Research Article

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Users' perception of satisfaction of the eletronic information system – SEI in the Instituto Federal de Rondônia

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ARTICLE INFO	ABSTRACT
	Public institutions in Brazil have undergone a major process of digitization of their procedures and services following the precepts of Industry 4.0. In this scenario, Instituto Feral da Rondônia - IFRO sought to increase its efficiency with the adoption of the Electronic Information System - SEI, adopted in 2017. The following investigation sought to know the perception of satisfaction of users of the system through the adapted application of the Model of Technology Acceptance (TAM). This is an exploratory investigation of a quantitative nature that sought to validate or reject hypotheses through the application of a questionnaire. The collected data showed that the various analyzed constructs had a positive relationship with each other, making it possible to validate all the research hypotheses. It was concluded that IFRO employees perceived the usefulness of the SEI and that this perception significantly influenced the intention to use the system and the quality, agility and planning of work in the institution. **Keywords:** System, technology, models, TAM

INTRODUCTION

The technological advances of Industry 4.0 have brought new paradigms to companies and public institutions where products and services have begun to move in a manner aligned with sustainability. For Pereira & Simonetto (2018), um of the concepts of industry 4.0 is the social responsibility of the company. Aligning with this paradigm, according to Andrade *et al* (2018), "the term industry 4.0 refers to the union of a set of technologies that build a virtual environment integrated into a physical environment to give more agility to decision making".

The IFRO is a Brazilian Public Institution of technical and technologist education focused on teaching, research, and extension and which is part of the Federal Education Network of Brazil. It is a new 12-year-old institution that has undergone several internal changes, such as digitizing its processes and adopting administrative systems, support for management, and decision-making. In the context of this technological evolution is the adoption of the Electronic Information System - SEI for the

management of the administrative processes of the institution. The SEI was developed by the Regional Electoral Court of the 4th Region (TRF4) to promote administrative efficiency through the management of electronic documents. In 2017, IFRO, through Ordinance No. 1,420 of July 31, 2017, decided to establish the SEI as the official system of management of electronic processes and documents.

The research aimed to know the satisfaction and forms of interaction of IFRO employees with the SEI, in addition to responding to pre-established hypotheses through the application of the Technological Acceptance Model (TAM). Specifically, the research seeks to know the perception of SEI users regarding the ease of use of the system and its usefulness in institutional activities, besides knowing other variables that may have a positive or negative impact on the use of the Sei in the institution.

The SEI has been used by IFRO effectively since 2017, however, despite being in use for five years, there has been no research that seeks to know the overall satisfaction of users of the system and how they accept the technology implemented.

Taking note of this reality can contribute to the decisions of managers regarding the improvement of the system in the search for improvements in administrative procedures in the institution.

Technology acceptance models

When talking about information systems and technological solutions, it is important to highlight the discussions and studies on users' acceptance or rejection of these tools and which variables interfere with these results. According to Davis *et al* (1989), "researchers need to better understand the reasons that make people resist the use of computers to design practical methods to evaluate systems and improve user acceptance."

Davis *et al* (1989) proposed the technology acceptance model (TAM). The objective of this model is to evaluate the acceptance of technology through two pillars: perceived utility and perceived ease of use. This model was adapted from the Rational Action Theory (ART). Pereira & Simonetto (2018) defines perceived utility is the user's subjective probability that using the system will increase their work performance within an organization. Perceived ease refers to the degree to which the user expects that the use of the system does not imply effort.

Moreover, for Silva & Dias (2007) the TAM model still evaluates the dimensions of attitude and behavioral intention, both of which are influenced by both perceived ease and perceived usefulness. The attitude indicates how the user behaves and the motivation to use the system. Behavioral intent shows the intention to use the system in the future, which will determine the actual use of the system.

For Silva *et al* (2008) the TAM model, because it has behavioral characteristics, can only evaluate issues directly related to the user and their perceptions about the use of the system and, therefore, the constructions should be developed to capture personal opinions, allowing the perception of the reasons for non-acceptance to correct the implementation failures. **Figure 1** shows the relationship between external variables, perceived utility, perceived ease of use, and intent to use a system and their impact on consumer behavior when deciding whether or not to use a system.
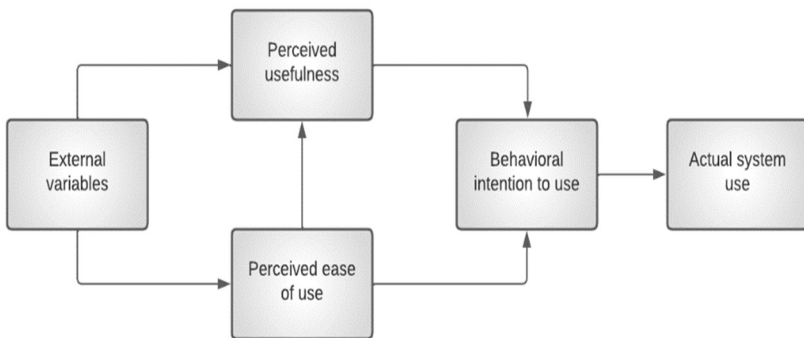

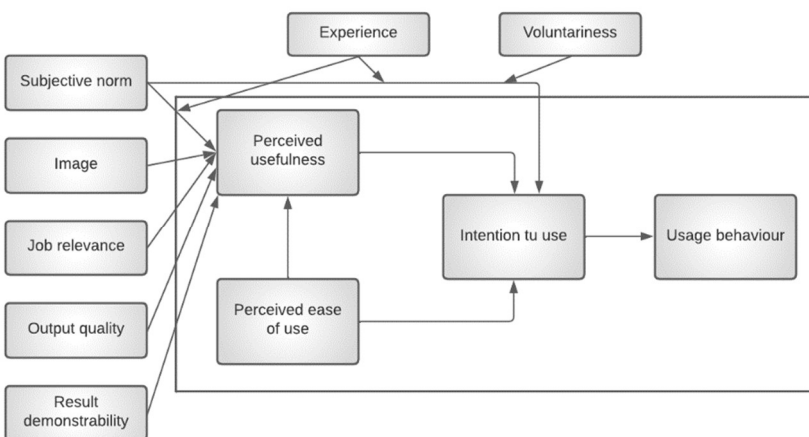**Figure 1.** Technology Acceptance Model (TAM)

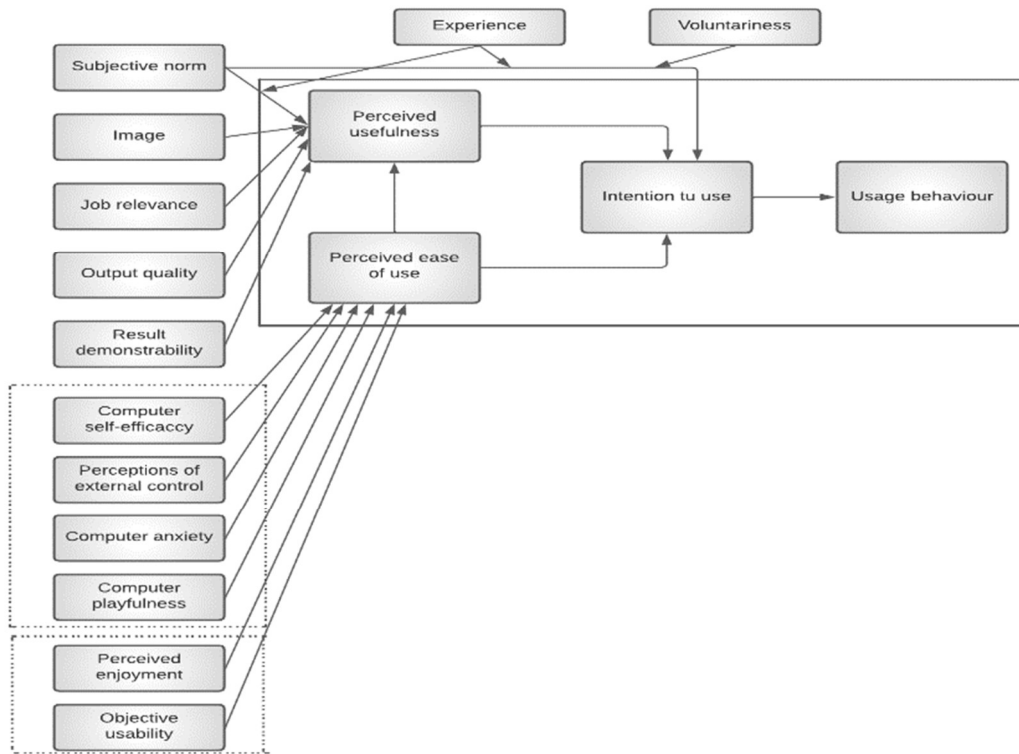**Figure 2.** Technology Acceptance Model (TAM 2)

Figure 3. Technology Acceptance Model (TAM 3)

Venkatesh & Davis (2000) contributes to the improvement of the TAM model, proposing a new representation of the model with the inclusion of some external variables, such as experience, subjective norm, volunteering, image, relevance to work, quality of delivery, and demonstration of results. **Figure 2** shows the representation of the proposed model known as TAM 2 with the inclusion of external variables.

Venkatesh & Bala (2008) proposed a model adapted to the initial models and Davis *et al* (1989) and Venkatesh & Davis (2000) where external variables were included that determine the construction of perceived ease. **Figure 3** shows the model proposed by the authors known as TAM 3.

RESEARCH METHODOLOGY

The research was supported by an exploratory quantitative study with the application of a questionnaire to the employees of all IFRO units, to understand how they interact and accept the use of the SEI.

For Camarinha *et al* (2020), "the methodological options are one of the most relevant decisions since they outline the expected results and restrict their clarity and accuracy".

According to Dalfovo (2008), "the quantitative studies are guided by a research model in which the researcher relies on conceptual reference tables as well structured as possible, from which he formulates hypotheses about the phenomena and situations he wants to study".

For the construction of a conceptual model, some concepts taken from the literature as well as their authors were listed in **Table 1**.

Table 1. Reference table

Constructs	Definition	Authors
Perceived Utility	The degree to which a person believes that using SEI will improve their performance at work.	Venkatesh & Davis (2000), Davis *et al* (1989)
Perceived ease of use	To what extent a person believes that using SEI will be effort-free?	Venkatesh & Davis (2000), Davis *et al* (1989)
Intention to use SEI	Degree of the propensity of a user to adopt the SEI.	Davis *et al* (1989)
Usability	The user's perception that THE SEI can meet their needs.	Venkatesh & Bala (2008)
Interactivity	Degree of user interactivity with CES.	Venkatesh & Bala (2008)
Perceived satisfaction	User satisfaction with the use of SEI.	Venkatesh & Bala (2008)

Hypotheses are provisional statements about a particular phenomenon or study. These statements indicate the research issues and the paths, directing the investigation (Zanella, 2006). **Table 2** presents the hypotheses of this investigation.

Table 2. Hypotheses of the investigation

	Hypotheses	Authors
H1	The experience in the use of the system has a positive relationship with the perceived usefulness of the use of SEI.	Venkatesh & Bala (2008)
H2	The experience in the use of the system has a positive relationship with the perceived ease of use of the SEI.	Venkatesh & Bala (2008)
H3	The usability of the system is positively related to the perceived ease of use of the SEI	Venkatesh & Bala (2008)
H4	The interaction with the system has a positive relationship with the perceived ease of use of the SEI.	Venkatesh & Bala (2008)
H5	Perceived satisfaction has a positive relationship with the perceived ease of use of the SEI.	Venkatesh & Bala (2008)
H6	The perceived ease of use has a positive relationship with the perceived usefulness of the SEI.	Venkatesh & Davis (2000), Davis *et al* (1989)
H7	The perceived utility has a positive relationship with the intention of using the SEI.	Venkatesh & Davis (2000), Davis *et al* (1989)
H8	The perceived ease of use has a positive relationship with the intention to use the SEI.	Venkatesh & Davis (2000), Davis *et al* (1989)
H9	The intention of use has a positive relationship with the current use of SEI.	Venkatesh & Davis (2000), Davis *et al* (1989), Venkatesh & Bala (2008)

The development of a conceptual model becomes fundamental for solving the problem of research. Thus, **Figure 4** shows the conceptual model elaborated based on the Technological Acceptance Model - TAM of Venkatesh & Bala (2008).

The conceptual model in **Figure 4** shows the various relationships between constructs and aims to analyze whether there are positive relationships between them.

For data collection, a closed questionnaire was used based on questionnaires of similar investigations available in the literature review that also used the Technology Acceptance Model (TAM) as in Da Silva & Gonçalves (2021), Bobsin (2007) and Hedler et al (2016). Responses were collected through Google Forms. For the formulation of the questionnaire, we opted for the Likert scale from 1 to 5 points.
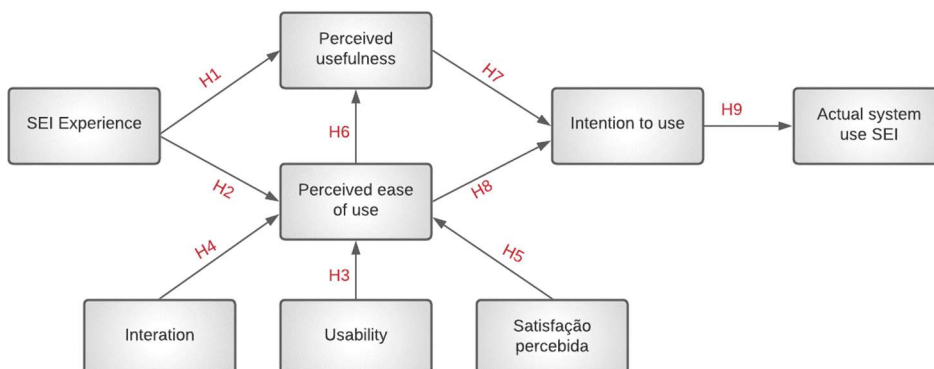
RESULTS

After performing a pre-test of the questionnaire that demonstrates or is effective, it was passed to the general application.

Sample characterization

The questionnaire was applied between April 6 and 29, 2022 and 205 IFRO employees attended.

The sample consisted of 62.2% of administrative technicians and 37.8% of teachers. The age group showed that 43.9% are between 33 and 40 years old, 30.5% are over 40 years old, 23.2% are between 26 and 32 years old and only 2.4% are between 18 and 25 years old.

The results showed that 46.3% worked at the institution between 6 and 9 years, 27.4% for more than 10 years, 22.6% between 2 and 5 years, and only 3.7% reported working less than 2 years. Regarding academic qualifications, 41.5% reported having a degree of specialization, 37.2% reported having a master's degree, 9.8%reported having a doctorate, 9.1% had a degree (bachelor's degree) and only 2.4% had only the intermediate level.

Regarding the use of sei, 65.9% reported using sei every day, 19.5% use it between 2 and 3 times a week, 11% use it at least once a week and only 3.7% use it at least once a month.

Reliability and factor analysis

Reliability analysis is based on the reliability check of the questionnaire applied through statistical analyses. The data collected through Google Forms were processed using the SPSS software to perform statistical analysis.

The reliability of the various constructs that are part of the data collection instrument can be assessed using Cronbach's Alpha Coefficient. Alpha is a coefficient that uses values between 0 and 1. The closer to 1, the higher the reliability of the instrument analyzed (Soler Cárdenas & Soler Pons, 2012). Alpha reliability scale parameters vary as follows: 0 to 0.21 – small consistency; 0.21 to 0.40 – reasonable consistency; 0.41 to 0.60 – moderate consistency; 0.61 to 0.80 – substantial consistency; 0.81 to 1.0 – calmest perfect consistency.

Cronbach's Alpha analyses were performed considering the set of items belonging to each construct of the data collection instrument and are shown in **Table 3**.

Figure 4. Conceptual map

Table 3. Cronbach's Alpha Coefficient.

Construct	Alfa de *Cronbach*	Items	Consistency
Experience in using SEI	0,557	3	Moderate
Usability	0,903	3	Almost perfect
Interaction with SEI	0,871	3	Almost perfect
Perceived satisfaction	0,875	3	Almost perfect
Perceived utility	0,907	3	Almost perfect
Perceived ease of use	0,904	3	Almost perfect
Intent to use	0,920	3	Almost perfect
Current use of SEI	0,468	3	Moderate
Value of general *Cronbach's* Alpha	0,952		Almost perfect

In the analysis of **Table 3**, it is observed that only the constructs "Experience in the use of SEI" and "Current use of SEI" are moderate consistencies. All other constructs have almost perfect consistencies, which indicates that there is reliability and internal consistency in the data collection instrument.

The KMO Test (Kaiser-Meyer-Olkin) indicates the proportion of data variance that can be considered common to all variables, that is, that can be attributed to a common factor. The closer to 1, the better the result, that is, the more appropriate the sample is to the application of factor analysis.

The result obtained through the KMO test for all variables of the data collection instrument must remain above 0.5 for the variables to be considered adequate for the study. The value measured through the SPSS software assay was 0.936, which indicates that the sample selected for the study is adequate.

The commonalities are the amounts of variances (correlations) of each variable explained by the factors and the higher the commonality, the greater the power of explanation of the variable by the factor. For Filho & Junior (2009), Usually, the minimum acceptable value is 0.50. Therefore, if the researcher finds any commonality below this level, the variable can be excluded if the researcher wishes. The analysis of the commonalities showed that only two constructs showed values below 0.5, as shown in **Table 4**.

Table 4. Commonalities and total variance explained

Variable	commonalities	Total Variance Explained (% accumulated)
Experience in the use of SEI.		**51,849%**
I participated in training and training to use the SEI.	0,555	
I often use SEI on mobile devices.	0,194	
Is SEI important in my work environment?	0,623	

Usability		**70,234%**
I believe that the use of SEI improves the execution of my work in IFRO.	0,817	
I like to use SEI to perform my work at IFRO.	0,771	
The use of SEI brings more agility to my work.	0,766	
Interaction with SEI		**80,545%**
The use of SEI improves the planning of my work.	0,791	
The use of SEI allows the sharing of knowledge.	0,704	
The use of SEI makes me more motivated for the job.	0,749	
Perceived satisfaction		**87,178%**
I like the visual image of sei.	0,734	
Sei buttons, menus, and shortcuts are presented simply.	0,717	
SEI is an intuitive system.	0,696	
Perceived utility		**91,956%**
The use of SEI improves my performance at work.	0,770	
I believe that the use of knowledge is useful in my work.	0,818	
The use of SEI makes me more efficient in my work.	0,790	
Perceived ease of use		**95,173%**
The use of SEI is not complicated for me.	0,774	
It took little time to learn how to use SEI.	0,807	
It was easy for me to acquire skills in the use of SEI.	0,797	
Intent to use		**97,534%**
I want to use SEI in my activities at IFRO.	0,790	
I recommend using SEI for activities.	0,817	
I intend to continue using SEI in the future.	0,720	
Current use of SEI		**99,220%**
I use SEI in my work at IFRO.	0,661	
Use all modules and functionality available at SEI.	0,609	
The data I use in SEI is reliable.	0,388	
		100,000%

Descriptive analysis

In this section, the Mode and median analysis of the research constructs was performed through the SPSS software. **Table 5** shows the median and mode values of the construct "Experience in the use of SEI". About the data presented, it was verified that the respondents participated in training for the use of the SEI and also consider the system important for the work environment. However, they generally do not use it on mobile devices, since the Mode referring to this variable indicates that most disagree with this statement.

Table 5. Median and Mode construct experience in the use of SEI.

Experience in using SEI		
Variable	**Median**	**Mode**
I participated in training and training to use the SEI.	4	5
I often use SEI on mobile devices.	2	1
Is SEI important in my work environment?	5	5

Table 6 shows the median and mode values of the construct "USUS of SEI". About the data presented, it is observed that the respondents mostly believe that the SEI improves execution and brings agility to their work and also like to use the system.

Table 6. Median and Mode of the usability construct of SEI.

Usability		
Variable	**Median**	**Mode**
I believe that the use of SEI improves the execution of my work in IFRO.	5	5
I like to use SEI to perform my work at IFRO.	5	5
The use of SEI brings more agility to my work.	5	5

Table 7 shows the median and mode values of the construct "Interaction with SEI". Regarding the data presented, it is observed that most respondents realize that the SEI improves their work planning and allows the sharing of knowledge. However, it is also verified that the majority of the SEI does not leave them more motivated for work and the median and Mode of this variable indicate indifference in the statement.

Table 7. Median and Mode of the construct interaction with the SEI.

Interaction with SEI		
Variable	**Median**	**Mode**
The use of SEI improves the planning of my work.	4	5
The use of SEI allows the sharing of knowledge.	4	5
The use of SEI makes me more motivated for the job.	3	3

Table 8 shows the median and mode values of the construct "Perceived satisfaction". Regarding the data presented, it is observed that the majority of respondents partially agree that they like the visual image of the SEI and consider that the buttons, shortcuts, and menus are simply presented in the system. It is also observed that the median referring to the system intuition variable was presented in the indifference interval.

Table 8. Median and Mode of the perceived satisfaction construct.

Perceived satisfaction		
Variable	**Median**	**Mode**
I like the visual image of sei.	4	4
Sei buttons, menus, and shortcuts are presented simply.	4	4
SEI is an intuitive system.	3	4

Table 9 shows the median and mode values of the construct "Perceived utility". The data show that the majority of respondents believe that the use of SEI improves their performance and efficiency at work and considers the usefulness of the system. It is observed that Mode remained at the highest value in all variables analyzed.

Table 9. Median and Mode of the perceived utility construct.

Perceived utility		
Variable	**Median**	**Mode**
The use of SEI improves my performance at work.	4	5
I believe the use of knowledge is useful in my work.	5	5
The use of SEI makes me more efficient in my work.	4	5

Table 10 shows the median and mode values of the construct "Perceived ease of use". The data collected indicate that the respondents do not perceive complications when using the Sei and also indicate ease and little time necessary to acquire skills in the system.

Table 10. Median and Mode of the construct perceived ease of use.

Perceived ease of use		
Variable	**Median**	**Mode**
The use of SEI is not complicated for me.	4	5
It took little time to learn how to use SEI.	4	4 and 5
It was easy for me to acquire skills in the use of SEI.	4	4

Table 11 shows the median and mode values of the "Intent to Use" construct. The data collected indicate that respondents mostly recommend using the SEI and intend to continue using it in the future.

Table 11. Median and Mode of the construct intent of use.

Intent to use		
Variable	**Median**	**Mode**
I want to use SEI in my activities at IFRO.	5	5
I recommend using SEI in IFRO activities.	5	5
I intend to continue using SEI in the future.	5	5

Table 12 shows the median and mode values of the construct "Current use of SEI". The data collected shows that the system is used effectively in IFRO and that the system data and information is reliable. However, there is a perception of not all modules and features are used by all respondents.

Table 12. Median and Mode of the construct current use of SEI.

Current use of SEI		
Variable	Median	Mode
I use SEI in my work at IFRO.	5	5
Use all modules and functionality available at SEI.	3	4
The data I use in SEI is reliable.	5	5

Analysis of correlations

Pearson's correlation coefficient was used for the analysis of correlations, which is a measure of linear association between variables.

For Filho & Junior (2009), two variables are associated when they have similarities in the distribution of their scores through the distribution of their frequencies or sharing variances.

Pearson's coefficient varies from -1 to 1 and the signs indicate a positive or negative direction between the variables analyzed. The closer to 1, the higher the degree of linear statistical dependence between the variables. Cohen (2005) cited in Filho & Junior (2009) classifies the results with the following intervals: 0.10 to 0.29 - weak correlation, 0.30 to 0.49 - mean correlation, 0.50 to 1 - large correlation. The following points show the validation of hypotheses based on the analysis performed by the SPSS software:

Hypothesis 1: The experience in the use of the system has a positive relationship with the perceived usefulness in the use of the SEI.

The first hypothesis analyzed is the relationship between the variables of the constructs "Experience in the use of SEI" and "Perceived utility". Pearson's correlation value was 0.367. This indicates that there is an average positive relationship between the variables. Therefore, it is possible to state that hypothesis 1 is valid.

Hypothesis 2: The experience in the use of the system has a positive relationship with the perceived ease of use of the SEI.

The second hypothesis analyzed is the relationship between the variables of the constructs "Experience in the use of SC" and "Perceived ease of use". Pearson's correlation value was 0.440. This indicates that there is an average positive relationship between the variables. Therefore, it is possible to state that hypothesis 2 is valid.

Hypothesis 3: The usability of the system is positively related to the perceived ease of use of the SEI.

The third hypothesis analyzed is the relationship between the variables of the constructs "Usability of the SEI" and "Perceived ease of use". Pearson's correlation value was 0.595. This indicates that there is a largely positive relationship between the variables. Therefore, it is possible to state that hypothesis 3 is valid.

Hypothesis 4: The interaction with the system has a positive relationship with the perceived ease of use of the SEI.

The fourth hypothesis analyzed is the relationship between the variables of the constructs "Interaction with SEI" and "Perceived ease of use". Pearson's correlation value was 0.446. This indicates that there is an average positive relationship between the variables. Therefore, it is possible to state that hypothesis 4 is valid.

Hypothesis 5: Perceived satisfaction has a positive relationship with the perceived ease of use of the SEI.

The fifth hypothesis analyzed is the relationship between the variables of the constructs "Perceived satisfaction" and "Perceived ease of use". Pearson's correlation value was 0.641. This indicates that there is a largely positive relationship between the variables. Therefore, it is possible to state that hypothesis 5 is valid.

Hypothesis 6: The perceived ease of use has a positive relationship with the perceived usefulness of the SEI.

The sixth hypothesis analyzed is the relationship between the variables of the constructs "Perceived ease of use" and "Perceived utility". Pearson's correlation value was 0.554. This indicates that there is a largely positive relationship between the variables. Therefore, it is possible to state that hypothesis 6 is valid.

Hypothesis 7: The perceived utility has a positive relationship with the intention to use the SEI.

The seventh hypothesis analyzed is the relationship between the variables of the constructs "Perceived utility" and "Intention of use". Pearson's correlation value was 0.839. This indicates that there is a largely positive relationship between the variables. Therefore, it is possible to state that hypothesis 7 is valid.

Hypothesis 8: The perceived ease of use is positively related to the intention to use the SEI.

The eighth hypothesis analyzed is the relationship between the variables of the constructs "Ease of perceived use" and "Intention of use". Pearson's correlation value was 0.589. This indicates that there is a largely positive relationship between the variables. Therefore, it is possible to state that hypothesis 8 is valid.

Hypothesis 9: The intention of use is positively related to the current use of THE SC.

The last hypothesis analyzed is the relationship between the variables of the constructs "Intention of use" and "Current use of SEI". Pearson's correlation value was 0.637. This indicates that there is a largely positive relationship between the variables. Therefore, it is possible to state that hypothesis 9 is valid.

The analyses of the bivariate correlations with Pearson's coefficient showed that all hypotheses of the investigation are valid. From these data **Figure 5** shows the conceptual map updated with the respective values of the correlations.
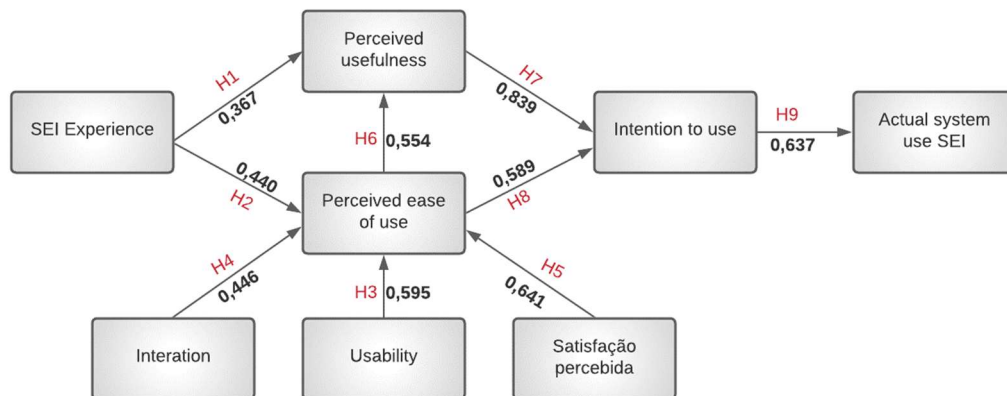
Figure 2. Conceptual map after correlations

The results presented in **Figure 5** confirm the proposed conceptual model and it is possible to affirm that the experience in the use of the SEI has a positive relationship both with the perceived utility and with the perceived ease of use. Interaction, usability, and perceived satisfaction have a positive relationship with perceived ease of use. The perceived ease of use has a positive relationship both with the perceived utility and to use of the system. Finally, the intention to use the system has a positive relationship with the current user.

It is also possible to note that the most significant relationship was evidenced between the perceived usefulness and the intention of use, being possible to affirm that IFRO employees perceive the contribution of the system in their activities and intend to continue to use it.

CONCLUSIONS

The sample showed that the majority of respondents occupy the position of Administrative Technician and use the SEI daily. It is also observed that 70.7% of the respondents have 6 years or more of work in the institution. Therefore, they are people who participated in the implementation of SEI and the transition from physical processes to digitized processes.

Another relevant fact is that 88.5% of respondents have higher academic qualifications than graduates. In other words, they're people with academic instruction in terms of specialization, master's, and doctorate.

Research has also shown that SEI is not commonly used on mobile devices and that most respondents consider it important in their work environment and believe that the system improves the execution of their activities. It is worth mentioning that according to Teixeira et al. (2020) "nowadays, people communicate, buy, organize, play, work, among other possibilities, mainly using mobile devices such as smartphones and tablets".

An intriguing finding is whether the use of the SEI makes them motivated for work, most respondents answered that they do not agree or disagree. Therefore, it is concluded that despite the affirmation of the importance of the system in the

work environment, it is not a determinant of the motivation of employees.

The intention to continue using the ESC in the future exceeded 60% of respondents, which confirms the importance of the system in the institution. In addition, employees rely mostly on the data available in the system and also recommend it.

The TAM showed that the majority of respondents perceive the usefulness of the SEI and that this perception strongly influences the intention to use the system. In general, it is possible to state that employees are satisfied with SEI and its influence on the quality, agility, and planning of work in IFRO.

REFERENCES

Andrade, M. S., Nishimaru, G. Y., Nascimento, D. G., Fróes, N. J.M.: A systematic review of the interaction between industries 4.0 and sustainability. XXV Symposium of Production Engineering. Sao Paulo. (2018).

Bobsin, D.: Application of the TAM and TTF Model to Explain the Differences in The Use of Information Systems by Organizational Hierarchical Levels. I Information Administration Meeting, 1, 1-15 (2007).

Camarinha, A. P., Abreu, A. J., Angélico, M. J., Silva, A. F. D., & Teixeira, S.: A Content Analysis of social media in Tourism During the Covid-19 Pandemic. In International Conference on Tourism, Technology and Systems (pp. 532-546). Springer, Singapore (2020).

Dalfovo, M. S., Lana, R. A., & Silveira, A.: Quantitative and qualitative methods: a theoretical rescue. An applied scientific interdisciplinary journal, 2(3), 1-13 (2008).

Da Silva, I. M. A. G., & Gonçalves, M. J. A.: Mobile Applications in the Language Classroom in the 2nd and 3rd Cycle. RTIC-Journal of Technologies, Information, and Communication, 2(1), 005-026 (2021).

Davis, F. D., Bagozzi, P. R., Warshaw, P. R.: User acceptance of computer technology: A comparison of two theoretical models. Management Science. Vol 35. 8. USA (1989).

Filho, D. B. F., Júnior, J, A. S.: Unraveling the mysteries of Pearson's correlation coefficient. Political magazine today, vol. 18 (2009).

Hedler, H. C., Fernanda, E., Duarte, B. S., Prado, H. A., & Gutierrez, C. E. C.: Application of the technology acceptance model to cloud computing. Perspectives in Management & Knowledge, 6(2), 188-207 (2016).

Pereira, A., & de Oliveira Simonetto, E.: Industry 4.0: concepts and perspectives for Brazil. Revista da Universidade Vale do Rio Verde, 16(1) (2018).

Silva, P. M. D., & Dias, G. A.: Theories on Technology Acceptance: Why do users accept or reject information technologies? Brazilian Journal of Information Science. 69-91 (2007).

Silva, P. D., Dias, G., & Almeida, J. D.: Technology acceptance model (TAM) applied to the Information System of the Virtual Health Library (VHL) in the Medical Schools of the Metropolitan Region of Recife. 2008. 156 f (Doctoral dissertation, Dissertation (Master's degree in Information Science) - Center for Applied Social Sciences, Federal University of Paraíba, João Pessoa) (2008).

Soler Cárdenas, S. F., & Soler Pons, L.: Uses of Cronbach's alpha coefficient in the analysis of written instruments. Electronic Medical Journal, 34(1), 01-06 (2012).

Teixeira, S., Angélico, M. J., Abreu, A. J., & Camarinha, A. P.: A Longitudinal Study About Mobile Applications in the Tourism Sector. In International Conference on Tourism, Technology, and Systems (pp. 547-556). Springer, Singapore (2020).

Venkatesh, V., & Davis, F. D.: A theoretical extension of the technology acceptance model: Four longitudinal field studies. Management Science, 46(2), 186-204 (2000).

Venkatesh, V., & Bala, H.: Technology acceptance model 3 and a research agenda on interventions. Decision sciences, 39(2), 273-315 (2008).

Zanella, L. C. H.: Research methodology. SEAD/UFSC (2006).