



RESEARCH ARTICLE

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## ANALYSIS OF THE INFORMATIONAL ENVIRONMENT IN THE BRAZILIAN PATENT PROCESS

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### ABSTRACT

A patent is an important tool for the inventor as it gives him a temporary monopoly of exploitation due to the novelty achieved during research for the invention. Currently Brazilian inventors have 30,000 applications at the INPI, which grants about 900 patent applications per year filed. This gap between patent entry and conclusion occurs largely due to a slow system designed just to coexist with other protection models. This research aimed to analyze the Brazilian patent process, adopting the information perspective observing if it is responsible for the leakage of patent applications from Brazil to abroad. A qualitative and quantitative research was adopted, with a questionnaire introduced via web, as well as a semi-structured interview script, aiming to identify what the inventors perceived in the informational environment of the INPI. It was possible to identify that there is a gap between perception and expectation of the information coming from the INPI to the inventors, generating a noise throughout the patenting process. The interviews carried out corroborate the quantitative questionnaire as they showed discontent regarding both volume, quality and speed of the information presented by the INPI. These data are sufficient to evidence how poor is the Brazilian patent process from an information point of view due to the inventor's expectation becomes very far from the perception after long years of waiting.

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## INTRODUCTION

According to the World Intellectual Property Organization (WIPO), Brazil currently grants a total of nine hundred patent letters from Brazilian inventors, and this number corresponds to only 3% of the total applications filed annually with the National Institute of Intellectual Property (INPI). Furthermore, there are three factors that influence the inventors decision-making process regarding patenting according to Helpman (1993): cost, time and informational perception. This last factor will be the core of the present work. According to Taylor (1974), the central problem related to a good or service consumption is that the information or the lack of it produces the risk perception or uncertainty to consumer, leading him to think about the near future and its consequences. The patent is a claiming institute of the invention (BRASIL, DIRPRA, 2017, p. 8).

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It gives the inventor an opportunity for exclusivity during the exploration period, inhibiting the copy market while congratulates the creator on R&D efforts and investments. Granting of a patent is an administrative act aiming to stimulate the technological innovation of the country, expanding its borders and qualifying its inventors. Meanwhile, government agencies can be a difficulty in reporting information. Currently, according to Alves (2015), the average time for granting a patent in Brazil is between nine to eleven years depending on the volume of process analysis and reanalysis. According to the pending time still, there is a negative impact on the knowledge process and economic evolution that longer waiting periods lead to greater losses for its inventors.

**Information Seeking Process (ISP):** Among patenting areas academic research, Information Seeking Process (ISP) on customer behavior regarding the process of buying services, both bureaucratized and in the general market, the texts show several distinct learnings that can be synthesized in order to

expand coherence on the subject, which enhance the relevance of the research, on this account, according to Moura, Paes and Faria (2014), patents are important parts that the market has to generate wealth and borders for the country. Herman and Locander (1979) and Kuhlthau (1991), while, bring the expectation of the information search process, and the consumer's response in understanding this search. Both works explore the perceptions of anxiety and risk reduction in the self-confidence of the information gathering process. Parasuraman *et al.*, (1985) present that an important factor to ensure good quality in service is that consumers perceptions exceed their expectations. Other authors, such as Germano and Takaoka (2012), indicates that the information quality matrix contribute to the consumer feeling supported by the services provided. In order to summarize the theories in question, it can be understood that a periodic assessment of consumers' aspirations and expectations can improve satisfaction with a product or service (PALADINI, 1995). This research aims to synthesize the coherence of these areas in order to form a new direction in the patent process and its search for the product consumer, analyzing the gaps regarding the informational dysfunctions of the INPI patenting system.

## Patents

Patents are instruments provided administratively by the INPI, following the Intellectual Property Law (LPI), number 9279/96, which was also promulgated during the Fernando Henrique Cardoso administration in order to maintain intellectual production within the country, obeying some Treaty of Madrid, signed by Brazil on April 9, 1978 (WIPO, 2017). The patent allows the inventor to benefit economically from his invention. Patents have several advantages of protecting their holder such as exclusivity and economic benefit but addressing the uncertainty in the patent granting process is a very important matter to consider when conducting patent studies. The patent system uncertainty is mainly inherent in two variables: the degree of abstraction of what is being protected and the degree of informational provision that the application for protection provides. These two variables are not controversial, as a patent can be properly abstracted, but the scope can be very detailed and well-written to the point that it deserves protection (HYLTON, 2016). In addition, Hylton (2016) also states that assumptions of uncertainty vary with each product or process, including another concern point, the evaluation of the patent application. The patent process has a time to consider in Brazil. There are several steps to obtain the Patent Charter which must be obeyed and the process, according to Alves (2015). From about six years in 2003 going to an average of eight years in 2008, hence the average of eleven years in 2011, due to rapid technological lag on results calculation faced by the National Institute of Intellectual Property.

## Information Seeking Process and patent uncertainty:

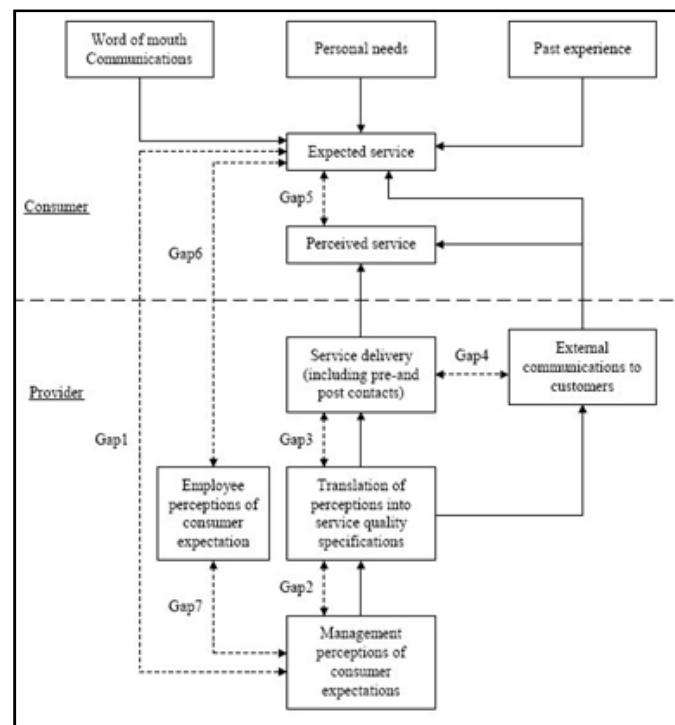
Among the academic research in the patenting areas, Information Seeking Process (ISP) and, customer behavior regarding the process of purchasing both bureaucratized and general market services, the texts indicates several distinct learnings that can be synthesized in order to broaden the coherence on the subject, which increases the relevance of the research, in addition according to Moura, Paes and Faria (2014), patents are important parts that the market has to generate wealth and borders for the country. Herman and Locander (1979) and Kuhlthau (1991) works meanwhile

brings the expectation of the information search process and the consumers response when understanding this search. Both explore the perceptions of anxiety and risk reduction in self-confidence in the obtaining information process. Understanding the search for information is important because it generates anxiety in researchers and can often lead a research to fail, also lead to impatience, low concentration and even depression (NAVEED; AMEEN, 2016). A patent process can take years and the first progress information can take up to a year to reach the inventors, creating, uncertainty about the success of the project due to lack of information.

**Keynesian uncertainty and the patent process:** As evidenced by Keynes (1995), the uncertainty is that decision making without all available adequate information means that the decision maker has to assume a number of factors before awaiting the outcome of his decision. Like other processes, the patent depends on a number of factors that generate uncertainty in presenting the project to the INPI. Such a decision to submit a process for the INPI to evaluate should be made after a set of information has been received from various locations, a pre-search to see if something similar already exists should be done, the patent agent should check if there is something in his customer database that is similar to and also a search in the information networks should be done in order to provide maximum information prior to INPI deposit. Other authors such as Hylton (2016) conveys information about patent uncertainty and its risks to technological evolution and its inventor protection. Troy and Werle (2008), also highlights two types of process uncertainty: strategic uncertainty and fundamental uncertainty, widely discussed in academic standards. In limited rationality defined by Simon (1955), no decision maker defines a process in such a way as to have all the information in front of the researched process before the decision is made. This concept demonstrates the importance of information in the patent process to minimize unnecessary risks and costs when filing the patent with the INPI.

**Customer Perception (Patent applicant):** Some marketing concepts are relevant when synthesizing and comparing all these steps in the inventor's view. For example, the Transaction Utility Theory (TUT), which derives from Kahneman and Tversky's Prospect Theory (1999), can be used for this. Described by Thaler (1985), TUT shows that consumer behavior depends not only on the price perceived by products or services, but on a convergence between the selling price and the price that the consumer can perceive of the proposed service. The concept concluded by Thaler (1985) that the satisfaction point is with those who are happiest with the transaction and that the consumer's search for advantage in buying makes him walk the path of the search for information (prices and places) as well as for the price and perceived cost of the product or service offered. There are two important consumer models and their processes for acquiring a service or product, as Kahneman (1999) proposes in his research. The first system is intuitive, emotional, and reactive automatically to make decisions without thinking about a second; The other system is considered slow as the consumer analyzes situations and circumstances before deciding. In the patenting proposal and the informational perception, it is possible to identify that the presented theory is valid when understanding that the price to apply for patent in Brazil can be expensive - in the inventor's view - before a service without adequate time and without the minimum necessary information provided by the INPI. In addition, the process must be a slow to define, as each

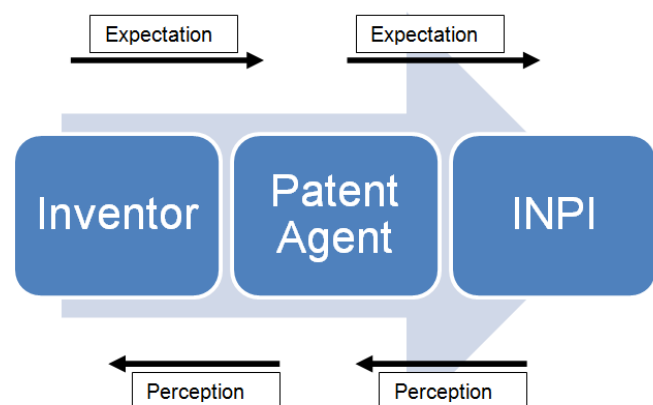
information must be properly analyzed to ensure the rights of consumers of the service after concessions. The gaps model was developed by Parasuraman *et al.*, (1985) and aimed to identify inconsistencies in perceptions and expectations in service performance, assisting in guiding people on how to manage quality within their business according to each gap. Figure 1 presents at the top the expectations and needs of customers; the bottom shows the phenomena of the service provider; and finally, the customer receives the service and has the perception of the entire requested component, giving a quality to the technical solution process received.



Source: Adapted from Parasuraman *et al.*, (1985)

Figure 1. Quality of Service Model

Figure 2 proposed model demonstrates the information flow, the absorption of perception and the generation of expectation in the process. When generating a product, the inventor has an expectation of information coming from the patent agent, with frequent reports seeking the objective, which is the Patent Letter. Upon receiving the inventor's needs, the patent agent provides the inventor feedback on how the process works and his entire perception of the INPI informational environment.



Source: The Authors (2018)

Figure 2. Information process at INPI

The patent agent processes customer needs and delivers the entire process so that INPI can process it for the realization of the clients' goal, but the INPI provides sparse and irrelevant information during the request review period. The moment when the information becomes important to the inventor is after the technical examination of the request, because at that moment the relevance of the feedback is high, being the examination performed in the request. "Quality is an elusive and indistinct construction" written by Berry, Parasuraman and Zeithaml (1985), and quality of service is an indispensable for the evolution of a business. As described in the article, when a consumer is about to purchase an item, he often judges style, durability, color, label, feel, package and trim. However, when capturing services, there are fewer tangible items for the consumer. Quality is a comparison between expectation and performance, which is perceived between the differences of what the consumer expects (expectation) versus what he found in the service offered. There are those who define quality as conforming to needs (GARVIN, 1992), doing it right the first time (CROSBY, 1979), but when discussing information, it is not just how it is presented but how.

**Information Quality Matrix**

According to Madnick *et al.*, (2009), although no consensus has been reached on the distinction between the qualities of information and data, one can use the quality of the data to refer to the technical values undertaken. According to Kahn and Strong (1998), quality information is information that meets the specifications or requirements necessary to meet users' expectations. The information quality matrix, figure 3, aims to synthesize data to guide whether the information presented is in accordance with the user's expectations regarding a service or product, adding a technical character to daily information needs.

Category - Intrinsic	
Accuracy	Accuracy level of information received
objectivity	Objectivity level of information received
credibility	Level of credibility and assertiveness
reputation	Reputation level of the organ
Category - Aecessibility	
Accessibility	Ease / difficulty of access
Safety	Information security level
Category - Contextual	
Relevance	Level of relevance to the inventor
Earned Value	Adds value to the project
Temporality / Opportunity	If the information comes in a timely manner
Integrity / Perfection	If the information is integral
Appropriate amount of information	Appropriate data volume
Category - Representation	
Interpretability	Ease / difficulty in interpretation
Ease of Understanding	Ease / difficulty in understanding
Concise Representation	If information concisely represents reality
Consistent Representation	If information consistently represents reality
Easy handling / operation	If the information can be easily operated by the inventor

Source: Traduted from Germano and Takaoka (2012)

Figure 3. Quality Matrix

Berry, Parasuraman and Zeithaml (1985) model describes some dimensions in service quality and their implications for the future, addressing a number of important factors in the quality awareness process. Among the propositions of the

study, one describes the space between the specific and necessary gaps for expectation versus perception and how it can affect quality from the consumer's point of view. As this blank space is being researched in this paper, this perception of informational quality in the national process compared to the consumer's expectation in obtaining the services.

## RESEARCH METHODOLOGY

The methodology for conducting this research dealt with qualitative and quantitative data, and the instrument used for data collection was the questionnaire adapted from the SERVQUAL model, published by Parasuraman *et al.*, (1985).

As described by Gil (2008), research can be classified according to its general objectives into three types: exploratory, which is research that seeks to increase the familiarity with the problem, making it more explicit; descriptive, which are research whose objectives are to describe certain characteristics of a population and try to relate the variables arranged in the problem; and explanatory: researches that identify contributing factors to the occurrence of phenomena explaining their reason. The model used in this research is the exploratory, as it fits better with the qualitative understanding of the project. All data from the questionnaire were compiled and analyzed using a technique called content analysis. Content analysis was developed in three stages: pre-analysis; material exploration and data processing; inference and interpretation (BARDIN, 1979). The research sample was based on national or international inventors who obtained patents granted first in Brazil and later abroad. Initially, local inventors were approached; then, people referred by these first interviewees (snowball) were sought. Using tools such as WIPO's PatentScope, European Patent Office's (EPO) EspaceNet, and Google Patents, the subjects were identified by classifying them as having patented in Brazil, first and then abroad, regardless inventor's nationality. As a phenomenological research, as described by Siani, Correa and las Casas (2016), this type of study has gained recognition as a qualitative research approach, applicable to the study of important phenomena from different fields, including Administration, having as the script one of the central procedures for the research from the point of view of a social reality of the subjects.

Interviews were conducted, and data were collected on the patenting phenomenon first in Brazil, and later in other countries, in order to obtain a better process built on the informational environment. The analyzes were performed in three steps, according to the Bardin (2009) content analysis methods: pre-analysis of the material, when the objectives are formulated, the dimensions and directions of analysis are checked, following the entire structure of document choice and preparation of materials, and also when the cuts and categorization of the materials are made; categorization, when the separation of the registration unit has as its main description "Lack of information in the patent process", and the sub-records of the process are "Speed of information", "Quality of information in the informational process in patent applications" and "Difficulties in obtaining order information"; Finally, the exploration of the document, which was based on the administration of corpus techniques, classifying and demonstrating on a display the volume of words used and their associations with the related theme. In a limited universe sense, Bardin (2009, p. 123) states that "not all analytical material is likely to generate sampling, in that case it is better

to abstain and reduce the universe itself (and therefore the scope of the analysis) if it is too important ". Following this understanding, and using a reduced universe, the information and data received were cross-referenced with the presented theories in order to obtain a conclusion about the possible results that could be presented. For the production of a more organized and dynamic content, a coding was made forming units of record (UR), in order to form a structured analysis of the research. During this research, words were categorized by three macro sectors, such as quality, speed and difficulty in obtaining. Schoroeder, Ferrari and Maestrelli (2009) indicate that in the concept's construction, they are fundamental for both the theoretical research framework and the treatment, being the words an important component for the research interaction with the reader. Selltiz *et al.*, (1997), mention that the concept is perceived through witnessed events and recommends that they be defined abstractly, giving the general meaning of what should be given in the presentation of the studies.

In order to allow a proper understanding of the text, it is important to define the operational terms searched, also describing the most important research categories:

- **Dysfunction:** is the degree attributed to significance, which, from a subject's point of view, expresses preference over a total set of characteristics, adhering to the ranks and showing preference over the same set;
- **Informational Dysfunction 1:** gap between informational factors valued by customers and perceived services;
- **Informational Dysfunction 2:** Space between the inventor's perception and the perception of the INPI's service from the perspective of the patent agent, demonstrating the gap between the operation and the invention;
- **Informational Dysfunction 3:** Gap between perceptions of post-delivery services after completion of patent analysis, demonstrating the difference in informational perception of each agent;
- **Patent:** final product, which is being studied, which gives its owners competitive advantage and temporary monopoly;
- **Competitive function:** similarity function between the competitive factors that are expected by the inventors (clients) and the services offered by the INPI;
- **Intrinsic:** presented category that deals with the quality of a service, so that the information is presented in order to indicate the assertiveness and the reputation of the data (GERMANO; TAKAOKA, 2012);
- **Accessibility:** category that deals with access to information of the presented patent grant process (GERMANO; TAKAOKA, 2012);
- **Contextual:** category that portrays if the presented context is interesting, if it has added value and if the information is appropriate to the project need (GERMANO; TAKAOKA, 2012);
- **Representation:** category that portrays the interpretation, conciseness and manipulation of information received, in order to operationalize the

data received in information (GERMANO; TAKAOKA, 2012);

- **SERVQUAL:** tool designed by Parasuraman *et al.*, (1985) comparing delivered quality and expected quality;
- **Quality of information:** one of the foundations for the survival and greater competitiveness of organizations. Thus, in recent years, studies and research on this subject have been expanding, for example, on how to evaluate, measure and improve the quality of information, enabling organizations to use and make it available more efficiently and effectively; has been the subject of research by several authors (CALAZANS, 2008).

The population universe of quantitative research was composed of fifteen INPI inventors / clients who filed patent and protection applications and went through patenting processes. Quantitative research was also done with two INPI-regulated patent agents, who are the interlocutors between the inventors and the INPI. The population universe of qualitative research was formed by four inventors / clients who already have patents registered both in Brazil and abroad. The research was sent via email to a group of local inventors and posted on the web for completion by people who have patented an invention. Among the eliminatory questions, the placement of the process number or patent received was fundamental to identify any process outliers. All numbers have been checked as documents are available on the INPI website or via Patent Scope (WIPO).

Three samples were obtained from the information search:

- Sample 1 (quantitative), referring to the group of inventors who have patented or applied for patents to the INPI;
- Sample 2 (quantitative), referring to patent agents who apply for and make the bureaucratic filings requested by the inventors;
- Sample 3 (qualitative), referring to inventors who have patented in Brazil and abroad and have knowledge in both processes.

In all cases there were clients who responded as to expectation (Iexp), with a total of fifteen respondents, and also as to perception (Iper), with a total of the same fifteen who answered.

**Obtained results**

The median table (table 1) was obtained from the questionnaire of sixteen questions - adapted from SERVQUAL - applied, according to the quality of service model and tabulated based on the patent agent with his expectation and perception, and the inventors and his expectation and also perception as well.

**Table 1. Medians**

		Avg	Standar Deviation	Median
GAP1	Expectation from client	4,37	0,8	5
	Perception from client	2,81	0,65	3
GAP 2	Expectation of inventor	4,37	0,8	5
	perception from patent agent	2,87	0,71	3
GAP 3	Perception from patent agent	2,87	0,71	3
	perception from invetors- client	2,81	0,65	3

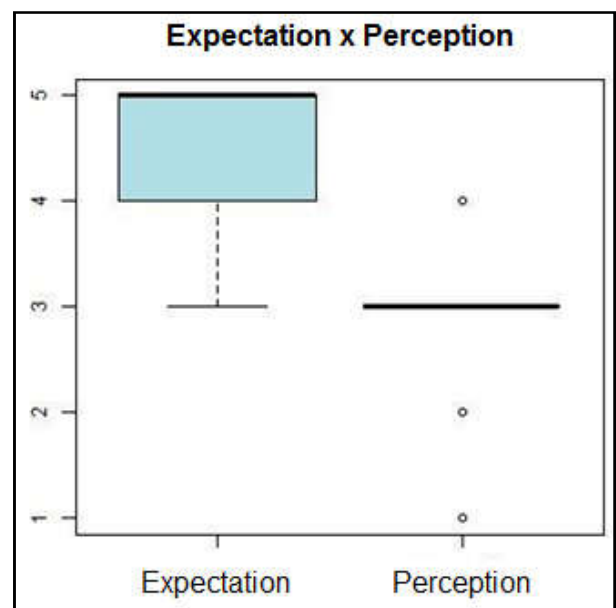
Source: Reseach from authors (2018)

**Quantitative Results Analysis:** In the Gap 1 Sample Adherence test which analyzed the expectation of the inventor (client) versus his perception (informational dysfunction 1), the chi-square test results - using the data compiled in table 1 and evidencing a significance 0,05 level – dispose a different distribution and the average on the answers for expectation and perception were 4,3 and 2,8 respectively. It can be stated based on Mann-Whitney test that the difference in responses is statistically significant (p-value <0.001), the perceived information therefore differs from the client’s expectation. Chi-square test and the G test results indicate that there is no dependence between customer responses, i.e. the median value of the response in relation to expectation is independent of the perception response. In the tests presented, the consumer's understanding of having a higher expectation than the perception, comes along with what Kuhlthau (1991) presents, that in the search for information, the client tries to reduce the risks and uncertainties of the purchase or acquisition process. It can be observed that if the customer had more information about the process and its dynamics being informed of the wait period, he would likely not choose the national system to patent his inventions, but would rather go to other countries, as discussed in the qualitative research presented. With the attainment of this large difference between customer expectation and perception, procedural uncertainty as presented by Hylton (2016), is evidenced, because qualified information would greatly reduce the difference in this gap, but for now it brings the inventors a lengthy process without the accurate information.

**Table 2. Gap 1 tests results**

Test	Statistics from the test	p-value
Mann - whitney	23	<0,001
Qui-square	2,59	0,99
G	2,67	0,99

Source: Research from authors (2018)



Source: research from Authors (2018)

**Figure 4. Customer responses distribution**

From obtained results, Hb0 hypothesis is not rejected because of the discrepancy between what the customer expects and what is perceived in the informational environment.

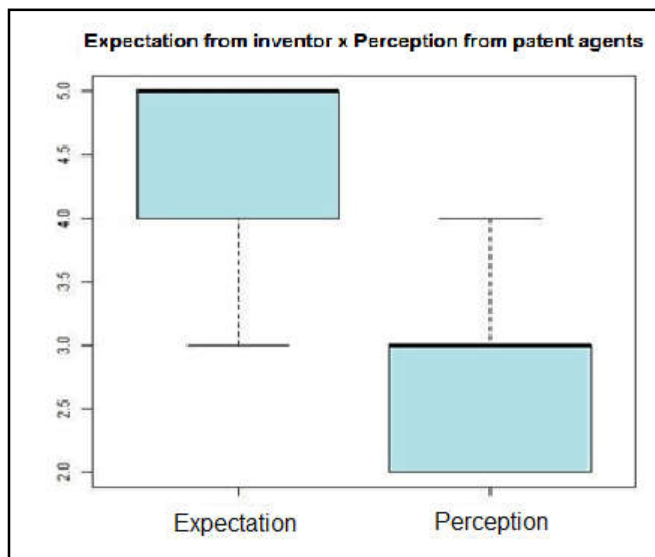
**Hypothesis Hc0:** gap 2 fails the inventor's expectation of patent application demands and the perception presented by patent agents.

In the Gap 2 samples Adherence test, the inventor's expectation versus the patent agent's perception (informational dysfunction 2) were analyzed, since there are differences between the inventor's expectation of information compared to what the patent agents perceive from the INPI. Adopting table 2, the tests showed that the inventor's expectation is high in relation to the patent agent's perception, since most responses are between 4 and 5, while the agent's responses are between 2 and 3. This is a significant difference according to the Mann-Whitney test (p-value <0.001). The chi-square test shows that the responses of inventors and agents are independent. This result is also confirmed by the G test; thus, the inventor's expectation is independent of the patent agent's perception.

**Table 3. Gap 2 tests results**

Test	Statistics from the test	p-value
Mann - whitney	27	<0,001
Qui-square	3,83	0,99
G	3,84	0,99

Source: Research from authors (2018)



Source: Research from authors (2018)

**Figure 5. Inventor's Expectation x Patent Agent Perception**  
Source: Research from authors (2018)

Kahneman and Tversky and Thaler (1985) understands that differentiation values for the acquisition of a product or service are based on a convergence between perceptions, and, by that, the patent is expensive and with bad information services in Brazil, showing no convergence so that the consumer can select the INPI as a suitable place to consume the service. Also, according to Thaler (1985), the pursuit of satisfaction in consumption makes the customer tread the search for adequate information, as much as the price as the perceived cost. But consumer models are different from those dealt with in theory, where many inventors seek only the result (Patent Letter). From the obtained results, the hypothesis Hc0 is confirmed since there is a gap between the expectation of the inventor's information and the perception of the agent. Hypothesis Hd0: Gap 3 occurs in the return of information from the INPI, at the crucial moment of the claim, when the perceptions of the patent agent and the inventor converge. There is a failure in the

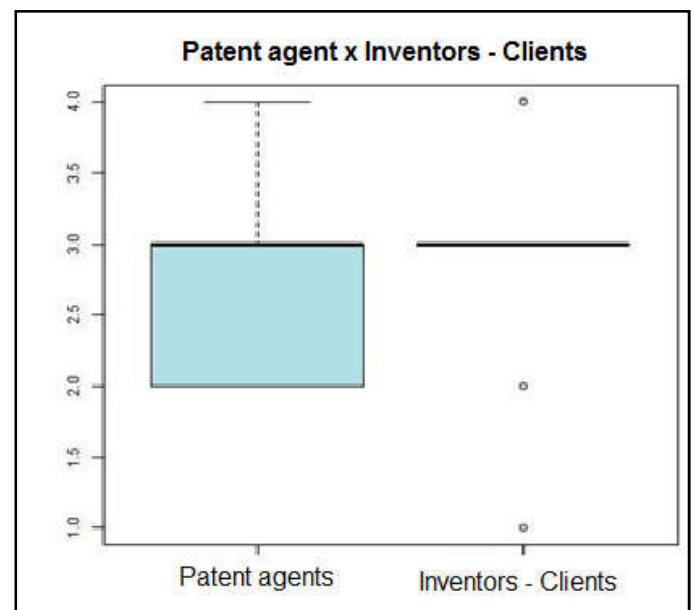
perception of the agent against the perception of the inventor, with the perception of the agent being the highest median. The last hypothesis is presented in INPI's return of the information, due to during a period of analysis of the patent application the information perceived by the inventor and the patent agent converge with each other. At this point, the perceptions of the information received are different, so that the inventor is interested in the product and the agent is interested in how the project can be continued. The response medians of both patent agents and inventors are 3, although agent responses have varied more. According to the Mann-Whitney test there is no significant difference between the perception of patent agents and client inventors. Like the chi-square test, the G test, indicates that the responses of patent agents and client inventors are independent; thus, there is no association between their perceptions

**Table 4. Gap 3 tests results**

Test	Statistics from the test	p-value
Mann - whitney	127,5	1
Qui-square	1,29	1
G	1,30	1

Source: Research from authors (2018)

From the results obtained, the hypothesis Hd0 is rejected, because the medians and perceptions are the same: the patent agent does not have a higher median than the inventors of the information received from the INPI after the return of the process. During the interviews, we sought to highlight what consumers of INPI services understand as perception versus expectation of information attributed by the agency. The following questions were asked for this purpose: What is the observed dysfunction? Which of the gaps has the highest median? What is the median of informational dysfunction (gap 1)? What is the median of competitive dysfunction (gap 2)? What is the median of informational dysfunction (gap 3)?



Source: Research from authors (2018)

**Figure 6. Distribution of responses regarding perception**

The research tested the following hypotheses in order to meet the requirements of the questions: Ha1 - The lowest median gaps are 1 and 2; Hb1 - Gap 1 fails to perceive customer expectations regarding perceived information quality, which is low, i.e., there is a difference between expected and perceived

Table 1. Summary Table

ATTRIBUTES	1st Interview	2nd Interview	3rd Interview	4th Interview
<b>Quality</b>				
Q.1 – Objective	“Too objective information makes understanding difficult”	“Information is good”	“Always objective information”	N/A
Q.2 - Ample	“Empty and purposeless information”	“Confused and out of context”	“Usually a lot of irrelevant things”	N/A
Q.3 - Functional	“It has nothing to do with the product”	“Compared with unimportant patents”	“There is always more information than you need”	N/A
Q.4 - Assertive	“Comply with protocol”	N/A	“They send everything together”	N/A
Q.5 - Simple	N/A	N/A	“Written in a way that makes interpretation difficult”	N/A
<b>Velocity</b>				
V.1 - Slow	“It took [sic] 9 years for the first news”	“Took 8 years until the information arrived”	“They take an absurd amount of time to return”	“In 4 years, I only paid 4 annuities”
V.2 – Fast	“I'm going to research a faster-pace country”	“We have no idea regarding the process progress”	N/A	“Nothing happen over 4 years”
V.3 – Agile	N/A	N/A	N/A	“I chose to reverse the path”
V.4 – Concise	“We are a bunch of clowns for receiving this information in 9 years”	N/A	N/A	N/A
<b>Difficulties</b>				
D.1 - Confused	“Unprepared Agents”	“Out of context”	“It's hard to figure out what to do”	N/A
D.2 – Position	“It takes 9 years”	“It took 8 years for the information to arrive”	“Takes a long time...”	“Waiting 4 to 5 years for an analysis, I chose to streamline the process in another country”
D.3 - Progress		“Compared to the US where I have an order made 12 months ago and it has already been evaluated”	“In other systems it never went beyond 4 years”	“It was 4 years which I paid 4 annuities”

Source: Research from authors (2018)

service; Hc1 - gap 2 fails the inventor's expectation of patent application demands and the perception presented by patent agents; Hd1 - gap 3 occurs in the return of information from the PTO at the crucial moment of the claim, when the perceptions of the patent agent and the inventor converge; There is a failure in the perception of the agent compared to the perception of the inventor, with the perception of the agent being the highest median. In the applied methodology, a qualitative and quantitative research model is presented, with the distribution of a questionnaire via Web to inventors who have already made use of the Brazilian patent grant system, with the obligation to put their number of processes for verification, sent through of two patent agents known to the author. The qualitative research was conducted with four inventors who have already made use of the international patent system and who could present their perceptions of the national and international scenario.

**Qualitative Results Analysis:** After transcribing the interviews with the four inventors who had the experience of following the patenting process in Brazil and abroad, it was possible to tabulate a series of simple registration units in order to identify a perception of the informational environment of the INPI. The Registration Units were divided into subcategories - "Quality", "Speed" and "Difficulty" - and aimed to identify the experience in both environments, in order to corroborate the quantitative research, as shown by the compilation in the Summary Table of Test Results. of gap 3. The summary table (1) presents sufficient data to corroborate the inventor's interest in patenting abroad primarily, and then to repatriate the process to Brazil via the Patent Protocol (PCT), making the process more agile with an information and security system higher level. The registration units extracted from the interviews corroborate the qualitative research presented, demonstrating the difficulty in the informational level and in the general levels of patenting.

## Conclusion

This research aimed to analyze the informational environment of the Brazilian patent process through a quantitative research that demonstrated the differences between the expectation and the perception of the information that the client / inventor has during the patenting process. To this end, it relied on reputable authors in the ISP areas, uncertainty, patents and transaction theories that address expectations and risk mitigations in the search for information. The research was able to reach the objectives to the point of identifying informational gaps between perception and expectation, which may impact the process of choosing the patenting place, showing that the expected information is different from the perceived information. Questionnaires have been applied to patent agents to understand how the information environment is from the point of view of such an important professional in the patenting process. The inventors were interviewed quantitatively, so that the gaps could be highlighted numerically. Qualitative research was also used to support the conclusion that there is, yes, a difference between patent processes made abroad and those made in Brazil. Regarding the question that guided the research, it could be identified that the information is not only responsible for the migration of the process abroad, but is one of the factors, since the processes made abroad have much more information and much more agility when compared. to the Brazilian patent system. During the interviews, it was possible to extract information that inventors who migrated to the patenting process in another country obtained the patents in a much shorter period than if they had followed the procedures in Brazil through the PCT, obtaining the patent in the country. much faster than by Brazilian roads. Some limitations were found during the research because not all interviewees wanted to expose their patents, even if they were filed on the Internet via Patent Scope or INPI. There is also a subjectivity when analyzing only the

information coming from the INPI: interviewees often ended up putting all their anguish over the delay of information return by the INPI and the cost of patenting, so it was necessary to interrupt interviews by several times in order to correct its course. Finally, the research leads to the recommendation that, for future studies, an analysis of patents migratory movement from third economy countries to first economy countries be made, returning later to the countries of origin, via PCT.

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