Management Modeling Including Process Quality and Technology for Service Improvement by Applying Structural Equations

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ABSTRACT

This study proposes a model to improve identity registration service and correlates this service to the process quality and technology by means of structural equations using SPSS and AMOS. To reinforce the analysis of the information obtained from documents and records of the processes of identity registration, a 21 question survey was given to citizens coming to 1 of 16 regional headquarters, from which it was possible to demonstrate through structural equations, the existence of a strong relationship between the three variables: process quality, technology and service improvement.

Keywords: process quality; technology; service improvement; structural equations.

INTRODUCTION

RENIEC is the only institution in Peru with the great responsibility of identifying Peruvians and guaranteeing the technical and legal security of all civil acts. However, despite the actions and efforts related to the coverage of services and attention to the population, there is a population growth of more than 30 million Peruvians that is increasing and that demands better attention with respect to the services provided. Consequently, efforts regarding the registration and identification of individuals must keep pace with the current needs of the population since institutions must find ways to improve their performance in a competitive context.

Importance

This study seeks to review the information gathered to expose the practical and theoretical support of the existing correlation between (1) the use of technology, the attention, and the improvement of good practices that are successful in other countries, and (2) the process quality (certified lines, application of quality models) in order to improve the identity registration service.

Background

For this study, previous works on the subject were reviewed, in which the variables "process quality", "technology" and their incidence on "service improvement" were studied.

In his doctoral thesis, *Sistemas y tecnologías de información y comunicaciones en el proceso de dirección de calidad total*, González (1999) determined that the relationships between technologies and the total quality management process as key factors for company failure or success. He concluded that the strategic application of information systems and technology focuses especially on improving the knowledge the company has

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regarding customer needs, reducing delivery times, and improving the quality of products/services.

Likewise, Cuevas, Aguilera y González (2015), in *La relación de la innovación de procesos y el rendimiento empresarial de las MiPymes industriales de Guanajuato*, considered two significant contributions. The first provided knowledge support by observing the existing relationship between the implementations that add value to processes, and business productivity in relation to MSMEs. The second contribution was the use of a new methodology to demonstrate the theoretical model by proving the constructs through second order confirmatory factor analysis and validating its hypothesis through structural equation modeling (SEM). For this, a survey was designed comprising the variables "process innovation" and "business performance" with a total of 17 items measured on a 5-point Likert scale. A Cronbach's alpha of over 0.7 was obtained from the reliability assessment of the instrument. The results obtained through structural equation modeling with the software EQS 6.1 proved the hypothesis that indicated that newness in processes influence business productivity by 66%.

In his work *Análisis causal con ecuaciones estructurales de la satisfacción ciudadana con los servicios municipales*, García (2011) studied the level of satisfaction perceived by users of certain types of services provided by the provincial municipality of A Coruña. The data were obtained through a survey to users of this municipality, which has 5705 inhabitants, so the study sample was 247. Five dimensions were identified through factor analysis: overall satisfaction, management, cleanliness, sanitation services and infrastructure. The structural equation modeling study was employed with the use of AMOS from 18 observed variables that constituted the survey items to study and calculate user satisfaction with municipal services; thus, causal relationships were found and those that exert a greater impact on citizens regarding decision-making were identified.

In the same way, Rodríguez (2016), in his presentation *Modelo de gestión y su relación con el marco estratégico, el gobierno corporativo y la gestión del cambio*, maintains that a management model in an organization should be based on processes, people and technology. Processes must be worked on and reinforced taking into account the principles of a quality management system, the continuous improvement, and the idea that technology integrates information into business processes, thus helping people to make decisions to achieve objectives.

The general objective of this article is "to design a management model including process quality and technology that strengthens the improvement of the identity registration service". The specific objectives are "to evaluate how, following international guidelines, the management of identity registration processes will improve the identity registration service in terms of time, quality, and costs", "to study how the digitization of documentation will improve the identity registration service in terms of time, quality, and costs", "analyze how the systematization of biometric verification will improve the identity registration service in terms of time, quality, and costs" and "evaluate how the implementation of e-government services will improve the identity registration service in terms of time, quality, and costs".

General Hypothesis

The design of a management model including process quality and technology improves the identity registration service.

Specific Hypotheses

1. Following international guidelines in the process management of the identity registration service improves the service in terms of time, cost and quality.

2. The digitization of documentation improves the identity registration service in terms of time, quality, and costs.

3. The systematization of biometric verification improves the identity registration service in terms of time, quality, and costs.

4. The implementation of e-government services in the identity registration service improves the service in terms of time, quality, and costs.

Justification

Constant changes and the different organizational culture in the entities of each nation influence management systems, which also cause them to update and innovate. In this sense, this study seeks to objectively expose the development of processes based on the adoption of international standards and/or quality models, as well as new technologies adopted for service improvement.

Limitations

A limiting factor was evident when collecting the responses from citizens in relation to the questions related to the variable "technology", since, due to

the nature of this type of questions, it was possible that they were not understood, which was evidenced when analyzing the results of one of the specific hypotheses.

Another limiting factor was the access to documents and certain records due to the security of the existing information in the organization, so the researcher, in her analysis prior to the use of structural equations, took referential data for the study of the relationship of the three variables.

In relation to the authors consulted for the variables studied, about the service improvement associated with the quality of processes and technology, and applied to structural equations, the following is exposed:

Process Quality

The process management following international guidelines represents the implementation of the international standard ISO 9001:2015 to improve service, as mentioned by Cruz (2001). His most relevant conclusions are that the implementation of a quality system is motivated by competitiveness, the desire to improve service, product, and employee satisfaction, as well as to reduce costs, among others.

Likewise, Pérez (2004), in his book *Gestión por procesos*, points out that financial measurements that until recently were considered the most relevant do not necessarily provide data to support improvement, so other perspectives that contribute information for dynamic management are indispensable.

Technology

Rodríguez (2009), in his article *El AFIS del Reniec: avanzada tecnología biométrica de identificación al servicio de los peruanos y sus instituciones*, points out that the Senior Management of Reniec (Peruvian National Registry of Identification and Civil Status), with a futuristic vision, took an important and historic step by deciding to acquire the Automated Fingerprint Identification System (AFIS).

In *El proceso innovador y tecnológico: estrategias y apoyo público*, Sánchez (2008) points out that the rapid technological changes that have occurred in recent years have made technology a key factor for competitiveness within organizations.

Service Improvement

In the first chapter of his book *Mejoramiento de la calidad, un enfoque a los servicios*, Acuña (2005)

indicates that, in recent years, organizations are immersed in a great competition that increasingly forces them to fight for customer preferences.

Likewise, Prieto (2005), in his book *El servicio en acción. La única forma de ganar todos*, indicates that the population nowadays evaluates the attention it receives from companies and looks for the benefits it can find through the product; therefore, the meaning of "service" becomes relevant.

Structural Equations

Closas (2011), in his article *Ecuaciones estructurales*, presents a statistical technique to formulate and contrast models of cause-effect relationships, and points out that it is convenient that certain areas of knowledge — when it is necessary to provide clarification of the relationship between variables, dependent (one) and independent variables (more than one), as well as the relationship that may exist between two or more hidden (latent) variables— are studied through structural equations. These multivariate statistical models involve correlation and regression to incorporate webs of interconnected variables into the study.

Hoyos and Ramos (2018), indicate in their thesis that when public management does not follow proper planning, it becomes necessary to study and establish an optimal structural equation model to evaluate the overall satisfaction of the population about public services.

Nigro (2014) also shows in his work that the relationships between variables are obtained from SEMs, which make it possible to assess the result and the relationships between many variables. Generally, the variables are quantitative, and a measurement instrument is used, to which a Likert scale is applied.

METHODOLOGY

The research was explanatory and of correlational level. The population surveyed were those citizens who go to the premises of the 16 regional headquarters where most transactions or procedures are carried out; thus, the survey was applied to a sample of 572 citizens.

The research methodology was used by means of exploratory factor analysis, confirmatory factor analysis and structural equation modeling. The specialized software Statistical Product and Service Solutions (SPSS) was used for the exploratory factor analysis, and AMOS (Analysis of Moment

Structures) was used for the confirmatory factor analysis and structural equation modeling.

Sample Size

The formula was applied for a finite population, where the total population is known, and it is desired to know how many of the total should be studied:

$$n = \frac{NZ^2pq}{e^2(N-1) + Z^2pq}$$

Where: *n* is the sample size to be found, *N* is the total number of users/citizens (population), *Z* is the safety margin obtained from the normal distribution, *p* is the expected proportion of the parameter to be evaluated. For the study, N = 12 000, Z = 1.96 for a safety margin of 95%, *p* = .5, *q* = (1 - p) and the sampling error is 3%, that is to say, *e* = 0.03. By replacing these data in the formula, a size of 572 surveys was obtained.

The sample was selected by stratified sampling, dividing the population into strata, and selecting a sample for each stratum. Stratified sampling exposes a minimum of errors, which increases the precision of the sample (Hernández, Fernández & Baptista, 1998, p.181).

Table 1 shows the details of the sample for each regional headquarters. The following is specified in each column:

JR = (From JR1 to JR16); regional headquarters name = name of each of the 16 regional headquarters; type of premises = OR (registry) or AG (agency); premises code = code assigned according to JR; premises name = name of premises according to JR, transaction per day = average number of daily procedures; sample size = stratified calculation according to formula (ni).

As the number of citizens is distributed according to the access to the different Agencies (per regions), the following formula was applied (ni):

$$ni = \frac{n}{N} \times g$$

Where *ni* is the sample size per premises that is to be found; *n* is the general sample size; *N* is the total number of transactions; and *g* is the population group (number of transactions per premises/region).

Questionnaire

The measurement instrument consisted of 21 questions related to three dimensions: "process quality", "technology" and "service improvement". Questions

Table 1. *Average Number of Largest Transactions in Each Headquarters.*

JR code	Name of Regional Headquarters	Type of Premises	Premises Code	Premises Name	Transactions per Day (on average)	Sample Size
JR1	PIURA	OR	351	CHICLAYO	1032	49
JR2	TRUJILLO	OR	310	TRUJILLO	978	47
JR3	TARAPOTO	OR	586	TARAPOTO	240	11
JR4	IQUITOS	OR	431	IQUITOS	645	31
JR5	CHIMBOTE	AG	33	SANTA	407	19
JR6	HUANCAYO	AG	281	HUANCAYO	911	43
JR7	AYACUCHO	AG	121	HUAMANGA	467	22
JR8	AREQUIPA	OR	91	AREQUIPA	1860	89
JR9	CUSCO	OR	191	CUSCO	1297	62
JR10	LIMA	OR	371	LIMA CERCADO	1842	88
JR11	PUNO	AG	559	SAN ROMÁN	567	27
JR12	ICA	AG	271	ICA	450	21
JR13	PUCALLPA	OR	701	PUCALLPA	556	27
JR14	HUANCAVELICA	OR	221	HUANCAVELICA	127	6
JR15	HUÁNUCO	AG	241	HUÁNUCO	430	21
JR16	AMAZONAS	AG	158	JAÉN	191	9
					12 000	**572**

Source: Prepared by the authors.

1 to 7 belong to the dimension "process quality"; questions 8 to 14 belong to the dimension "technology"; and questions 15 to 21 belong to the dimension "service improvement" (see Appendix 1).

First, the reliability and internal consistency analysis was performed to the Likert scale applied to the questionnaire using SPSS for the survey data in its 21 items and 572 responses. An excellent result was achieved: a total Cronbach's alpha of 0.922; that is, a reliable result that endorses a continuation of the study.

Exploratory Factor Analysis

The exploratory factor analysis (EFA) was performed by verifying that the determinant in the correlation matrix is close to zero, that is, that the variables used are linearly related, which means that the factor analysis is a pertinent technique for its analysis. Likewise, the results of the KMO = 0.851, with a significance level of 0, which demonstrate the correlation of variables.

The Varimax rotated component matrix was applied under the belief that it is possible to work with three dimensions or factors, according to theoretical considerations.

The items (questions) are then distributed in three components (factors), F1: V20, V18, V17, V19, V21, V14, V13; F2: V2, V5, V1, V4, V7, V3, V6; F3: V8, V9, V10, V12, V11. It is observed that there is an overlap of V16 and V15 in F2. They are removed, and the process is performed again, but with 19 variables. It is obtained that in the new rotated component matrix the items are also distributed in three components (factors), F1 = SERVICE IMPROVEMENT: V13, V14, V17, V18, V19, V20, V21; F2 = TECHNOLOGY: V8, V9, V10, V11, V12; F3 = PROCESS QUALITY: V1, V2, V3, V4, V5, V6, V7.

Now, for the 19 items, a total Cronbach's alpha equal to 0.915 is obtained, which is a very positive value. Likewise, for each of the components, a Cronbach's alpha of 0.897 was obtained for the seven elements of the component "service improvement"; 0.939 for the five elements of the "technology" component; and 0.869 for the seven elements of the "process quality" component. Additional results were obtained: KMO = 0.852, a significance level of 0 and a total variance explained that, based on Kaiser's rule, provides a factorial structure with three factors or components that explain 65.622% of the total variance, which is appropriate, since the authors suggest a percentage of 50% or more.

Confirmatory Factor Analysis

Based on the result obtained from the exploratory factor analysis (EFA), there are 19 variables and 3 dimensions (latent variables) for the study. It is customary in EFA to use causal relationship diagrams to represent the relationships between variables and factors. In this sense, AMOS was applied to obtain the following goodness-of-fit indicators after the necessary adjustments: chi-square = 611.416, GFI = 0.900, RMSEA = 0.076, NFI = 0.929, TLI = 0.932 and CFI = 0.944. These values are within the required parameters and correspond to the confirmatory factor analysis model. Figure 1 and Table 2 show the correlations between the variables, as well as some correlations between the errors, taking into account that in order to relate two errors they must belong to the same factor. In this sense, the correlations —for example, for the factor TECHNOLOGY, between the errors of items 10 (Do you consider that the use of biometric verification (when the fingerprint is taken and compared to an existing one in the fingerprint database) is necessary to minimize identity theft?) and 11 (Do you think that biometric verification is a tool that allows establishing high reliability security levels for the provision of services that the entities provide to their clients?)— were gradually understood. The same happened, for the factor CALIDAD_PROC, to the correlation between the errors in items 2 (Do you consider that the organization is a leader in customer-citizen service?) and 7 (Is there communication between the organization and its customers-citizens through the platform, networks, chat or other means?).

Structural Equation Modeling

Structural equation modeling (SEM) is a multivariate statistical technique that assesses the outcome and relationships between several variables. These models make it possible to formulate the type and direction of the relationships expected to be found among the multiple variables, to then estimate the measures described by the theoretically proposed relationships.

Thus, the result of the CFA served as the basis for obtaining the Structural Equation Model (SEM) by using AMOS and after several processes, the best model was obtained according to the goodness-of-fit indicators: Chi-square = 364.423, GFI = 0.925, RMSEA = 0.071, NFI = 0.944, TLI = 0.945, CFI = 0.957; these results are optimal. Figure 2 and Table 3 show the correlations between the variables, as well as some correlations between the errors belonging to the same factor. For example, the factor MEJORA_SERV has the errors of items 18 (*Con*
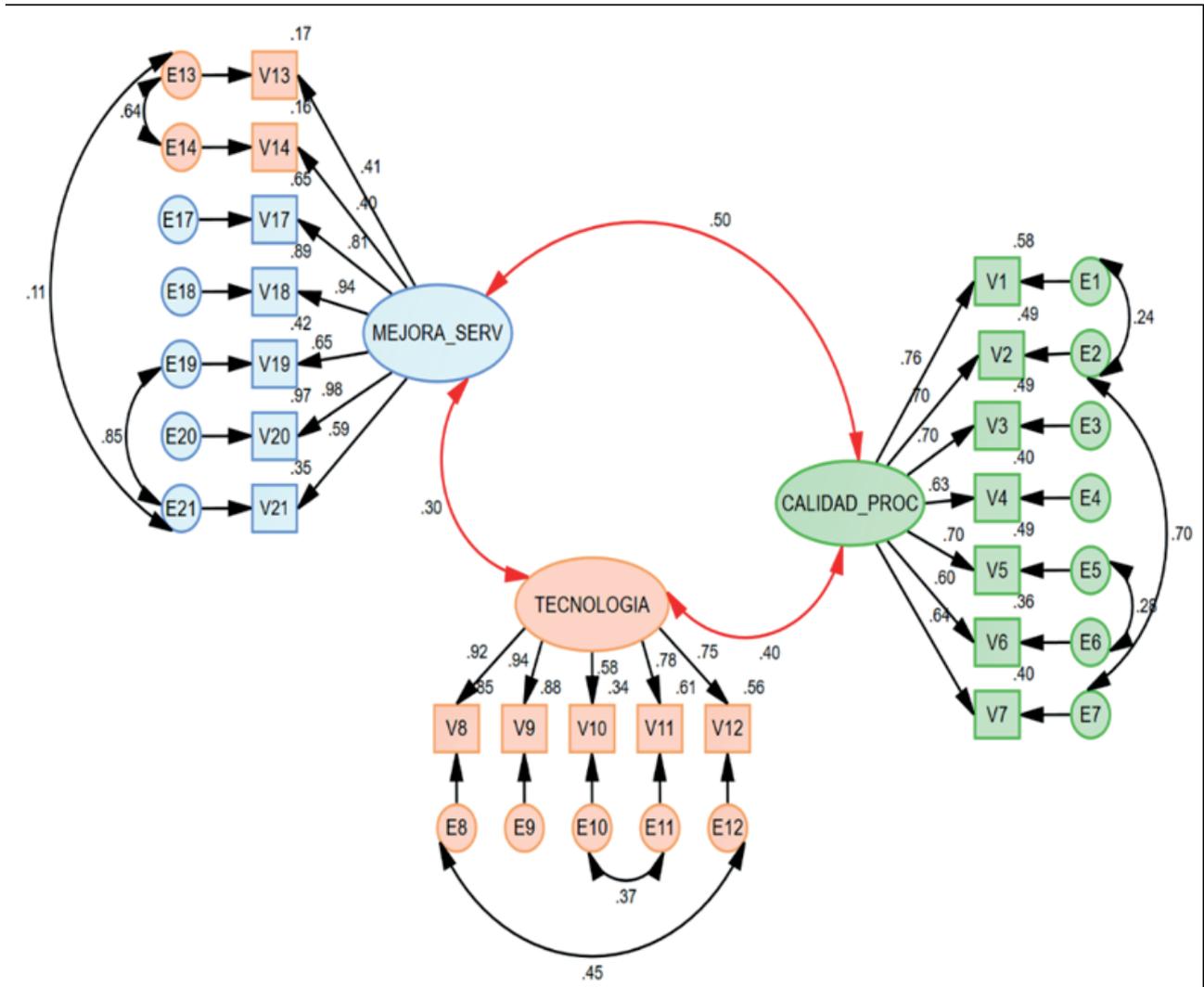
Figure 1. Confirmatory Factor Analysis Model (obtained with AMOS).

Source: Prepared by the authors.

Table 2. *Correlations.*

Variables			Estimate
MEJORA_SERV	<-->	TECNOLOGÍA	.301
CALIDAD_PROC	<-->	TECNOLOGÍA	.396
MEJORA_SERV	<-->	CALIDAD_PROC	.503
E2	<-->	E7	.700
E11	<-->	E10	.372
E5	<-->	E6	.278
E1	<-->	E2	.238
E12	<-->	E8	.446
E21	<-->	E13	.106
E14	<-->	E13	.641
E21	<-->	E19	.845

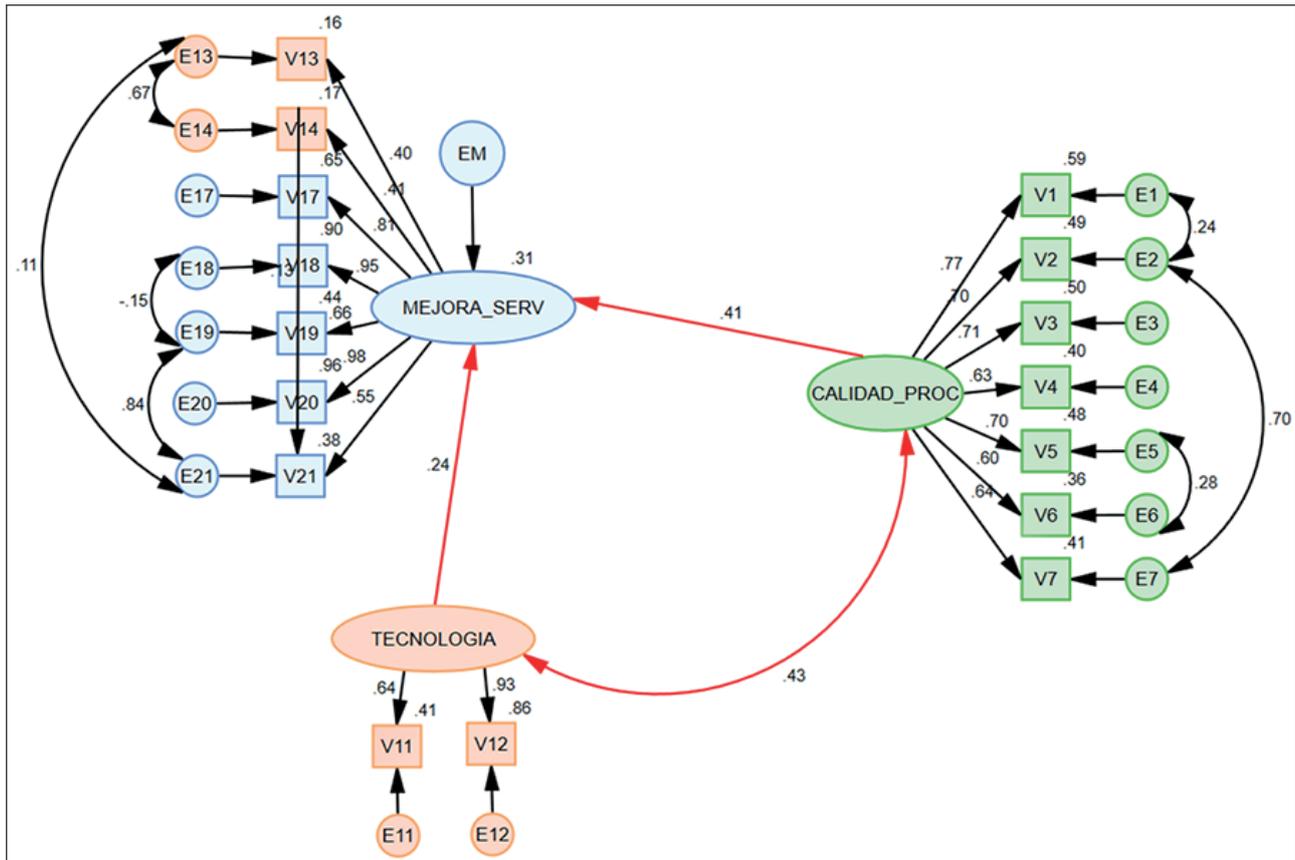Source: Prepared by the authors.

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Figure 2. Structural Equation Modeling (obtained from AMOS).

Source: Prepared by the authors.

Table 3. *SEM Correlations.*

Variables			Estimate
CALIDAD_PROC	<-->	TECNOLOGÍA	.435
E5	<-->	E6	.284
E21	<-->	E13	.110
E13	<-->	E14	.666
E19	<-->	E18	-.152
E21	<-->	E19	.841
E2	<-->	E7	.699
E1	<-->	E2	.236

Source: Prepared by the authors.

relación a la calidad del servicio. ¿Considera que la Organización está mejorando en la atención que le brinda? [Regarding the quality of service, do you consider that the organization is improving the service it provides?]) and 19 (*Con relación al producto DNI. ¿Considera que la Organización está esforzándose por entregar un producto de calidad y sin errores?* [Regarding the DNI, do you consider

that the organization is making an effort to deliver a quality product without errors?]).

RESULTS

Escobedo et al. (2016) in *Modelos de Ecuaciones Estructurales: Características, Fases, Construcción, Aplicación y Resultados*, express that, there

is an advantage when working with structural equation models, for it allows testing all the hypotheses at the same time. In fact, in this study the results are expressed in the "Structural Equations", which are shown in Table 4, obtained from the last adjustment in search of the most optimal result, the same that are constructed with the Estimate of the regression weights and adding the values of Variances that represent the errors that go from E1 to E21 (without E8, E9, E10, E15, E16).

Regarding the achievement of the general objective, the general hypothesis "the design of a management model including process quality and technology improves the registration of people identification service" is answered. The factor analysis was used to test the creation of a management model that relates the three latent variables or factors "process quality", "technology" and "service improvement". By applying AMOS to 572 respondents, goodness-of-fit indicators were obtained with parameters required in FCA. Likewise, the correlation between the 3 latent variables was checked, as shown in Figure 1 and Table 5.

Specific Hypotheses

1. "Following international guidelines in the process management of the identity registration service improves the service in terms of time, cost and quality".

That is, V1, V2, V3, V4, V5, V6, and V7 impact V15, V16, and V17 (time); V18 and V19 (quality); and V20 and V21 (costs); which can be visualized in Figure 2 (existing causal relationship).

As mentioned earlier in the application of the structural equation model, with the exploratory factor analysis and the application of the rotated components matrix, since there was an overlap of the two variables V15 and V16, which were part of the time variables, a decision was made to remove them. However, with V17, it is verified that there is a causal relationship in which the quality of the processes improves service in terms of time. Based on the results derived from the analysis of standardized regression weights in Table 6, the causal relationship is determined to be 0.409, thus proving Specific Hypothesis 1.

2. "Digitizing the documentation improves the identity registration service in terms of time, quality, and costs".

That is, V8 and V9 impact V15, V16 and V17 (time); V18 and V19 (quality); and V20 and V21 (costs).

During the search for the best SEM model, variables V8 and V9, which were part of the latent variable "technology" and which corresponded to the digitalization of documentation, had to be discarded in order to obtain better goodness-of-fit indicators. These results could be explained by the fact

Table 4. *Structural Equations.*

MEJORA _SERV = 0.214 CALIDAD_PROC	V1 = CALIDAD_PROC + 0.398
MEJORA_SERV = 0.153 TECNOLOGIA	V2 = 0.878 CALIDAD_PROC + 0.447
V14 = 0.907 MEJORA_SERV + 0.627	V3 = 0.889 CALIDAD_PROC + 0.448
V21 = 1.109 MEJORA_SERV + 0.390	V4 = 0.913 CALIDAD_PROC + 0.713
V20 = 2.167 MEJORA_SERV + 0.033	V5 = 0.801 CALIDAD_PROC + 0.386
V19 = 1.328 MEJORA_SERV + 0.350	V6 = 0.708 CALIDAD_PROC + 0.507
V18 = 2.139 MEJORA_SERV + 0.078	V7 = 0.831 CALIDAD_PROC + 0.570
V17 = 1.644 MEJORA_SERV + 0.222	V11 = 0.693 TECNOLOGIA + 0.256
V13 = MEJORA_SERV + 0.788	V12 = TECNOLOGIA + 0.061

Source: Prepared by the authors.

Table 5. *Correlations.*

Latent Variables			Estimate
MEJORA_SERV	<-->	TECNOLOGIA	.301
CALIDAD_PROC	<-->	TECNOLOGIA	.396
MEJORA_SERV	<-->	CALIDAD_PROC	.503

Source: Prepared by the authors.

that the questions asked within the variable "technology" can always be difficult for the respondent to understand.

3. "The systematization of biometric verification improves the identity registration service in terms of time, quality, and costs".

That is, V10 and V11 impact V15, V16 and V17 (time); V18 and V19 (quality); and V20 and V21 (costs). Based on the results derived from the analysis of standardized regression weights in Table 6, the causal relationship is determined to be 0.238, thus proving specific hypothesis 3.

4. "The implementation of e-government services in the identity registration service improves the service in terms of time, quality, and costs".

That is, V12, V13 and V14 impact V15, V16 and V17 (time); V18 and V19 (quality); and V20 and V21 (costs). The results of the standardized regression weights analysis are shown in Table 6. With the causal relationship at 0.238, specific hypothesis 4 is demonstrated.

DISCUSSION

One of the sources used for data collection is the survey, as measurement instrument, which is applied through a previously elaborated questionnaire and through which the opinion or evaluation of the citizen is known, as was the case in this study. This instrument must meet desirable characteristics of reliability and validity. The reliability coefficient linked to internal consistency is Cronbach's alpha coefficient, which is recommended at values greater than 0.8. For the validity of the instrument, the KMO is used, acceptable at a value greater than 0.5.

In this study, a total Cronbach's alpha of 0.922 was obtained and a value of 0.869, 0.861 and 0.888 was obtained for each latent variable, as well as a KMO of 0.851. These results were compared with the research of Zabaleta, Brito and Garzón (2020) about methodology to estimate and evaluate a knowledge management model by means of structural equations, in which they reached a total Cronbach's alpha of 0.97 and 0.841, 0.819 and 0.914 for each latent variable. In other words, they proved a reliable and valid instrument.

To obtain the structural equations and apply them in research, it is necessary to generate the model's goodness-of-fit indicators, which was done in this study and whose results (NFI = 0.944, CFI = 0.957 and RMSEA = 0.071) can be compared with those of other works. Thus, Cuevas et al. (2015) proved the hypothesis they proposed in their study, based

Table 6. *Standardized regression weights.*

Variables			Estimate
MEJORA_SERV	**<---**	**CALIDAD_PROC**	**.409**
MEJORA_SERV	**<---**	**TECNOLOGIA**	**.238**
V14	<---	MEJORA_SERV	.410
V21	<---	MEJORA_SERV	.550
V20	<---	MEJORA_SERV	.978
V19	<---	MEJORA_SERV	.661
V18	<---	MEJORA_SERV	.949
V17	<---	MEJORA_SERV	.808
V13	<---	MEJORA_SERV	.405
V1	<---	CALIDAD_PROC	.766
V2	<---	CALIDAD_PROC	.703
V3	<---	CALIDAD_PROC	.707
V4	<---	CALIDAD_PROC	.631
V5	<---	CALIDAD_PROC	.696
V6	<---	CALIDAD_PROC	.599
V7	<---	CALIDAD_PROC	.638
V21	<---	V14	.127
V11	<---	TECNOLOGIA	.642
V12	<---	TECNOLOGIA	.927

Source: Prepared by the authors.

on the good results of goodness-of-fit variables NFI = 0.925, CFI = 0.957 and RMSEA = 0.066.

CONCLUSIONS

The validity and reliability of the instrument used to measure all the items, as a whole and individually, have shown very good results, close to 1 for the KMO and Cronbach's alpha index.

With the application of structural equations, it was possible to determine a technique to create a model for improving the identity registration service.

This study made it possible to demonstrate that process quality and technology strengthen the improvement of the identity registration service.

The general hypothesis and the specific hypotheses were all proved.

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APPENDIX 1

QUESTIONNAIRE FOR CITIZENS COMING FOR PROCEDURES

Application of a 5-level Likert scale: 1: Strongly disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly agree.

PROCESS QUALITY	
1.	How satisfied are you with the way your complaints are handled?
2.	Do you consider the Organization to be a leader in customer-citizen service?
3.	How satisfied are you with the participation of the personnel who assist you in the process of obtaining your DNI?
4.	How do you rate the activities carried out to obtain the DNI?
5.	How do you rate the progress made by the Organization in the last few years for obtaining the DNI?
6.	Do you think that the study of the suggestions made by customers-citizens is an important part of the implementation of improvements?
7.	Is there any communication between the Organization and the Client-citizens through the platform, networks, chat or other means?
TECHNOLOGY	
8.	How do you rate the digitalization of registration documents (converting physical documentation to digital format) for faster service of procedures?
9.	Do you consider that the digitalization of registration documents will favor their physical preservation?
10.	Do you consider that the use of biometric verification (when the fingerprint is taken and compared to an existing fingerprint in the database) is necessary to minimize identity theft?
11.	Do you believe that biometric verification is a tool that allows establishing high reliability security levels for the provision of services that entities provide to their customers?
12.	How do you rate the services implemented by the Organization to be performed over the Internet so you do not need to leave home?
13.	Regarding the procedure to obtain a duplicate of DNI through the Banco de la Nación, how do you rate this service?
14.	Do you consider that the use of *Plataformas Virtuales Multiservicios* [Virtual Platforms for Diverse Services] (PVM) installed in shopping malls throughout the country will speed up the procedures you carry out?
SERVICE IMPROVEMENT	
15.	How do you rate the work carried out by the Organization to improve the procedure time for identity registration?
16.	Do you consider important the services *Captura en Vivo* [Live Capture] and *Descentralización del DNI* [DNI Decentralization] implemented to reduce the procedure time?
17.	How do you rate the launching of the virtual service platform RENIEC Móvil Facial (from your cell phone) for the improvement of services?
18.	Regarding the quality of the service, do you consider that the Organization is improving in the attention it provides?
19.	Regarding the product DNI, do you consider that the Organization is making an effort to deliver a quality product without errors?
20.	Do the new services implemented by the Organization contribute to reduce the expenses that you had to pay in the past?
21.	Do you consider that the Organization should continue implementing improvements to continue reducing costs?

Source: Prepared by the authors.