) is of the belief that the literature review in grounded theory is a nonlinear multistage approach. In the first stage, the researcher recognizes the gap in the existing texts and justifies his reasons for performing the study. He also believes that familiarity with the texts is a remarkable guide in the interview stage for the researcher.

Familiarity with the texts helps researcher not to get involved in dealing with similar topics during interview. Grounded theory discusses about the main concern of the study participants. Such an idea limits the discovery of the new knowledge and it has always been criticized. It is not very much irrational to also find the concern from inside the texts. Therefore, with such a mindset, grounded theory is prone to shortcomings in discovering the various aspects of a problem (El-Hussein and Kennedy et al, 2017).

Avamaria, Sewchurran and Delatzky (2013) dealt in a study with the comparison of the literature review in grounded theory and systematic literature review in software development and offered various variables related thereto. The grounded theory enables researchers to perform a precise review of the literature in a given area and the systematic literature review provides for the opportunity of descriptive analysis of the articles found on a specific topic. The study results indicated that the researchers of this area should define the variables in a blended and not mixed manner. This field is realized as interdisciplinary and the variables mutually influence one another so it is better to study the variables of this area all at once (Utulu and Sewchurran et al, 2013).

In an investigation of the position of literature review in grounded theory studies, Ramalho et al (2015) examined the effect of literature review before data collection and analysis using this methodology. They investigated the epistemological gap between these two perspectives. In this approach, the researcher alone cannot guarantee the grounded-ness of the theory rather the active participation of the researcher in data prioritization amongst the other outputs is necessary and favorable. For a grounded theory researcher, it is necessary to explicitly discover and verify his epistemological stance during the early study stages because such a determination of position will eventually determine that to what extent has the prior research review before data collection and analysis been successful and potentially effective in the grounded theory results. They found out that, besides adoption of qualitative and quantitative methods and approaches in performing studies based on grounded theory methods, there is another challenge which is the time that the literature review has to be conducted for the discovery of the variables and theories. The researcher brings not only his own personal experiences but also the information he has obtained from literature review to the study (Ramalho and Adams et al, 2015).

Thurman (2018) used and evaluated blended method in an investigation of the formation, production and utilization of online news on national and local English websites. The preliminary methodology of the study was an inductive and exploratory one based on semi-structured interviews with the journalists and editors and content analysis of the interview texts. Besides this method, the quantitative assessment and observation of the used internet as well as analysis of the document contributive in this regard were carried out. The individual methods and instruments of information gathering were dealt with in details in the study and the advantages and disadvantages of each were counted. Forty percent of the study pertained to longitudinal data collection in that it could integrate the evidences from the various historical periods. Besides the operationalization of the qualitative method (interview and content analysis) and quantitative method (quantitative investigation of internet use), it was found out the application of a blended method is useful in researches on media (Thurman, 2018).

Giles et al (2013) studied the issue of literature review in grounded theory methodology and investigated two dominant perspectives of literature review before the onset of the study and literature review after the termination of the study stages amongst the existing texts. Making reference to the existent perspectives, it has been asserted that the literature review before the onset of the study can cause theoretical sensitivity and be followed by innovative accuracy and discretion for the study. The approach also minimizes the occurrence of dogmatism in the study. The study proposes a suggestion indicative of the reality that the occurrence of the predictions in the course of the study should not be prevented rather it has to be ascertained that the predictions enjoy correct and authentic premises in the extant evidences and that they are always recognized as subjects for further study and revision. Literature review before the onset of the study corroborates grounded theory methodology if used flexibly (Giles and King et al, 2013).

As it was mentioned in the studied texts, the experts of the study methodology have taken various perspectives to the method and time of performing library research in grounded theory. These perspectives vary from the selection of pre-study method, meaning the review of the study literature before the initiation of the study, to the post-study, meaning the review of the literature after the data collection and only as a supplement to the gathered data. The present study examines these two primary and debated perspectives under research conditions and presents the results.

Study Methodology. The present study has been formulated considering the discrepancies between the grounded theory researchers regarding the method of studying the texts related to the study subject and based on qualitative methodology and interview and library research and data collection. The study population included medical genetics researchers from Mashhad's Medical Sciences University reaching in number to a total of 14 individuals all of whom volunteered to enter the study. The objective of choosing these individuals firstly was their attendance of one of the superior universities in the area of medical genetics and secondly their availability to the researcher. These individuals were faculty members and supplementary education students in the foresaid field. Out of these 18 individuals, 13 expressed their willingness to take part in the study. These were equally assigned to two researchers (researcher and assistant researcher) for interview in such a manner that three faculty member and four students were placed in one group and three other faculty members and four other students were placed in a second group. The data collection was conducted simultaneously. The first researcher interviewed the first group before studying and reviewing the literature and extracted the variables and the second researcher did the same after the review of the literature. To preserve the validity and credibility of the study, both of the groups were selected in an identical manner. Content analysis and interviews' variable extraction were carried out using Max Qda Software.

After the variables were defined based on both of the methods, both of the variable groups were identically administered to the study sample volume within the format of questionnaire. The first questionnaire presented the respondents with the information gatekeeping entities based on literature review method and the second questionnaire provided the respondents with the entities playing the role of gatekeeping based on grounded theory method. The comparative investigation of the respondents' perspectives regarding the two variable groups was conducted in SPSS software. A questionnaire was posited per every mechanism in the first and second group that was scored based on Likert's five-point scale. The designed questionnaire was examined based on Cronbach's Alpha method and the first questionnaire (gatekeeping mechanisms based on literature review) acquired 68% of the scores and the second questionnaire (gatekeeping mechanisms based on grounded theory) received 92% of the scores.

To prove the accuracy of the data, the following steps were taken:

- Disregarding the pre-study and post-study stages, the researcher's presumptions regarding the unofficial relationships in the production of science should be written down and compared with the findings before the onset of study so that the reliability could be secured. To do so, the variables were firstly extracted from the literature following which interviews were carried out and analyzed. This way, before interviewing the study participants, the researcher had an overview of the subject clarified in his mind.

- The interviews were recorded on a tape so as to resolve the future remembering problems.

- The copies were independently reread by a second researcher so that it could be proved that the interpretations are appropriate and similar. In total, 12 individuals participated in the interviews to reach a saturation of the information. Then, the interview information were reread and reviewed by three researchers independently. Besides, the questionnaire prepared based on the interviews were evaluated by five experienced experts of the field and their validity was confirmed. The present study was conducted based on pre-study and post-study with the review of the literature on gatekeeping mechanisms as described in the order below:

Method One: Review of Literature on Gatekeeping Concept Based on Post-study Method. The study sample volume was interviewed before the study and literature review to carry out this part of the study. Interviews were encoded using Max Qda software. After encoding the interview text using the foresaid software, the conceptual map was extracted. The defined codes along with their highest frequency rates have been summarized in table (1). In the first stage of the interview analysis, 90 primary codes along with several secondary codes were extracted[20]. In total, 542 sentences from interview texts were found matching with the defined codes. After reevaluation, the codes were rewritten and the similar cases were merged and, in the end, the primary codes were reduced to 36. The idea development, evaluation and implementation stages scored the highest frequencies, respectively.

Table 1: the results of interview analysis using content analysis software

Row	Code	Codes' frequency	Frequencies of the secondary codes
1	Official scientific relationship	7	7
2	Gatekeeping factors/motivation	5	6
3	Gatekeeping factors/budget	10	10
4	Gatekeeping factors/influence of others	1	1
5	Gatekeeping factors/experience/personal experience	4	3
6	Gatekeeping factors/experience/being less experienced		1
7	Gatekeeping factors/embargo	1	1
8	Gatekeeping factors/change in the human workforce	1	1
9	Gatekeeping factors/change in the predicted conditions	2	2
10	Gatekeeping factors/information collection	1	1
11	Gatekeeping factors/university students as means of research	1	1
12	Gatekeeping factors/availability of articles	3	3
13	Gatekeeping factors/dealership	1	1
14	Gatekeeping factors/time/wastage of time	15	9
15	Gatekeeping factors/time/saving of time		1
16	Gatekeeping factors/time/limited time		1
17	Gatekeeping factors/time/professor's lack of spending enough time		4
18	Gatekeeping factors/personal tastes/personal characteristics	9	9
19	Gatekeeping factors/inefficient systems	3	3
20	Gatekeeping factors/lack of paying attention to the existing capabilities	2	2
21	Gatekeeping factors/intellectual ownership	1	1
22	Gatekeeping factors/internet issues	2	2
23	Gatekeeping factors/faculty members' problems/ professor instruction	18	6

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[20] The study investigates the information gatekeeping factors in the study process. Thus, study stages and unofficial scientific relationship mechanisms are also seen amongst the codes.

#		Col1	Col2
24	Gatekeeping factors/faculty members' problems/expecting research from the faculty members		1
25	Gatekeeping factors/faculty members' problems/establishing relationship with professors		2
26	Gatekeeping factors/faculty members' problems/access to prominent researchers		4
27	Gatekeeping factors/faculty members' problems/faculty members' weakness		1
28	Gatekeeping factors/faculty members' problems/compulsory activity		1
29	Gatekeeping factors/faculty members' problems/purchase and order responsibility is on the researcher		3
30	Gatekeeping factors/teamwork problems	3	3
31	Gatekeeping factors/personal interests	1	1
32	Gatekeeping factors/resolving barriers	1	1
33	Gatekeeping factors/absence of a research standard	1	1
34	Gatekeeping factors/lack of interdisciplinary knowledge	2	2
35	Gatekeeping factors/the role of relationship in solving problems	3	3
36	Gatekeeping factors/the role of relationship in solving problems/friendly relationships		
37	Nodes involved in unofficial communications		
38	Nodes involved in unofficial communications/vents	22	22
39	Nodes involved in unofficial communications/enactment stage	7	7
40	Nodes involved in unofficial communications/enactment stage/positive gatekeeping	11	5
41	Nodes involved in unofficial communications/enactment stage/negative gatekeeping	6	6
42	Nodes involved in unofficial communications/implementation stage	32	5
43	Nodes involved in unofficial communications/implementation stage/positive gatekeeping		7
44	Nodes involved in unofficial communications/implementation stage/negative gatekeeping		20
45	Nodes involved in unofficial communications/evaluation stage	50	3
46	Nodes involved in unofficial communications/evaluation stage/response to the reviewer		2
4547	Nodes involved in unofficial communications/evaluation stage/positive gatekeeping		19
4648	Nodes involved in unofficial communications/evaluation stage/negative gatekeeping		26
49	Nodes involved in unofficial communications/idea development stage/continued	94	8
50	Nodes involved in unofficial communications/idea development stage/continuing the prior research		1
51	Nodes involved in unofficial communications/idea development stage/use of the others' experiences		7
52	Nodes involved in unofficial communications/idea development stage/repetitive ideas		2
53	Nodes involved in unofficial communications/idea development stage/problem-oriented ideas		10
54	Nodes involved in unofficial communications/idea development stage/system improvement		2
55	Nodes involved in unofficial communications/idea development stage/responding to expectations		2
56	Nodes involved in unofficial communications/idea development stage/summing and blending the data		2
57	Nodes involved in unofficial communications/idea development stage/brainstorming thoughts		3
58	Nodes involved in unofficial communications/idea development stage/negative gatekeeping		11
59	Nodes involved in unofficial communications/idea development stage/positive gatekeeping		5
60	Nodes involved in unofficial communications/idea development		4

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No.	Node		Count
	stage/negative gatekeeping/numerosity of duties		
61	Nodes involved in unofficial communications/idea development stage/positive gatekeeping/interdisciplinary communication		3
62	Nodes involved in unofficial communications/idea development stage/positive gatekeeping/consulting ideas with others		3
63	Nodes involved in unofficial communications/idea development stage/negative gatekeeping/piracy		3
64	Nodes involved in unofficial communications/idea development stage/positive gatekeeping/ethical values		2
65	Nodes involved in unofficial communications/idea development stage/negative gatekeeping/limited time		1
66	Nodes involved in unofficial communications/idea development stage/search		7
67	Nodes involved in unofficial communications/idea development stage/students' questions		4
68	Nodes involved in unofficial communications/idea development stage/personal interests		1
69	Nodes involved in unofficial communications/idea development stage/having an applied nature		1
70	Nodes involved in unofficial communications/idea development stage/forming ideas from feedbacks		1
71	Nodes involved in unofficial communications/idea development stage/consulting with professors		6
72	Nodes involved in unofficial communications/idea development stage/desired topics		1
73	Nodes involved in unofficial communications/idea development stage/desired topics		1
74	Nodes involved in unofficial communications/information search stage	23	3
75	Nodes involved in unofficial communications/information search stage/negative gatekeeping		9
76	Nodes involved in unofficial communications/information search stage/positive gatekeeping		11
77	Nodes involved in unofficial communications/writing stage	31	4
78	Nodes involved in unofficial communications/writing stage/positive gatekeeping		19
79	Nodes involved in unofficial communications/writing stage/negative gatekeeping		8

After reevaluation of the codes, the gatekeeping factors were reduced to 24: motivation, budget, experience, embargo (factors resulting from foreign relations), change of conditions, availability (of information and individuals), dealership (in information transmitting), time, personality characteristics, systems' inefficiency, lack of paying attention to the potentials, intellectual ownership, internet issues, professors and university students' instruction, multiplicity of professors' duties, weakness of the faculty members, faculty members' problems, teamwork problems, personal interests, solving barriers, lack of interdisciplinary knowledge, the role of relationship in problem-solving, imperfect information and repetitive information.

The following graph is the conceptual map of the gatekeeping factors that has been obtained through interview analysis. Besides extracting the gatekeeping mechanisms independently, it was endeavored in defining the secondary codes to deal with gatekeeping concept in the heart of each of the five stages. Some of the most important information gatekeeping mechanisms obtained in each of the five stages have been summarized in the graph below.

Method Two: Reviewing the Literature on Gatekeeping Concept Based on Pre-study Method

A total of 26 sub-variables were extracted as listed below for information gatekeeping in an investigation of the gatekeeping literature and the related areas:

1) Selection
2) Addition
3) Limitation
4) Representation
5) Channeling
6) Formation
7) Manipulation
8) Timing
9) Localization
10) Integration
11) Ignoring
12) Omission
13) Security mechanism (identity control, integrity control and access control)
14) Usefulness cost mechanism (such as the costs of joining, using and exiting network)
15) Added value mechanism (customization, personalization and integration of information instruments)
16) Infrastructural mechanisms that control the users' behavior in infrastructural level
17) Users' mutual interaction mechanism (like add-on navigation instruments)
18) Editorial mechanism
19) Legislation mechanism
20) Information quality
21) Linking: networking
22) Leadership
23) Agency
24) Liaison
25) Gatekeeping
26) Mobile dealership
27) Advisors

The following table gives a summary of the mechanisms and experts related to each.

Table 2: summary of investigation of the related literature

	Variables obtained from literature review	Experts confirming each variable		Variables obtained from literature review	Experts confirming each variable
1	Selection	Barzilay (2008), Sato (2012), Foster (2011)	13	Usefulness cost mechanism	Barzilay (2008)
2	Additions	Barzilay (2008)	14	Added value mechanism	Barzilay (2008)
3	Limitation	Barzilay (2008), Davarpanah (2005)	15	Infrastructural mechanisms	Barzilay (2008), Delius (2011)

#	Variable	Source	#	Variable	Source
4	Representation	Barzilay (2008)	16	Users' mutual interaction	Barzilay (2008), Sato (2012)
5	Channeling	Barzilay (2008), Davarpanah (2005)	17	Edition	Barzilay (2008), Barzilay (2006), Sato (2012)
6	Formation	Barzilay (2008)	18	Legislation mechanism	Barzilay (2008), Barzilay (2006)
7	Manipulation	Barzilay (2008), Davarpanah (2005)	19	Information quality	Budock (2011), Mazra (2013)
8	Timing	Barzilay (2008), Davarpanah (2005)	20	Linking	Sato (2012), Zaltman (1974), Cura and Willer (2002), Delius (2011)
9	Localization	Barzilay (2008)	21	Leadership	Sato (2012), Yukutherdo (2011)
10	Integration	Barzilay (2008), Davarpanah (2005)	22	Agency	Fernandez (1994)
11	Ignoring	Barzilay (2008), Davarpanah (2005)	23	Liaison	Fernandez (1994)
12	Omission	Barzilay (2008), Davarpanah (2005)	24	Gatekeeper	Fernandez (1994)
13	Security mechanism	Barzilay (2008), Davarpanah (2005)	25	Mobile dealership	Fernandez (1994)
			26	Advisors	Fernandez (1994)

First Study Question: are the variables defined based on the two methods of pre-study and post-study consistent in the same research?

As it can be understood from the information given in table (3), a trivial difference is observed in the number of the mechanisms of the two methods and a relative comparativeness holds between the mechanisms extracted from both of the methods. The point worthy to be noted herein is the literature used in each method. The grounded theory method proposes the mechanisms in the language common amongst the researchers whereas the literature applied in the literature review method puts forth rather strange words and items. It can be stated from this viewpoint that the defining of the variable or theory based on grounded theory is more appropriate to do a research.

Table 3: variables obtained from the pre-study and post-study and definitions

#	Variables obtained from literature review	Correspondent variables obtained from grounded theory	Mechanism definition
1	Selection	Access-embargo	Filtering and screening of the writings for the selection of the best. The gatekeeper chooses which cases can be accessed.
2	Additions	Repetitive information	Sinking in information
3	Limitation	Imperfect information-intellectual ownership	Prevention of information offering
4	Representation	System efficiency issue	Information representation in a specific form to be observed
5	Channeling	Dealership-embargo	Guiding information through a special channel
6	Formation	Dealership-embargo	Offering a special form of information
7	Manipulation	Change of conditions-manipulation	Changing the information for securing the gatekeepers' objectives
8	Timing	Time-issues related to internet	Postponement
9	Localization	Translation	Correction or adjustment of information for the audience
10	Integration		Mixing a serious function with an integrated whole
11	Ignoring		Worthless information
12	Omission	Imperfect information-embargo-dealership	Elimination of part of the information
13	Security mechanism	Piracy	Access control
14	Usefulness cost mechanism	Budget	Budget related discussions
15	Added-value mechanism	Budget	Budget-related discussions

16	Infrastructural mechanisms	Internet issues-systems' efficiency	Technology access
17	Users' mutual interaction		Like Add-ins navigation tools
18	Edition	Judgment-evaluation	Content adjustment
19	Legislation mechanism	Rules and regulations	Rule codification
20	Information quality	Solving barriers	Quality guarantee
21	Linking	Dealership-embargo	Creation of communication network
22	Leadership	Faculty members' problems	Information selection
23	Agency	Dealership	Dealership, information exchange
24	Liaison	Liaison in problem-solving	Intermediaries or dealers
25	Gatekeeper	Work-processor	Information intermediation
26	Mobile dealership	Dealership	Information intermediation
27	Advisors	Dealership-relationship in problem-solving	Information intermediation

Second Study Question: are the results of the same study based on pre-study and post-study consistent?

To compare the results of gatekeeping variables' investigation based on the two methods, a questionnaire comprised of the defined variables was designed based on both of the methods and administered to the respondents to determine the amount of effect each variable has on the study process. This effect was scored based on Likert's five-point scale and the responses were analyzed in SPSS. The results have been given in the following table.

Table 4: scores obtained for each of the pre-study and post-study sub-variables

Row	Gatekeeping variables based on literature review	Mean score obtained	Row	Gatekeeping mechanisms based on grounded theory	Mean score obtained
1	Selection	2.5	1	Motivation	4.5
2	Additions	1.4	2	Budget	4.7
3	Limitation	1.4	3	Experience	4.1
4	Representation	1.6	4	Embargo (factors stemming from foreign relations)	4
5	Channeling	1.3	5	Change of conditions	4
6	Formation	1.2	6	Accessibility (information and individuals)	3.5
7	Manipulation	1.2	7	Dealership (in information transfer)	2.5
8	Timing	4.1	8	Time	4.5
9	Localization	2.5	9	Personality characteristics	3
10	Integration	1	10	Systems' inefficiency	4.5
11	Ignoring	1.6	11	Disregarding the potentials	4.2
12	Omission	3.8	12	Intellectual ownership	4.1
13	Security mechanism	3.5	13	Internet issues	4.8
14	Usefulness cost mechanism	3.2	14	Professors and students' education	2.5
15	Added-value mechanism	1.2	15	Numerosity of professors' duties	4.3
16	Infrastructural mechanisms	1	16	Faculty members' weaknesses	1.4
17	Users' mutual interaction	1.2	17	Faculty members' problems	1.1
18	Edition	4.3	18	Teamwork problems	3.8
19	Legislation mechanism	4	19	Personal interests	4.1
20	Information quality	4.5	20	Solving barriers	1.1
21	Linking	3	21	Lack of interdisciplinary knowledge	2.5
22	Leadership	2.5	22	The role of relations in problem solving	3.8
23	Agency	2	23	Imperfect information	4.2
24	Liaison	2.1	24	Repetitive information	2.6
25	Gatekeeper	3.3			
26	Mobile dealership	2.5			
27	Advisors	2.5			
	Mean	2.385		Mean	3.491

The information given in the above table indicates that there is a distinct difference between the respondents' perspectives regarding the first group and the second group of the variables. A look at the mean scores obtained from the questionnaires demonstrates that the second group variables (extracted from grounded theory interview) have acquired higher scores in a more tangible manner. In ranking the variables, the information quality, edition and timing from the first group and motivation, systems' inefficiency and internet issues in the second group of mechanisms have been scored with highest ranks hence they are to be realized as the most distinct information gatekeeping factors in the study process. In finding an answer to the second question of the study, it has to be expressed that the results obtained from the variables are not identical for both of the methods and that there is a considerable difference between them. Moreover, the difference in Cronbach's alpha scores of the two questionnaires (68% and 92%) confirms this same claim.

The Third Study Question: how do the time and the quality of reaching theoretical saturation differ in the pre-study and post-study?

To answer the above question, table … can be of great help. Based on the information obtained from both of these two methods, 27 variables were defined through literature examination while 24 variables were defined using interviews. Out of these 24 variables, three were determined as repetitive in comparison to the substitute method. Therefore, 21 variables were generally defined using the second method. So, after reaching theoretical saturation, the number of variables defined based on literature review was found higher than the interview method. The number of the variables defined using literature review was 33% higher than that of the variables defined based on grounded theory (interview) method. The interviews were carried out in a one-month time span and the literature examinations were conducted in a time about two months. Thus, reaching theoretical saturation by the assistance of interview is achieved 50% faster than literature review.

Discussions and Conclusion:

The present study made use of grounded theory methodology and it was endeavored to discover the information gatekeeping in assistance of faculty members. In the opposite, the same variables and their sub-variables were extracted via literature review. The result of the two methods' comparisons in regard of this issue indicated that although there are similarities between the extracted variables inn both of the methods, there is not much of a difference evident in them. Amongst the differences observed in both of the variable groups, the simpler language and more familiar phrases in expressing the variables can be pointed out. Due to the same reason, the variables obtained from the grounded theory are more appropriate for use in such supplementary instruments like questionnaire and checklist. That is because they have been expressed by the audience and with more general expressions. On the contrary, the variables obtained from literature review are more complete but more complicated, as well, that makes it necessary to perform revisions, adjustments and redefinitions in the questionnaire. The results of the investigation of information gatekeeping mechanisms in the study process indicated that the variables defined based on grounded theory have acquired higher scores from the viewpoints of the study sample volume. In other words, in confirmation of the other obtained results, the mechanisms defined using grounded theory have been more tangible for the respondents hence they have been scored higher. In the end, it seems that both of the methods, with their advantages and disadvantages, are useful and the present study's suggestion is that they can be applied as supplements. However, the grounded theory method is the literature investigation and variables' supplementation based ontexts.

The studies by Takhshid (2009), Niazi (2011), Rahmanpour (2013), Avijgan (2012), Keshmiri (2016) and Avamaria (2013) have underlined the blending of the quantitative and qualitative methods in confirmation of the results of the present study. El-Hussein (2017) knows post-study method as the one featuring pitfalls and this is in consistency with part of the present study's results. Thurman (2018), as well, emphasizes on the simultaneous use of quantitative and qualitative methods and a mixed method composed of both but Giles (2013) believes in literature review before initiating a study.

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CONTEMPLATION ON BERG ARGUMENT IN DE RE

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Abstract. Burge has provided a description of two concepts of *de re* and *de dicto*. He proves that beliefs "*de re*" are so fundamental that without them the understanding of language and thought would not be possible. Explaining the mathematical propositions is one of the difficulties of his theory. Understanding some mathematical *de dicto* beliefs are such that the *de re* propositions are based on them. In order to get rid of this difficulty, by extending the epistemic meaning of *de re*, he categorizes the purely mathematical beliefs under referential ones in spite of the fact that it seems not to be so. In a critique of Burge's analysis, Azzouni believes that one can adhere to all premises of Burge argument but deny the main condition of *de re* beliefs, namely having references without committing any contradiction. In this article, we have tried firstly to answer Azzouni's criticism then we have analyzed Burge's working procedure. Toward the end, this article has demonstrated that, Burge's perspective about comprehension of arithmetic propositions is not exact.
Keywords: de re, de dicto, Burge, Azzouni, language.

De re/de dicto distinction in Burge's point of view
In an article entitled "belief *de re*" Tyler Burge has provided a description of two concepts of *de re* and *de dicto*. After criticizing the criteria of Russell and Quine in the distinction between these two concepts, he first brings up a semantic distinction and by generalizing it offers an epistemological distinction of "*de re*"/"*de dicto*". In this article, he proves that firstly, this distinction is fundamental in the field of knowledge; and secondly "de re" beliefs are so fundamental that the understanding of language and thought would not be possible without these beliefs.
Burge puts the semantic distinction of "*de re*"/"*de dicto*" as follows (Burge 2007, p. 68):
" An attitude is de dicto if it is completely conceptualized. An attitude is de re if it has content that is not completely conceptualized(and, it should be added, a not completely conceptualized element in the content succeeds in referring to a re). That is, the content contains a demonstrative or indexical element successfully applied to a re. The application of the demonstrative or indexical element is the element in the content that prevents the content from being completely conceptualized. This element is formalized by a free variable contextually applied. When successful, such applications are to res".
For example:
1. Ercut believes the proposition that an individual is a spy. (*de dicto* Belief)
2. It is a solitary person that Ercut believes to be a spy. (*de re* Belief)