

## **How Customer Analytics Capability Influence Organizational Performance? A moderated mediation analysis.**

### **Autoria**

Alamir Costa Louro - [alamirlouro@gmail.com](mailto:alamirlouro@gmail.com)

Prog de Pós-Grad em Admin - PPGAdm/UFES - Universidade Federal do Espírito Santo

Marcelo Moll Brandão - [mollmkt@gmail.com](mailto:mollmkt@gmail.com)

Prog de Pós-Grad em Admin - PPGAdm/UFES - Universidade Federal do Espírito Santo

Arthur França Sarcinelli - [thearthursarcinelli@gmail.com](mailto:thearthursarcinelli@gmail.com)

Prog de Pós-Grad em Admin - PPGAdm/UFES - Universidade Federal do Espírito Santo

### **Resumo**

A theoretical model is proposed to test the relationship between Customer Analytics Capability and Market Orientation with Organizational Performance, encompassing Marketing Capabilities as a mediator moderated by Environmental Dynamism. Its contribution lies in the test of this moderated mediation in different types of industries in Brazil using SmartPLS for structural equation modeling and SPSS PROCESS macro for mediation test deepening insights. The work gives support to a better understanding of capabilities types and proposes an adaptive new one, Customer Analytics Capability, which is the final insertion of Analytics concept in Marketing and Strategy disciplines.

## How Customer Analytics Capability Influence Organizational Performance? A moderated mediation analysis.

### Abstract

A theoretical model is proposed to test the relationship between Customer Analytics Capability and Market Orientation with Organizational Performance, encompassing Marketing Capabilities as a mediator moderated by Environmental Dynamism. Its contribution lies in the test of this moderated mediation in different types of industries in Brazil using SmartPLS for structural equation modeling and SPSS PROCESS macro for mediation test deepening insights. The work gives support to a better understanding of capabilities types and proposes an adaptive new one, Customer Analytics Capability, which is the final insertion of Analytics concept in Marketing and Strategy disciplines.

**Keywords:** *Customer Analytics Capability*. Market Orientation. Marketing Capabilities.

### INTRODUCTION

The market dynamics, including its (de) regulation, (de) globalization, information technology (IT) commodification, the emergence of new revolutionary technology and national and international political uncertainties, beyond the cultural differences (Conti, Parente, & de Vasconcelos, 2015) alter the environmental dynamism and competitive advantage search. The organizations need to learn or even anchor themselves in the decision-making based on rationality, and ultimately compete by collecting, analyzing, and acting data-driven (Davenport, 2006).

In this data-driven decision-making scenario, increasingly the organizations will be working in the interface, between econometrics, psychometrics, statistics and computer science, as exemplified in the historical revision of Marketing discipline methods of Wedel and Kannan (2016). Additionally, Marketing discipline is the first choice for data-driven decision-making, easing organizations in markets dynamics, for example, in customer segmentation, in customer behavior analysis for online campaigns or cross-selling recommendation systems (Provost & Fawcett, 2013).

In Wade and Hulland (2004) there was already the tendency of Information Systems, Dynamic Capabilities, and Resource Based View (RBV) literature, supporting themselves to explain the latent phenomenon of the technologies that bring the creation and improvement of Organizational Performance. For example, the information volume conveyed by “Big Data”, or related to the connectivity of the customer by the mobiles and the Internet of Things (IoT). Another example is the innovative use of information already available within the organizations or even within some digital media by data mining. These phenomena are recent, complex and hugely debated (Wamba et al., 2017), but little explored empirically (Germann, Lilien, Fiedler, & Kraus, 2014).

The advanced analysis with customer emphasis, nominated by the present work as Customer Analytics, helps transform organization internal or external data, structured or not, in strategic information. It demands some in-depth Marketing modeling techniques knowledge for prediction of the market's response, and optimization of marketing-mix and personalization for the customers (Wedel & Kannan, 2016). With this contemporary phenomenon and utilizing traditional literature of Market Orientation (MO) and Marketing Capabilities (MC) it is expected to expand Dynamic Capabilities (DCs) knowledge. This approach is similar to Kozlenkova, Samaha, and Palmatier (2014) that also included in the DCs framework the concepts of performance, MO and innovation, encompassing new technological phenomenon

The most prominent contribution of the present work is found in the establishment of the association between the concepts of Customer Analytics Capabilities (CAC) and MO mediated by MC to reach Organizational Performance in different types of industries and environmental dynamism. Additionally, another underpinning contribution is to assist with a more robust knowledge about the diverse sorts of Capabilities in the extant literature, lastly, defining a proper, Customer Analytics Capability. This Capability is found in organizations that continually feel and act upon the emerging trends and technologies in their markets, these organizations are more prone to listen to potential customer opportunities.

These conceptual elements, already known in literature, market knowledge, MCs, absorptive capability and Customer Analytics together are fundamental to the present work edification as a theoretical model that complement the building blocks found in works like Morgan, Vorhies and Mason (2009), Day (2011) and Morgan (2012). Synthetically, the paper understands that the market knowledge is utilized by the MCs to produce performance and CAC helps in this process by encompassing the absorptive capability. This approach is inspired by Kohli and Jaworski (1990) that talks about a particular market information vision based on Market Orientation theory.

## THEORETICAL REVIEW

There are high number and variety of studies that relate Dynamic Capabilities and Marketing (Barrales-Molina, Martínez-López, & Gázquez-Abad, 2014). These authors say that different visions became hard to synthesize and compare, there is a “wide range of Marketing resources, capabilities and, processes” (p.2) that hinder the connection and integration of these elements into a common framework. The present work assumes that there are specific MC different from operational Capabilities (Morgan, 2012) and different from learning capabilities (Pavlou & Sawy, 2010).

Morgan, Vorhies, and Mason (2009) confirm the importance of MO used in conjunction with DCs, these authors suggest the integration between market knowledge and Marketing Capabilities as a way to comprehend the Organizational Performance (OP). Therefore these authors’ approach is similar to the present work. Additionally, its work measured OP in an objective and subjective manner. Performance is a multidimensional concept, whose attributes change throughout time, as well as among stakeholders and organizations (Matitz & Bulgacov, 2011). Morgan, Vorhies, and Mason (2009) effectuated performance measurement in a scenario which involved the MO, DC and MC, than this approach it’s not a new topic, but performance is still a complex construct and is not the focus of the present work. Due to the difficulty of the gathering objective performance results in a cross-industry survey, the present work only measures performance in a subjective way.

Germann and others (2014) discuss underspend of Customer Analytics technologies on retailing despite the high potential use on this industry. These authors postulate the industries attributes that more likely to benefit themselves, like the existence of plenty of customer data, adequate technology for specific customers problems, and the possibilities of these technologies to support repetitive decisions. Talking about analytics as a general area, like Business Analytics, Customer Analytics, Big Data Analytics, other industries have been also studied in a specialized manner. For example, health-care industry (Wang & Hajli, 2017), banks (Persson & Ryals, 2014) and Information Technologies (Braganza, Brooks, Nepelski, Ali, & Moro, 2017). Otherwise, the type of industry interferes on the Analytics usage (Wamba et al., 2017).

The CAC can be classified as an Adaptive Marketing Capability (Day, 2011), which also differ from some Capabilities types, the author, discussing the “Marketing

Capabilities Gap” criticize the current RBV literature, and even the current DC literature, as less dynamic theories than the environment demands, suggesting the existence of the Adaptive Capabilities. Regardless of the adopted terminology, dynamic or adaptive, for the present work these information sources are better explored when utilized with CAC, which reflects the customer information quality, is explored by a team with specific expertizes after a learning process, similar to the view of Day (2011). This second order construct has its three reflective constructs detailed next.

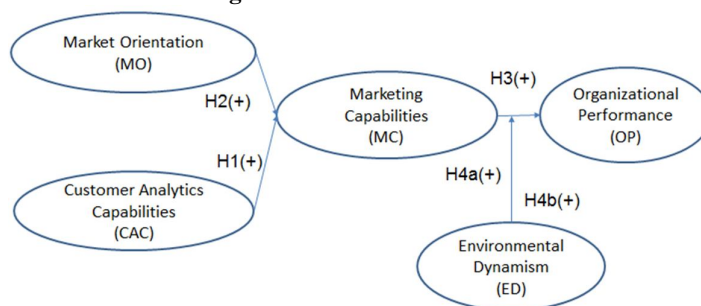
Customer information quality, the CRM concept is giving space to a more open perspective which recognizes new Capabilities enabled by revolutionary emerging technologies, like, the social media usage to gather customer information (Trainor, 2012). On this enlarging context, to exemplify, Netflix analyzes millions of their viewers’ data in real time, helping to determine if a new pilot movie will become a successful option (Xu, Frankwick, & Ramirez, 2016). These authors still say that other daily basis scenarios are disrupted by Big Data Analytics, perceived in the present work as only a revolutionary emerging technology, not as a capability because it’s essentially the same predictive method with hundreds of variables. Aside from that, there are others revolutionary emerging technologies that deal with customer data, it is necessary to highlight the ubiquity of the IoT described as “new technology paradigm envisioned as a global network of machines and devices capable of interacting with each other” (Lee & Lee, 2015, p. 431). These authors affirm that IoT, devices or sensors, generate enormous amounts of customer data and can transmit it directly, without a CRM system, to a business intelligence or analytics tools for humans, or not, to make decisions.

Some updated quantitative studies provide empiric evidence that confirms the role developed by the organizational capability to generate dynamism from their innovation team to reach competitive advantage (Barrales-Molina, Martínez-López, & Gázquez-Abad, 2014). An example is described in quantitative work executed with Chinese senior executives, which identified that administrate individual’s knowledge capability provides the exchange and integration of the team knowledge (Tseng & Lee, 2014). And by its turn, this improves the organizational financial performance because it includes return on investments and high profitability which allows the development of products and services in a much faster way and with better quality.

Customer knowledge absorption, Customer Analytics technologies can help in the absorption of the so-called “external competencies”, or “market knowledge” (Barrales-Molina, Martínez-López, & Gázquez-Abad, 2014). Davenport (2006) exemplifies the knowledge absorption saying that the organizations may spend many years accumulating data in different approaches before having enough customer knowledge to analyze a marketing campaign in a trusting and efficient way. This market knowledge is all information that the organization has about the customer and his needs in different situations and various moments, past, present and future (Cooke & Zubcsek, 2017). CAC as an Adaptive Marketing Capabilities (Day, 2011) has a construct that responds to market accelerating velocity and complexity with a more outside-in and exploratory absorptive capability. The Customer knowledge absorption is a capability with the improvement of vigilant market learning, experimentation and, openness (Day, 2011).

The previously described constructs and the hypothesis explained next resulted in the theoretical model presented in Figure 1.

Figure 1 – Theoretical Model



Source: Prepared by the author (2018)

The customer knowledge absorption is a fundamental point of connection between the present paper constructs. The ways of absorption and the knowledge nature may be diverse, from CRMs, digital media, new revolutionary technologies, etc. Notwithstanding, there is a suggestion about “the effectiveness of the CRM activities depends on how CRM is integrated with firm's existing processes and preexisting capabilities” (Boulding et al., 2005, p. 158). In brief, CAC as an adaptive marketing capability depends on preexisting marketing capabilities, this is the reason to test the mediation.

Explaining the dependence of some Capabilities to others one, the CRM systems are defined as enablers to MCs (Barrales-Molina, Martínez-López, & Gázquez-Abad, 2014). Additionally, they say that these systems and other technologies uphold the market's knowledge absorption, acting in a cross-functional way into the organizations. Here using a much broader scope for the CRM term, by encompassing customer analytics, it is declared the first hypothesis:

**H1. CAC has a direct positive effect on Marketing Capabilities.**

From an extensive bibliographic revision, it's confirmed a strong relationship between Market Orientation (MO) and MCs in the literature (Barrales-Molina, Martínez-López, and Gázquez-Abad, 2014). With an empirical work Morgan, Vorhies, and Mason (2009) said that the MO has a liberating effect over the MCs, which make the organization more dynamic. Using the argument from previous authors the following hypothesis is declared:

**H2. Market Orientation has a direct positive effect on Marketing Capabilities.**

Marketing literature is worried about the relationship between organizational Marketing and performance constructs using Dynamic Capabilities (Morgan, 2012; Kozlenkova, Samaha, & Palmatier, 2014) including the term MC. To confirm the literature result the following hypothesis is declared:

**H3. The Marketing Capabilities have a direct positive effect on Organizational Performance.**

Market Orientation (MO) is significantly related to organizational performance while other Marketing Capabilities (MC) interacts with MO (Morgan, Vorhies, & Mason, 2009), meaning that MC needs to be beside the MO to boost performance. These authors haven't tested the MC mediation role, but similar to the present work, these authors use MO and MC together to a market information processing vision, originated in Kohli and Jaworski (1990) work to explain performance.

Trainor and others (2014) didn't find direct relationship evidence between CRM technology use with social media and performance, these authors say that this discovery is consistent with the extant IT literature, which suggests that the technology by itself are not enough to obtain performance improvement, instead of this, the social media technologies only facilitate other capabilities which allow the organizations to cater their customer needs better. From the literature lack of consensus about the MC role between MO, technology and Performance, was chosen to test the mediation for both exogenous constructs separated.

According to Jayachandran and others (2005) the environmental dynamism may motivate different information exchange between organizations because the customers relationship learning may be a critical factor in environments with high dynamism, due to the fast moves in customer needs and technological changes may complicate the customers loyalty. There is a prominent gap between increasing environmental demand and MC in high environment dynamism scenery, and Adaptive Capabilities are the solution (Day, 2011). This is because of deep market insights of organizations that have MO and outside-in exploratory learning capability.

**H4a. Marketing Capabilities have a mediating role between the OM and Organizational Performance and is higher when moderated by Environmental Dynamism.**

**H4b. Marketing Capabilities have a mediating role between the CAC and Organizational Performance and is higher when moderated by Environmental Dynamism.**

#### METHODOLOGICAL ASPECTS AND CONSTRUCTS OPERATIONALIZATION

The phenomenon of the association between the technology and performance has been studied by diverse disciplines and researchers (Chuang & Lin, 2017; Popović et al., 2014), including in Marketing with quantitative approach (Germann et al., 2014) and additionally using Capabilities literature (Chang, Park, & Chaiy, 2010; Wamba et al., 2017). The empirical test of theoretical hypotheses was made using structural equation modeling (SEM). According to Hair et al. (2009) the characteristic of the sample with non-normal data added to the fact that the model has five latent variables, and therefore several interrelated dependency relations led to the use of SEM. In this context, SmartPLS software (version 3.2.4) was chosen, which provides the statistical method of the Partial Least Squares (PLS).

Conservatively, making a statistical power test in 95%, and assuming an R square of 25%, the software Gpower determines, for a significance of 1%, the size of the sample as 179 respondents. The statistical test chosen tries to maximize the multiple regressions R square adding new predictors to the solution,  $f^2$ , (Faul et al., 2007).

The CAC construct scale creation was necessary due to the inexistence of a similar scale to measure the phenomenon with the present work focus. CAC is an Adaptive Capability which uses customer information learnt from market knowledge. CAC can't be confused with the existing Business Analytics constructs which usually deal with greater technological detail (Trainor & Agnihotri, 2010; Wamba et al., 2017).

The first-order CAC constructs are all new. Customer information Quality is an adaptation from Chuang and Lin (2013) scale; Team Expertises has three dimensions (i) Analytical is inspired in Popović and others (2012) and Day (2011); (ii) Technological and (iii) Business, both are inspired in Kim, Shin and Kwon (2012). Finally, Customer knowledge absorption is an adaptation from Pavlou and Sawy, (2013) and Pavlou and Sawy, (2010) scales and Day (2011).



To finish, the references for present work constructs are all based in known Marketing works. Marketing Orientation is the reproduction of Narver and Slater (1990) scale, Marketing Capabilities reproduction of Song, Di Benedetto and Nason (2007) scale, Organizational Performance reproduction of Jaworski and Kohli (1993) scale and, Environmental Dynamism reproduction of Jayachandran et al. (2005) scale.

## RESULTS ANALYSIS

To test the hypotheses, it's used a survey data from Brazilian users of LinkedIn, without additional treatments, totaling (n =179) records. There is no missing data. The PLS algorithm was executed with the default values following the guidelines of Hair et al. (2017). All constructs have more than one variable and are reflexive. The hierarchical components are treated and the results of the measurement model regarding the validity and reliability shows Cronbach's alpha and composite reliability greater than 0.7 and AVE, greater than 0.5. The external loads of convergent validity are greater than 0.7.

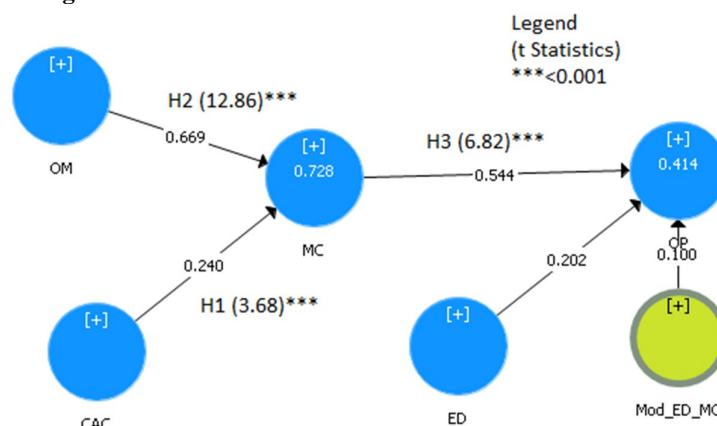
Still on the measurement model was analyzed discriminant validity the Fornell-Larcker criterion, according to which the square root of the AVE must be greater than the loads of the other constructs. The cross-loading test showed no problem.

Again, according to Hair et al. (2017), the first step of the structural model is to evaluate collinearity using the VIF indicator, using as a parameter less than 5, with the highest result being 3,337. On the second step, coefficients are evaluated using the Bootstrapping procedure with 5000 subsamples with the option "no sigh changes", all coefficients are significant (p-value < 0.05).

The third step is to evaluate the determination coefficient that measures the model predictive accuracy; the result was 0.726 for Marketing Capabilities and 0.414 for Organizational Performance, with adjusted values 0.723 and 0.404 respectively, which is considered near to substantial and moderate respectively by Hair, Ringle, and Sarstedt (2011). In step four, it seeks to measure the size of the effect  $f^2$  that evaluates if any omitted constructs generate substantive impact on the endogenous constructs, the result of CAC and OM in MC is great, 0.933, and MC in OP is medium 0.317.

In the fifth step, the predictive relevance is evaluated using the Blindfolding algorithm with default configuration, omission distance equal to seven, resulting in a  $Q^2$  that represents medium to great relevance, greater than 0.15 (OP) and 0.35 (MC) respectively, parameters of Hair et al. (2011).

Figure 2: SmartPLS Moderator test and PROCESS SPSS test

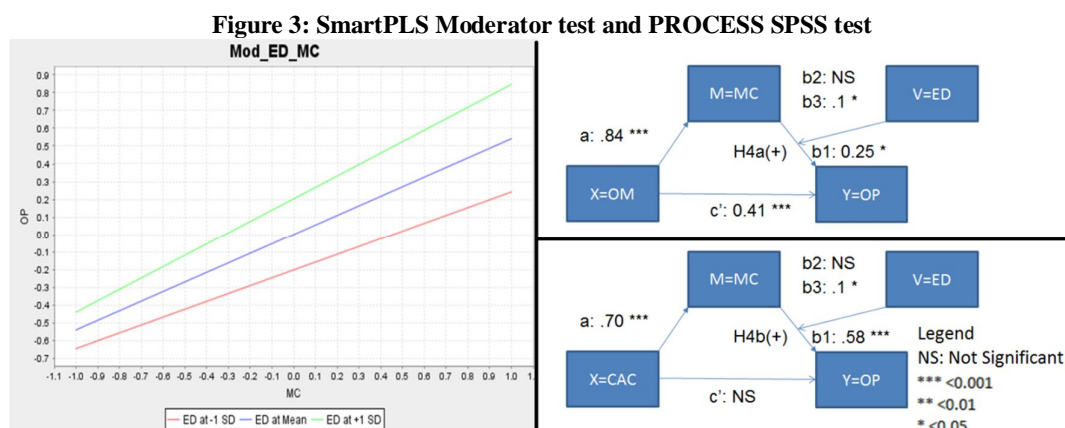


Source: Prepared by the authors (2017)

The three first hypothesis was confirmed and gave responses to extant literature.

Another test was to analyze the graphs of the Environmental Dynamism construct as a moderating effect on the relationships between Marketing Capabilities and Organizational Performance (Figure 3 – left site). There is apparent moderating effect observed in the left side of Figure 3, after the Bootstrapping execution with the endogenous construct Organizational Performance (OP), the result was significant 0.042, close to the limit of 0.05. In summary, the analysis of SEM carried out in smartPLS resulted in the confirmation of the four hypothesis.

This figure shows too both moderated mediation test results in PROCESS for OM(H4a) and CAC (H4b) (Figure 3 – right site). To improve the PLS analysis was tested the moderated mediation for H4a and H4b based on PROCESS Model 14 according to procedures of Hayes (2013), it showed for H4a that OM>MC>OP was partially mediated and moderated by ED. The effects test was performed with 10000 samples bootstrap. In the case of H4b, the direct relationship between CAC and OP was not significant, the other relationships are significant, which demonstrates a total MC mediation and moderation by ED.



Source: Prepared by the authors (2017)

The tests of H4a showed the improvement in effect from 0.12 (-1SD not significant), 0.21 (mean) to 0.29 (+1SD). By it turn, the tests of H4b showed the improvement from 0.34 (-1SD), 0.41 (mean) to 0.48 (+1SD) all significant. The result of H4a is different from H4b, but both are considered confirmed hypothesis because there is no theoretical hypothesis for direct effect.

## CONCLUSIONS

The hypothesis H1 and H4b test showed that CAC is dependent of Marketing Capabilities, as predicted by Barrales-Molina, Martínez-López, and Gázquez-Abad (2014) when they talk about technology as enabler when inserted in DCs framework, CAC uphold the market's knowledge absorption and this is the most important found in the present work. The moderated mediation of MC for CAC expands knowledge for managers and academics, in particular for managers taking for granted the boom of analytics, data science, in the market.

Concerning the second hypothesis H2, it showed a strong relationship between MO and MCs confirming the empirical work of Morgan, Vorhies, and Mason (2009). But H4a showed that the moderated mediation is partial because MO can influence OP directly. By it turn, hypothesis H3 also confirms the literature (Morgan, 2012; Kozlenkova, Samaha, & Palmatier, 2014). Both H2 and H3 are important for top management worried about customer commitment, satisfaction, and value creation.



The main test is the moderated mediation of CAC and OM to boost performance and Environmental Dynamism took an important role maximizing the mediation, maybe this is explained by the higher need of customer information because of fast customer needs moves and technological change. The adaptive capabilities like CAC could help to minimize the marketing capabilities gaps.

Regarding the H4a and H4b Hypothesis, a more careful analysis is needed despite the fact that they are confirmed. The present work has a limitation about existence of different inflection point by industry from different environmental dynamism (ED), the inflection point is the value of ED that improves the mediation.

As an academic contribution, the idea of researching the market orientation is not entirely new. But the results on marketing capabilities seem to expand the field in national context not just replicating international studies. For management, these results suggest precaution for headhunter because not all kind of industry or environmental dynamism requires Customer Analytics professionals.

The results yet contribute to the scarce empirical literature on the adaptive capabilities, especially building a new construct, CAC, with three first-order constructs in a hierarchical component model. Already from the point of view of academy, this approach provides a significant indication of the need for greater understanding new emerging technologies.

Regarding the importance of Environmental dynamism, future studies could improve present work with different countries and establishing new visions about this construct including a classification for diverse industries and/or organization size and/or technology dependence.

The focus of the work on organizational performance using only two subjective indicators represents another limitation of the present study, it is understood that several other indicators could be measured, such as objective and others related to customer relationship performance. Future research could include these variables comparing Environmental Dynamism variability in others countries. Despite these limitations, this study represents an enhancement in emergent technologies studies in marketing.

## REFERENCES

- Barrales-Molina, V., Martínez-López, F. J., & Gázquez-Abad, J. C. (2014). Dynamic marketing capabilities: Toward an integrative framework. *International Journal of Management Reviews*, 16(4), 397–416. <https://doi.org/10.1111/ijmr.12026>
- Bello, D. C., Radulovich, L. P., Javalgi, R. (Raj) G., Scherer, R. F., & Taylor, J. (2015). Performance of professional service firms from emerging markets: Role of innovative services and firm capabilities. *Journal of World Business*, 51(3), 413–424.
- Boulding, W., Staelin, R., Ehret, M., & Johnston, W. J. (2005). A Customer Relationship Management Roadmap: What Is Known, Potential Pitfalls, and Where to Go. *Journal of Marketing*, 69(4), 155–166. <https://doi.org/10.1509/jmkg.2005.69.4.155>
- Braganza, A., Brooks, L., Nepelski, D., Ali, M., & Moro, R. (2017). Resource management in big data initiatives: Processes and dynamic capabilities. *Journal of Business Research*, 70, 328–337. <https://doi.org/10.1016/j.jbusres.2016.08.006>
- Chang, W., Park, J. E., & Cha, S. (2010). How does CRM technology transform into organizational performance? A mediating role of marketing capability. *Journal of Business Research*, 63(8), 849–855. <https://doi.org/10.1016/j.jbusres.2009.07.003>
- Chuang, S.-H., & Lin, H.-N. (2013). The roles of infrastructure capability and customer orientation in enhancing customer-information quality in CRM systems: Empirical evidence from Taiwan. *International Journal of Information Management*, 33(2), 271–281. <https://doi.org/10.1016/j.ijinfomgt.2012.12.003>

- Chuang, S. H., & Lin, H. N. (2017). Performance implications of information-value offering in e-service systems: Examining the resource-based perspective and innovation strategy. *Journal of Strategic Information Systems*, 26(1), 22–38.
- Conti, C. R., Parente, R., & de Vasconcelos, F. C. (2015). When distance does not matter: Implications for Latin American multinationals. *Journal of Business Research*, 69(6), 1980–1992. <https://doi.org/10.1016/j.jbusres.2015.10.144>
- Cooke, A. D. J., & Zubcsek, P. P. (2017). The Connected Consumer: Connected Devices and the Evolution of Customer Intelligence. *Journal of the Association for Consumer Research*, 2(2).
- Davenport, T. H. (2006). Competing on analytics. *Harvard Business Review*, 84(1), 98–107, 134. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/20929194>
- Day, G. S. (2011). Closing the Marketing Capabilities Gap. *Journal of Marketing*, 75(4), 183–195. <https://doi.org/10.1509/jmkg.75.4.183>
- Faul, F.; Erdfelder, E.; Lang, A. G.; Buchner, A. (2007). G\* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191. <https://doi.org/10.3758/BF03193146>
- Germann, F., Lilien, G. L., Fiedler, L., & Kraus, M. (2014). Do Retailers Benefit from Deploying Customer Analytics ? *Journal of Retailing*, 90(4), 587–593.
- Gorla, N., Somers, T. M., & Wong, B. (2010). Organizational impact of system quality, information quality, and service quality. *Journal of Strategic Information Systems*, 19(3), 207–228. <https://doi.org/10.1016/j.jsis.2010.05.001>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks: Sage.
- Hair, Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152.
- Hayes, A. (2013). *Introduction to mediation, moderation, and conditional process analysis*. New York, NY: The Guilford Press. <https://doi.org/978-1-60918-230-4>
- Holsapple, C., Lee-Post, A., & Pakath, R. (2014). A unified foundation for business analytics. *Decision Support Systems*, 64, 130–141. <https://doi.org/10.1016/j.dss.2014.05.013>
- Jayachandran, S., Sharma, S., Kaufman, P., & Raman, P. (2005). The Role of Relational Information Processes and Technology Use in Customer Relationship Management. *Journal of Marketing*, 69(4), 177–192. <https://doi.org/10.1509/jmkg.2005.69.4.177>
- Kim, G., Shin, B., & Kwon, O. (2012). Investigating the Value of Sociomaterialism in Conceptualizing IT Capability of a Firm. *Journal of Management Information Systems*, 29(3), 327–362. <https://doi.org/10.2753/MIS0742-1222290310>
- Kohli, A. K., & Jaworski, B. J. (1990). Market Orientation: The Construct, Research Propositions, and Managerial Implications. *Journal of Marketing*, 54(April), 1–18.
- Kozlenkova, I. V., Samaha, S. A., & Palmatier, R. W. (2014). Resource-based theory in marketing. *Journal of the Academy of Marketing Science*, 42(1), 1–21.
- Kumar, P., Dass, M., & Kumar, S. (2015). From competitive advantage to nodal advantage: Ecosystem structure and the new five forces that affect prosperity. *Business Horizons*. <https://doi.org/10.1016/j.bushor.2015.04.001>
- Lee, I., & Lee, K. (2015). The Internet of Things ( IoT ): Applications , investments , and challenges for enterprises. *Business Horizons*.
- Matitz, Q. R. S., & Bulgacov, S. (2011). O conceito desempenho em estudos organizacionais e estratégia: um modelo de análise multidimensional. *Revista de Administração Contemporânea*, 15(4), 580–607. <https://doi.org/10.1590/S1415-65552011000400003>
- Morgan, N. A. (2012). Marketing and business performance. *Journal of the Academy of*

- Marketing Science*, 40(1), 102–119. <https://doi.org/10.1007/s11747-011-0279-9>
- Morgan, N. A., Vorhies, D. W., & Mason, C. H. (2009). Market orientation, Marketing capabilities, and firm performance. *Strategic Management Journal*, 30(8), 909–920. <https://doi.org/10.1002/smj.764>
- Narver, J. C., & Slater, S. F. (1990). The Effect of a Market Orientation on Business Profitability. *Journal of Marketing*. <https://doi.org/10.2307/1251757>
- Pavlou, P. A., & Sawy, O. A. E. (2010). The “third hand”: IT-enabled competitive advantage in turbulence through improvisational capabilities. *Information Systems Research*, 21(3), 443–471. <https://doi.org/10.1287/isre.1100.0280>
- Pavlou, P. A., & Sawy, O. A. El. (2013). Searching for a Simple Model of Dynamic Capabilities. *SSRN Electronic Journal*. <https://doi.org/http://dx.doi.org/10.2139/ssrn.2369378>
- Persson, A., & Ryals, L. (2014). Making customer relationship decisions : Analytics v rules of thumb. *Journal of Business Research*, 67(8), 1725–1732. <https://doi.org/10.1016/j.jbusres.2014.02.019>
- Popović, A., Hackney, R., Coelho, P. S., & Jaklič, J. (2012). Towards business intelligence systems success: Effects of maturity and culture on analytical decision making. *Decision Support Systems*, 54(1), 729–739. <https://doi.org/10.1016/j.dss.2012.08.017>
- Popović, A., Hackney, R., Coelho, P. S., & Jaklič, J. (2014). How information-sharing values influence the use of information systems: An investigation in the business intelligence systems context. *The Journal of Strategic Information Systems*, 23, 270–283. <https://doi.org/10.1016/j.jsis.2014.08.003>
- Provost, F., & Fawcett, T. (2013). *Data Science for Business* (1st ed.). Sebastopol, CA: O'Reilly Media, Inc. <https://doi.org/10.1007/s13398-014-0173-7.2>
- Song, M., Di Benedetto, C. A., & Nason, R. W. (2007). Capabilities and financial performance: The moderating effect of strategic type. *Journal of the Academy of Marketing Science*, 35(1), 18–34. <https://doi.org/10.1007/s11747-006-0005-1>
- Trainor, K. J. (2012). Relating Social Media Technologies to Performance: A Capabilities-Based Perspective. *Journal of Personal Selling and Sales Management*, 32(3), 317–331. <https://doi.org/10.2753/PSS0885-3134320303>
- Trainor, K. J., Andzulis, J., Rapp, A., & Agnihotri, R. (2014). Social media technology usage and customer relationship performance: A capabilities-based examination of social CRM. *Journal of Business Research*, 67(6), 1201–1208.
- Tseng, S.-M., & Lee, P.-S. (2014). The effect of knowledge management capability and dynamic capability on organizational performance. *Journal of Enterprise Information Management*, 27(2), 158–179. <https://doi.org/10.1108/JEIM-05-2012-0025>
- Wade, M., & Hulland, J. (2004). The Resource-Based View and Information Systems Research: Review, Extension, and Suggestions for Future Research1. *MIS Quarterly*, 28(1), 107–142. <https://doi.org/10.2307/25148626>
- Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J., Dubey, R., & Childe, S. J. (2017). Big data analytics and firm performance: Effects of dynamic capabilities. *Journal of Business Research*, 70, 356–365. <https://doi.org/10.1016/j.jbusres.2016.08.009>
- Wang, Y., & Hajli, N. (2017). Exploring the path to big data analytics success in healthcare. *Journal of Business Research*, 70, 287–299.
- Wedel, M., & Kannan, P. K. (2016). Marketing Analytics for Data-Rich Environments. *Journal of Marketing*, 80(6), 97–121. <https://doi.org/10.1509/jm.15.0413>
- Xu, Z., Frankwick, G. L., & Ramirez, E. (2016). Effects of big data analytics and traditional marketing analytics on new product success: A knowledge fusion perspective. *Journal of Business Research*, 69(5), 1562–1566.