

Influence of people, processes and technology on business strategy in small enterprise in a Covid 19 environment

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ABSTRACT

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The business context has been affected by the action of Covid 19, and companies must react to this new reality. The research analyzes people, processes and technology and their effect on the development of the respective business strategy in small companies in Huancayo, Peru. The study design was non-probabilistic, cross-sectional, qualitative-quantitative and explanatory in a sample of 99 business units. The analytical technique used was structural equation modeling based on PLS. The results indicate that there is a positive relationship between the processes and technology used and the implementation of actions to achieve their objectives. No significant relationship was found with people, given that in the face of the health emergency, economic paralysis, closure of markets and sectors, the companies had to make decisions and postpone concern for human resources. The coefficient of determination (R^2) was 79.3%, which shows that the model presented allows predicting future results.

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1. Introduction

The hyper-competitive market where companies move without distinction of size or sector, means that they must develop strategies aimed at satisfying the needs of their local, national or international consumers which will ensure their successful permanence in this context. The current pandemic that has been going through the world, has revealed the lack of resources to respond to the demands of customers, having to reformulate their processes to make them efficient and market-oriented, prepare staff, providing them with new skills and abilities for face-to-face or remote work and implement technology in order to establish communication mechanisms and internal and external relations; in this framework, it is important to know how the small and micro enterprises of Huancayo, Peru are using these factors and the implication they are having in the development of their respective business strategies. The interest in this synergy of factors was expressed by Sánchez-Egea & López-De la Calle (2018) who stressed that industrial transformation must be aimed at generating autonomous and highly efficient production processes with the support of robots, offering quality goods and services, high added value and within the established deadlines. The study of the importance of people in the development strategy of organizations was addressed by Al-Hammadi (2021) who evaluated the impact of learning on the levels of creativity of employees promoting collective learning, with shared vision, systemic thinking and interest in paradigms and organizational culture. Making employees develop competencies and promoting knowledge management are fundamental for collective learning as part of the organizational culture (Abdalkarim Alzuod & Majali, 2021).

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Galbraith (2015) indicates that organizations, in the desire to achieve efficiency and effectiveness (effectiveness) it is necessary to align processes, the incentive system (rewards and punishments) and the management of people with the organizational structure (organizational chart); this alignment must be found in parallel in the same direction of the business strategy. For example, there are organizations that implement information technologies without success, since their operationalization is far from the strategy that leads to competitive advantage and respective sustainability (Batyashe & Iyamu, 2020). Parent and Cusack (2016) highlighted the study of people, technologies and processes as the basic elements of cybersecurity, establishing an adequate articulation of them in the face of the risks inherent on the internet. Information technologies have not been detached from business strategy; therefore, Sukri and Yusoff (2019) present a broad review where they include concepts, descriptions, studies and experiences. On the other hand, Sartal & Vázquez (2017) explored the convergent and divergent relationships between Operational Excellence (EO), Information Technology (IT) and its implication in the redesign of manufacturing systems, highlighting the planning and adaptation capacity of industries. These relationships between business development and technologies, especially artificial intelligence (AI) and blockchain, allow the establishment of new spaces for collaboration and generation of best business practices and strengthening of relationships with customers, within the framework of business innovation (Wang, 2022). It is known that the Covid 19 pandemic has modified the way companies relate to their customers, generating new business models from the incorporation of technologies (Rangarajan et al., 2021), where the alignment of these with the business strategy is fundamental, especially of small companies, given that their continuity in the market depends on their ability to react and adapt. In the present study, the research question that was posed was: How are people, processes and technology related in the business strategy of small companies in the province of Huancayo, Peru?, while the stated objective was: To know the relationships between people, processes and technology with the business strategy in the context, space and time defined.

The research is justified from the theoretical perspective as it seeks to strengthen the approach of strategic alignment based on the integration of people, processes and technology; while the practical justification is given by the possibility of finding what is the determining factor of the strategy in small companies for the establishment of factorial actions for the achievement of objectives; while the social justification is oriented to the fact that these defined courses of action contribute to the economic, financial and market sustainability of the companies that are part of the study. The methodological justification is associated with the provision of a way of studying business strategy based on the conjugation of people, processes and technology.

2. Literature review

2.1. Models of structural equations

Known as part of a set of multivariate statistical models that allow to calculate the relationships and effect between various variables; arises with the purpose of providing greater slack to typical regression models, allowing the inclusion of measurement errors in dependent (criterion) and independent (predictor) variables. There are several models of factor analysis that allow analyzing direct and indirect effects (Ruiz, 2010). The main advantage offered by structural equation models is that they allow to design and test statistically, the nature and direction of the relationships that are proposed models since they facilitate proposing and statistically testing the type and direction of the relationships between the variables that are part of the model to then estimate parameters and indicators, seeking in this way to confirm the connections from the base theory (Byrne, 2010).

2.2. Strategy

Its definition and application have been going on for many centuries, specifically in the military field; to later move to the economic, political, religious, social and cultural levels. For Porter (2008), the competitive strategy is to be different from the other market participants, it is to choose which distinctive actions are implemented to generate a new and different value proposition to the client. According to Alaña et al. (2018), the strategy is given by the set of operations, which leads to obtaining a competitive advantage in the market, through resources that the company has such as human, technological, material and architecture; these at the same time will generate added value towards the goods and services offered by small and medium-sized enterprises. Then, the strategies are the result of the analyses that are carried out both internally and in the environment of the companies; on the basis of this, it is necessary to design courses of action to achieve the proposed objectives; it is also established that strategy is the way in which business resources are distributed and allocated in pursuit of the goals and objectives set (Contreras, 2013). The objectives are what we want and the strategy for how we are going to achieve that purpose. The resources or means through which the objectives are achieved are the strategies, which can be oriented to expansion, diversification, market development, improvement of the competitive position in the market, etc. The achievement of objectives requires managers and entrepreneurs to make decisions and allocate resources, considering internal and external factors (David, 2008).

2.3. People

People are a fundamental part of all organizational action, Checkland (2019) reiterates the importance of conceiving the organization as a system of human activity, given that the processes defined within, are finally carried out or considered as a basis for the decisions made by people, so their presence and consideration is essential. Neumann et al., (2021) mention that

in the current circumstances of Industry 4.0, the role of people is moving from merely operational processes to decision-making processes, in this sense the consideration of employees within organizations continues to be transcendent when developing development and innovation strategies. It is important to pay attention to the employees of the company, because the understanding of their perceptions regarding the work they do and the implications they have on their personal and work happiness, make them able to perform better; in this sense, the generation of pleasant work experiences are important (Bastos & Barsade, 2020; Rosso et al., 2010).

2.4. Processes

Lindsay et al. (2003) indicate that "business processes are a sequence of activities that transform inputs into outputs" (p. 1016); according to its previously established objectives or interests, which gives it the connotation of a set of activities with purpose (Ould, 1995). Thinking about processes is thinking about how to generate value for the customer and the organization. This scope is valid for public and private companies in the extractive, service, productive, commercial areas, etc., since they all develop actions with a defined purpose and must articulate their activities and resources to achieve objectives (Miranda-Torrez, 2021).

2.5. Technology

In business, technology must be oriented to the improvement of processes and generation of positive customer experiences (internal and external). The incorporation of technology through digital transformation has generated that companies can establish links with suppliers and distributors, as well as the inclusion of end customers in certain processes, whether productive or service (Proskurnina, 2021). Coccia (2019) conceives technology as a complex and integrated system of equipment that will be used by people to meet needs, solve problems and achieve objectives, adapting to changing environments, since it is associated with evolution and innovation. Well-carried technology allows to create competitive advantage (Porter, 1985).

3. Methodology

3.1. The research model

The research model shown in Fig. 1 is based on the proposal made by Chen & Popovich (2003) in which they link people, processes and technology and orient them towards customer relationship management (CRM) as a business strategy for competitiveness. This strategy or way of serving customers and building customer loyalty is conceived as an organized whole that takes advantage of technologies to know the customer, accelerate processes and facilitate people's work (Chen & Ching, 2004).

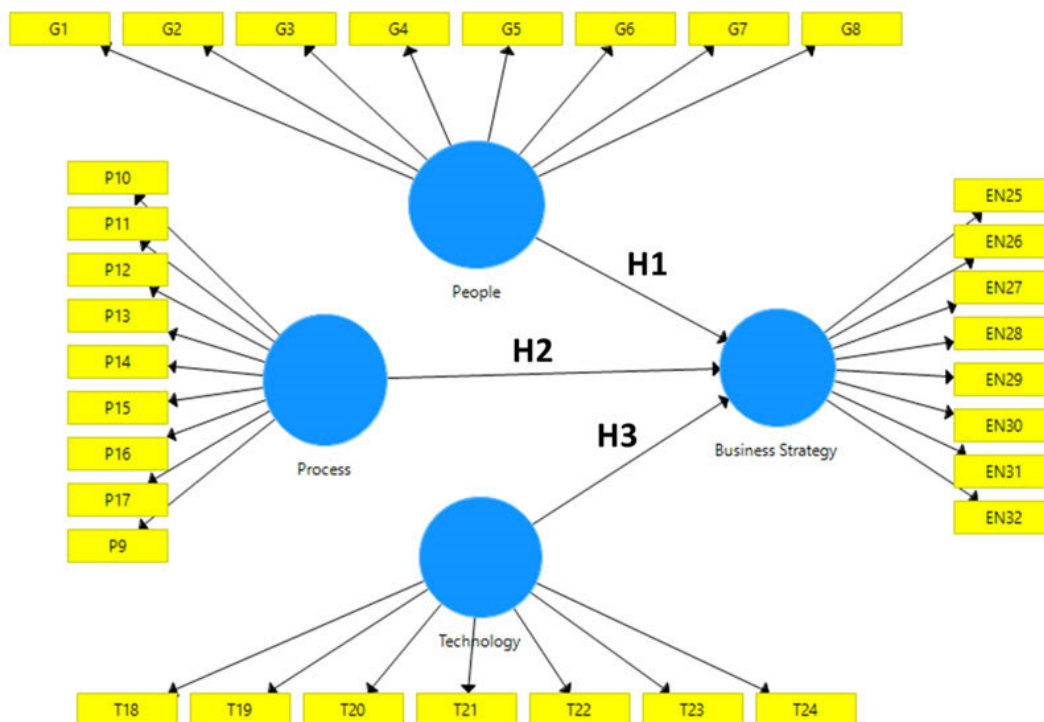


Fig. 1. Proposed research model

Hypothesis 1 (H1): *The organizational characteristics of the people (P) are positively related to the development of the business strategy (BS) of the micro enterprises in Huancayo, Peru.*

Hypothesis 2 (H2): *The procedural characteristics (PR) are positively related to the development of the business strategy (BS) of the micro enterprises in Huancayo, Peru.*

Hypothesis 3 (H3): *The organizational technological characteristics (T) are positively related to the development of the business strategy (BS) of micro enterprises in Huancayo, Peru.*

3.2. Participants

The study was done with a total of 99 people among owners, managers and collaborators of microenterprises in the province of Huancayo, Peru. This sample is in accordance with the Ten Times Rule (Hair et al., 2017) and its distribution is shown in Table 1.

Table 1

Distribution by job position of the sample.

Employment position	Number	Percentage
Entrepreneur owner	17	17.17%
Manager or supervisor	10	10.10%
Employee	72	72.73%

This composition is adequate, since more than 25% of the respondents are part of the strategic apex within the formal and spontaneous structure of the organizations that were part of the study. On the other hand, the characteristics of the microenterprises to which the respondents belong are defined by the sectoral activity included in Table 2.

Table 2

Sectorial distribution of the micro enterprises in the sample

Sector	Number	Percentage
Commercial	25	25.25%
Services	52	52.53%
Productive – industrial - manufacturing	12	12.12%
Extractive mining	6	6.06%
Other	4	4.04%

As for the seniority of the companies in the market, those that are already established and have years of experience have been preferred. The distribution by age is detailed in Table 3.

Table 3

Distribution of the sample by age

Years of presence in the market	Number	Percentage
From 0 to 1 year	10	10.10%
From 1 to 3 years	21	21.21%
From 3 to 5 years	15	15.16%
From 5 to 7 years	5	5.05%
More 7 years	48	48.48%

About 90% of the companies whose collaborators are part of the study, have more than a year of permanence in the Huancayo market, which ensures that the processes and technology incorporated or developed, are duly established and that the people who work in them, have the required experience and understanding of the business strategy that is followed in the organization.

3.3. Instrument

The questionnaire was constructed by the authors based on the corresponding theoretical framework and is composed of 32 items, distributed in 4 dimensions: People, Processes, Technology and Business Strategy with 9, 8, 7 and 8 reagents (indicators) respectively. All items were evaluated on a Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). The instrument was delivered virtually to study participants through Google Forms due to pandemic restrictions. The average time it took to respond was 6 minutes. The confidentiality of the data is ensured and the informed consent is recorded.

4. Results

4.1. Confirmation of the measurement model

The evaluation of the measurement model has been carried out through the calculation of reliability (Cronbach's alpha and composite reliability), convergent validity and discriminant validity, these values are shown in Table 4.

Table 4
Measurement model results

Constructs	Reliability		Convergent validity		Discriminant validity		
	Cronbach alpha	Composite reliability	Average variance extracted	EN	G	P	T
Business Strategy	0.956	0.956	0.731	0.855			
People	0.916	0.916	0.578	0.819	0.761		
Process	0.948	0.949	0.673	0.811	0.685	0.820	
Technology	0.948	0.948	0.723	0.829	0.749	0.747	0.850

The reliability of the measurement model has been calculated through Cronbach's alpha and composite reliability. From the results and based on what Nunnally (1978) indicated, it is observed that there is a good internal consistency, since the value of Cronbach's alpha is greater than 0.9 in all cases. Similarly, the values of the composite reliability coefficients are above 0.9, which expresses a very satisfactory composite reliability (Nunnally & Bernstein 1994). The validity of the construct is reviewed through convergent validity and discriminant validity. Cepeda & Roldan (2004), indicate that convergent validity is calculated with the Average Variance Extracted (AVE) and seeks to evaluate whether the different items intended to measure a given construct measure the same. The AVE coefficient provides the value of the variance between a given construct and its indicators; its value must be greater than 0.50 (Hair et al., 2017). In the present study, the ave values have been greater than 0.57, which means an adequate convergent validity (Fornell & Larcker, 1981). For the evaluation of discriminant validity, the square roots of the corresponding AVE were compared with the correlations between latent variables (Fornell & Larcker, 1981), resulting in the roots of the AVE, greater than all latent correlations. Consequently, it can be concluded that the results of the measurement model contained in Table 4 indicate that all items are reliable indicators of the hypotheses being formulated.

4.2. Analysis of the structural equation model

For the corresponding hypothesis test, a structure model and the respective path coefficients (value β), coefficient of determination R^2 and the value t after bootstrapping (5000 subsamples) have been used. Figure 2 shows the evaluation of the structural model, the path coefficients and the associated t -values are attached.

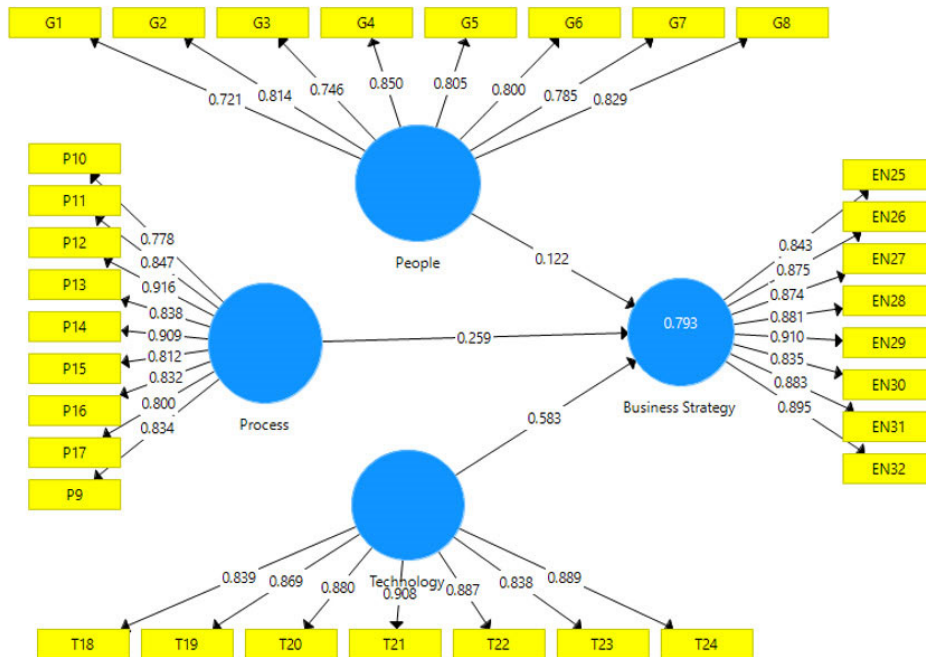


Fig. 2. Confirmatory structural model for business strategy

With the results shown in Figure 2, the hypotheses raised are evaluated to establish their acceptance or rejection. Table 5 includes a summary of data and incorporates the p-value and value judgment to the hypothesis formulated respectively.

Table 5
Results of the structural model analysis

Hypotheses	Mean sample	Standard deviation	Path beta value	Student's t statistic	p value	Decision
H1: P -> BS	0.139	0.117	0.122	1.044	0.297	Rejected
H2: PR -> BS	0.262	0.092	0.259	2.815	0.004	Accepted
H3: T -> BS	0.563	0.121	0.583	4.827	0.000	Accepted

$t > 1.96$; $p < 0.05$

Based on the results shown, H1 is rejected and hypotheses 2 and 3 (H2 and H3) are accepted. For research purposes, Processes (PR) ($\beta=0.259$, $p<0.005$) and Technology (T) ($\beta=0.583$, $p<0.005$) maintain a positive relationship with Small Business Strategy (BS). The people and business strategy relationship is not accepted because it is not significant ($p>0.05$). The value of R^2 indicates that the model expresses collectively and in interaction a predictive capacity of 79.3%. In order to ensure that the variations between the values of the observed data and the prediction values of the same, are small and do not present a bias, it is that the adjustment of the model has been made. In this sense, the SRMR (Standardized Root Mean Square Residual) has been calculated, which is considered as an absolute measure of adjustment, normalizing the difference between the observed correlation and the predicted correlation. According to Hu and Bentler (1999) SRMR values should be below 0.08 (good fit) and 0 (perfect fit). The value of the SRMR for the present investigation has been 0.056, which represents a good fit. Also, the Normed Adjustment Index (NFI) has been calculated, the same one that makes a comparison between the proposed model and the null model; as an acceptable value, figures greater than 0.90 are considered (Byrne, 2010). The study has obtained a Standard Adjustment Index (NFI) of 0.91, which is acceptable.

5. Discussion and Conclusion

5.1. In relation to People and Business Strategy

In the present study, the relationship between People and Business Strategy has not been able to be demonstrated, since the p-value obtained is greater than 0.05 with which the hypothesis is not accepted. In contrast to the results obtained in the present study, Maliqueo et al. (2021) establish the need to conceive of people as an important element within the strategic approach to management, making them assume new functions and consider the digitalization of processes and innovation as key success factors in the framework of business digital transformation. Vale-Feig (2021), indicates that this work requires the implementation of a program with a vision of the future, focused on the competencies and skills of employees and that the development of human talent must occur from hiring and become a constant practice.

5.2. In relation to Business Processes and Business Strategy

The research showed that Business Processes have a positive, moderate and significant influence on the development of Business Strategy (path = 0.259, $p = 0.004$); in agreement with Von Rosing (2015), who states that the relationship between business services and the ways in which they are developed through the respective business processes is important. Faced with the new demands posed by the global health situation, small companies had to transform their processes, seeking to make them more efficient through the incorporation of technology, elimination of unnecessary procedures or adoption of new processes that increase operational efficiency, reduce costs and maintain competitiveness; therefore, those who opted to innovate their procedures for customer service and attention will be able to remain in the market despite the moments of crisis (Garcia et al., 2021).

5.3. In relation to Technology and Business Strategy

Finally, the study confirmed the relationship between Technology and Business Strategy (path = 0.583, $p = 0.000$) being positive, strong and significant. This reality is manifested by Baugh (1993) who indicates that Information Technologies (IT) are constituted as a platform oriented to the generation and sharing of information contained in databases and that they will contribute to strategic decision making in the company. In the current circumstances in which Covid19 has accelerated the approach to information technologies, it is necessary to strengthen the it architecture of companies and lay the foundations for a subsequent digital transformation associated with the proposed business strategy (Proskurnina, 2021). This reality has been manifest in small businesses, since as a result of the pandemic and as part of the business survival actions, they have had to implement technological solutions to give continuity to their administrative and productive operations, development of e-commerce platforms, means of payment such as Yape, Luquita, Blim, among others; the use of instant messaging systems such as WhatsApp, Messenger and Telegram; as well as video conferencing means such as Google Meet and Zoom for virtual meetings. In this purpose, it is important to establish policies of technological implementation and transition to digital transformation based on the nature, dimension and degree of technological maturity of companies (Dini et al., 2021).

References

- Abdalkarim Alzuod, M., & Majali, T. (2021). The Role of Organizational Culture as Moderator in the Relationship between Knowledge Management and Organizational Learning in Jordanian Universities. *Academy of Strategic Management Journal*, 20, (S6).
- Alaña Castillo, T. P., Crespo García, M. K., & Gonzaga Añazco, S. J. (2018). ¿Cómo las estrategias empresariales permiten una ventaja competitiva en las micro, pequeñas y medianas empresas de la provincia de El Oro? *Universidad y Sociedad*, 10(2), 251-256.
- Al-Hammadi, R. A. S. (2021). Organizational learning and its impact on organizational creativity and analytical exploratory study of the investment authority in Thi Qar Governorate. *Academy of Strategic Management Journal*, 20(6), 12.
- Bastos, W., & Barsade, S. G. (2020). A new look at employee happiness: How employees' perceptions of a job as offering experiences versus objects to customers influence job-related happiness. *Organizational Behavior and Human Decision Processes*, 161, 176–187. <https://doi.org/10.1016/j.obhdp.2020.06.003>
- Batyashe, T., & Iyamu, T. (2020). A Model for Operationalizing the Information Technology Strategy Based on Structuration View. *Advances in Science, Technology and Engineering Systems Journal*, 5(3), 371-379. <https://doi.org/10.25046/aj050348>
- Baugh, P., Gillies, A., & Jastrzebski, P. (1993). Combining knowledge-based and database technology in a tool for business planning. *Information and Software Technology*, 35(3), 131–137. [https://doi.org/10.1016/0950-5849\(93\)90050-d](https://doi.org/10.1016/0950-5849(93)90050-d)
- Byrne, B.M. (2010). *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming*, Second Edition (2nd ed.). Routledge. <https://doi.org/10.4324/9780203805534>
- Cepeda, G., & Roldán, J. L. (2004). Aplicando en la práctica la técnica PLS en la administración de empresas. *Congreso de la Asociación Científica de Economía y Dirección de la Empresa*. Murcia, España.
- Checkland, P. (2019). Reflections on 40 years in the management field: A parthian shot (friendly). *Journal of the Operational Research Society*, 70(8), 1219-1223. <https://doi.org/10.1080/01605682.2019.1590137>
- Chen, I.J., & Popovich, K. (2003). Understanding customer relationship management-people, process and technology. *Business Process Management Journal*, 9(5), 672-688. <https://doi.org/10.1108/14637150310496758>
- Chen, I.J., & Ching, R. (2004). An Empirical Study of the Relationship of IT Intensity and Organizational Absorptive Capacity on CRM performance. *Journal of Global Information Management*, 12(1), 1-17.
- Coccia, M. (2019). What is technology and technology change? A new conception with systemic-purposeful perspective for technology analysis. *Journal of Social and Administrative Sciences*, 6(3), 145-169.
- Contreras Sierra, E. R. (2013). El concepto de estrategia como fundamento de la planeación estratégica. *Pensamiento & gestión*, (35), 152-181.
- David, F. (2008). *Conceptos de administración estratégica*. Pearson Education.
- Dini, M., Gligo, N. & Patiño, A. (2021). *Transformación digital de las mipymes: elementos para el diseño de políticas*. CEPAL.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.2307/3151312>
- Galbraith, J. K. (2015). *Inequality and instability: A study of the world economy just before the great crisis* (pp. 1-336). <https://doi.org/10.1093/acprof:osobl/9780199855650.001.0>
- García Monsalve, J. J., Tumbajulca Ramírez, I. A., & Cruz Tarrillo, J. J. (2021). Innovación organizacional como factor de competitividad empresarial en mypes durante el Covid-19. *Comuni@cción*, 12(2), 99-110. <https://dx.doi.org/10.33595/2226-1478.12.2.500>
- Hair, J., Hult, T., Ringle, C., & Sarstedt, M. (2017). *A Primer on Partial Least Square Structural Equation Modeling (PLS SEM)*. California, Estados Unidos: Sage.
- Hu, L. & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55.
- Lindsay, A., Downs, D., & Lunn, K. (2003). Business processes—attempts to find a definition. *Information and Software Technology*, 45(15), 1015–1019. [https://doi.org/10.1016/s0950-5849\(03\)00129-0](https://doi.org/10.1016/s0950-5849(03)00129-0)
- Maliqueo Pérez, C., González Candia, J., Mardones Espinosa, R., & Ardiles Briones, M. (2021). Gestión de personas y las barreras para innovar en la transformación digital. *Revista Venezolana de Gerencia*, 26(94), 510-532. <https://doi.org/10.52080/rvgluzv26n94.4>
- Miranda-Torrez, J. (2021). Acciones competitivas y desempeño organizacional en la perspectiva dinámica competitiva. *Investigación administrativa*, 50(127), 12710. <https://doi.org/10.35426/iav50n127.10>
- Neumann, W. P., Winkelhaus, S., Grosse, E. H., & Glock, C. H. (2021). Industry 4.0 and the human factor – A systems framework and analysis methodology for successful development. *International Journal of Production Economics*, 233 <https://doi.org/10.1016/j.ijpe.2020.107992>
- Nunnally, J. C. (1978). *Psychometric Theory*. McGraw Hill.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. McGraw-Hill.
- Ould, A. Martyn. (1995). *Business Processes: Modelling and Analysis for Reengineering*. Wiley.
- Parent, M., & Cusack, B. (2016). Cybersecurity in 2016: People, technology, and processes. *Business Horizons*, 59(6), 567-569. <https://doi.org/10.1016/j.bushor.2016.08.005>
- Porter, M. E. (1985). Technology and competitive advantage. *Journal of business strategy*, 5(3), 60-78.

- Porter, M. (2008). *¿Qué es la estrategia?* Harvard Business Publishing Education. <https://hbsp.harvard.edu/>
- Proskurnina, N. V., Shtal, T. V., Slavuta, O. I., Serogina, D. O., & Bohuslavskiy, V. V. (2021). Omnichannel strategy of digital transformation of retail trade enterprise: From concept to implementation. *Estudios de Economía Aplicada*, 39(6) <https://doi.org/10.25115/eea.v39i6.5238>
- Rangarajan, D., Sharma, A., Lyngdoh, T. & Paesbrugge, B. (2021). Business to business selling in the post COVID 19 era: Developing an adaptive sales force. *Business Horizons*, 64,(5), 647-658. <https://doi.org/10.1016/j.bushor.2021.02.030>
- Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. *Research in Organizational Behavior*, 30, 91–127. <https://doi.org/10.1016/j.riob.2010.09.001>
- Ruiz, M. A., Pardo, A., & Martín, R. S. (2010). Modelos de ecuaciones estructurales. *Papeles del Psicólogo*, 31(1), 34-45.
- Sánchez-Egea, A., Lopez-De La Calle Marcaide, L.. (2018). Machines, processes, people and data, the keys to the 4.0 revolution. *DYNA*, 93(6), 576-577. <https://doi.org/10.6036/8807>
- Sartal, A., & Vázquez, X. (2017). Implementing Information Technologies and Operational Excellence: Planning, emergence and randomness in the survival of adaptive manufacturing systems. *Journal of Manufacturing Systems*, 45, 1-16. <https://doi.org/10.1016/j.jmsy.2017.07.007>
- Sukri, S., & Yusoff, R. Z. (2019). Technology strategy: Literature review and issues. *International Journal of Innovation, Creativity and Change*, 8(6), 67-84.
- Vale-Feigl, A. (2021). People, Not Technology, Drive Digital Transformation. *TD: Talent Development*, 75(1), 34–39.
- Von Rosing, M., Laurier, W., & M. Polovina, S. (2015). *The BPM Ontology. The Complete Business Process Handbook*, 101–121. <https://doi.org/10.1016/b978-0-12-799959-3.00007-0>
- Wang, Z., Mingyu, L., Jia, L., & Xin, C. (2022). Business innovation based on artificial intelligence and blockchain technology. *Information Processing and Management Journal*, 59, 102759. <https://doi.org/10.1016/j.ipm.2021.102759>



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