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Healthy organizations: insights from Latin American research

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Guest editorial

Healthy organizations: insights from Latin American research

Introduction

Matters involving relationships among cultural and managerial issues, healthy organizations and performance have been growing in relevance in management literature, especially when focused on Latin American reality (Gupta, 2019; Jordão *et al.*, 2014). Despite this increase in importance and its impact on academic and business communities, this subject is still to be explored in depth.

Recognizing and exploiting this research gap, the purpose of this paper was to introduce the special issue on healthy organizations using insights from Latin American research, aiming to broaden our understanding of above-mentioned relationships and providing new evidence on competitive, sustainable and healthy organizational alternatives.

How do we ontologically conceptualize healthy organizations? What are the epistemological impact dimensions of alternative, contaminated organizations? Why does the axiological value of healthy organizations differ from that of the contaminated organizations? Where can we find the formative foundations of healthy organizations? When do contaminated organizations become a normative reality, despite the presence of healthy formative cultural foundations? Who is responsible for ensuring the health of organizations – in particular, is the responsibility limited to the managerial leaders of the organizations? How appropriate is it for the value-based academic institutions that are focused on training professional managerial leaders to absolve themselves from the responsibility for not developing a sensible appropriate model of management education that is oriented toward the ground realities correlated with healthy organizations? What can we learn from the Latin American research in a comparative international context? These are the research themes that were rigorously investigated and vigorously debated in the 2017 CLADEA Conference, organized by the Jack H. Brown College of Business and Public Administration at California State University San Bernardino.

CLADEA is a premier Latin American management education conference, comprising two parallel programming – the research programming involving the academics and the practitioners, and the development programming involving the deans, the academic directors and the corporate leaders and focused on the emerging societal challenges and responsible innovative management and management education models. Professor Vipin Gupta chaired the research programming at 2017 CLADEA conference, and Dean Lawrence C. Rose chaired the development programming. Professor Ricardo Vinícius Dias Jordão, as a member of the CLADEA board, played a pivotal role in forming collaborations with locally relevant and internationally acclaimed publication outlets for the presenters at the conference.

This special issue is based on three carefully selected papers from the conference and three additional papers for a comparative context. The first two papers help identify metaphysical foundations for making sense of the insights from the Latin American research, guided by an alternative cultural coefficient. The final paper serves to situate the insights from the Latin American research in a universal cross-cultural management context.

Developing metaphysical foundations for making sense of culture-specific research

In the first paper, Jain (2019) conceives what a healthy and great place to work is like in terms of five pillars of human capital – physical coefficient, intellectual coefficient, social coefficient, emotional coefficient and spiritual coefficient. She proposes that human capital, conceived as a

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human being whose needs for well-being are satisfied is a product of these five coefficients. In other words, human coefficient = spiritual coefficient × emotional coefficient × social coefficient × intellectual coefficient × physical coefficient. This five-fold framework is based on the five dimensions of a human being identified by ancient Indian sages. We, therefore, refer this as wisdom perspective. Using an augmented Trust Index of the Great Place of Work, she proposes that physical coefficient can be measured as personified pride in self (job), workgroup (team) and organization (corporate image). The intellectual coefficient can be measured as the degree of empowerment and opportunities for growth and development. Social coefficient can be measured as equity, impartiality and justice elements of fairness. These manifest as employer branding for equity in opportunities, a vivacious work environment that is holistic and therefore impartial, and innovative HR policies and practices that are situationally relevant and therefore just. Emotional coefficient can be measured as camaraderie within the workgroup and respect for stakeholder engagement without the workgroup. Spiritual coefficient can be measured as the credibility of managerial leadership (as an organizational embodiment of corporate image). As all the dimensions of augmented Trust Index are measurable, we refer to this as a scientific perspective. Overall, a major contribution of her work is to provide a pathway for the managers to address the grand challenge of sustainable healthy organizations by deploying a professional modern scientific perspective for furthering human capital, grounded in traditional wisdom.

In the second paper, Yadav *et al.* (2019) investigate the mediating role of innovation in market orientation and performance relationship. Market orientation is about the entrepreneurial cultural capabilities for proactively knowing about emerging customer needs (customer orientation), organizational work-culture investments into consequential knowledge (inter-functional coordination) and responsive stakeholder community ecosystem network-wide trading of desirable knowledge to service the emerging market opportunities (competitor orientation). Proactive knowing about emerging customer needs serves to personify the culture of the entrepreneurial organization in terms of the aspirational value system of those customers and therefore manifests the physical coefficient. Consequential knowledge serves to empower the community ecosystem of stakeholder networks, by creating an opportunity for growth and development and therefore manifests the intellectual coefficient. Trading of desirable knowledge is conditional on the fairness of exchange in terms of equity, impartiality and justice and therefore manifests the social coefficient. We can therefore identify physical coefficient in terms of customer orientation, intellectual coefficient in terms of inter-functional coordination and social coefficient in terms of competitor orientation. An innovative work culture of servicing the emerging market opportunities serves to promote camaraderie within the workgroup and respect for stakeholder engagement without the workgroup and therefore manifests the emotional coefficient. A consciously managed emerging socially minded entrepreneurial cultural capability, organizational work-culture investments and an ecosystem of networking stakeholder community trading serves to further the credibility of managerial leadership and therefore manifests the spiritual coefficient. In such sense, we can identify the purpose of the investigation conducted by the authors as evaluating the mediating role of innovation-oriented work culture (the emotional coefficient) in the relationship between market orientation (conceived in terms of the alignment of the physical, intellectual and social coefficients) and performance (the spiritual coefficient). Using structural equations modeling, the authors find that in an Indian sample of small and medium enterprises, only inter-functional coordination (intellectual coefficient) has a positive relationship between performance (spiritual coefficient). Consequently, innovation-oriented work culture (emotional coefficient) has no mediating effect on the relationship between market orientation and performance in this sample.

Method, hypothesis and findings

Taken together, the first two papers help us develop metaphysical foundations for making sense of culture-specific research. Traditionally, the emotional coefficient is measured as an intellectual coefficient for knowing the social coefficient, i.e. emotional coefficient = intellectual coefficient × social coefficient. Proactive knowing is a subjective behavior that modern science shows is subject to entity bias. In other words, the physical coefficient is contaminated and has three impacts. First, ontological impact: physical coefficient contaminates and descends the value of the emotional coefficient as part of constructing the system value of market orientation. Second, epistemological impact: When emotional coefficient mediates the physically contaminated system value of market orientation, there is an ascending need to polarize managerial leadership as a spiritual coefficient for differentiating the true entity value of primeval market orientation from the contaminated system value of the constructed market orientation. Third, axiological impact: Stronger the mediating powers of a pure emotional coefficient, the greater the organizational performing value (polarized value of managerial leadership as an embodiment of corporate image). Fourth, metaphysical impact. There is a positive mediating effect of innovation-oriented work culture on the relationship between the contaminated primeval system construct of market orientation and the consequential entity construct of performance. Consequently, findings of zero mediating effect in the second paper are significant because they imply one of the following three conditions:

(1) Value of the metaphysical wisdom culture coefficient = 0.

(2) Value of the metaphysical wisdom culture coefficient = 1.

- The small and medium enterprises have an at-par knowing linkages with their customers (such as due to the norms of uncertainty avoidance), without the contamination-effect of the physical coefficient.
- The cultural context of the study manifests at-par value of trading knowledge among stakeholders (such as due to the norms of in-group collectivism), without the polarization-effect of the social coefficient.
- As both physical and social coefficients = 1, only intellectual coefficient within market orientation has a positive effect on performance.
- As social coefficient = 1 and emotional coefficient = intellectual coefficient, innovation orientation work culture has a mediating effect of 1 (i.e. empirical findings of no significant mediating effect).

(3) Value of the metaphysical wisdom culture coefficient = ∞:

- There is an additional invisible moderating ecological coefficient whose value = 0.

We refer the first as the "dynamic condition," as the entire value is dynamic and there is zero prior formative capability effect of metaphysical wisdom. We refer the second as the "technological condition," as the entire knowing value is immanent as a constant system factor within each citizenship entity. We refer the third as the "technological exchange condition," as the performing of each citizenship entity is not oriented toward the constant local ecological (system) factor but instead is guided by an alternative exchange using a variable entity factor – i.e. intellectual coefficient. The three Latin American papers (third, fourth and fifth papers in the issue) highlight each of these three alternative conditions.

Dynamic condition – value of the metaphysical wisdom culture coefficient = 0

In the third paper, Ortegon-Cortazar (2019) evaluates the competing attraction power of the alternative pure natural ecological coefficient versus that of a predominating contaminated

physical coefficient in Latin American shopping centers, using a visit experience survey study of 470 customers across 29 shopping centers in the city of Bogota, Colombia. Predominating physical coefficients (measured as the profile and the agglomeration of the customers) in Latin American shopping centers comprise the variety of offer (manifesting high intellectual coefficients), accessibility (manifesting high social coefficients), innovative space design (manifesting high emotional coefficients) and entertainment (manifesting high contaminated spiritual coefficients) as a path to polarize differentiated ecological coefficient, given the presence of 1,800 shopping competing centers in the region. This differentiated ecological coefficient services a virtual fake imaginary atmospheric reality of status and power by creating a culture of exclusion focused on the international luxury brands. The alternative pure natural ecological model, based on the primeval authentic grounded native Latin American culture, relies on vegetation and natural green elements as a path to service not only health of the following customer seeking to trade the spiritually uplifting value but also the health of the servicing managerial leader who has been enlightened about the value of the local cultural coefficient as a self-luminous differentiator. Because of the competitive race syndrome, the polarized contaminated differentiated ecological coefficient has a cost-escalating proliferating effect. On the other hand, the pure natural alternative ecological coefficient creates a cost-effective refreshing breathable and healthy attraction power within each shopping center; a center that is inviting and conducive to the homegrown brands and social entrepreneurs. Using an exploratory factor analysis of the survey responses, the author identifies seven measurable factors – customer profile (physical coefficient), offer variety (intellectual coefficient), accessibility (social coefficient), innovative space design (emotional coefficient), entertainment (spiritual coefficient), luxury (ecological coefficient) and eco-natural environment (primeval cultural coefficient). This measurement model is confirmed by the findings of the confirmatory factor analysis as well, which shows how many shopping centers have integrated eco-natural environment as an essential metaphysical factor within their contaminated space design as a path to multiply their competing attraction power.

The third paper thus highlights how predominating effects of the contaminated ecological coefficient make it difficult for the organizations to understand the value of the pure primeval cultural coefficient. Consequently, organizations become a mediating factor in ascending social polarization, descending human health, negating the value of natural ecological endowments, escalating economic costs, isolating the nation and perpetuating a follower psychology among the entire citizen group. In such conditions, the value of metaphysical wisdom is zero.

Technological condition – value of the metaphysical wisdom culture coefficient = 1

In the fourth paper, Chong *et al.* (2019) investigate the last mile logistic profile within the congested commercial district of Lince in the megacity of Lima, Peru. The physical center of the last mile retail distribution in the district of Lince comprises private taxis specializing in the delivery of supplies to the wholesalers and supermarkets throughout the megacity. It is characterized by a strong intellectual work culture characterized by innovative methods for self-organizing a congested space, with lack of any space for parking or even loading or unloading. Active social profile characterized by frequent stops by private taxis, seeking to develop consolidated supplies from diverse stores, and by pedestrians, seeking to discover diverse stores (in a context of 97 per cent streets designed as two-lane one way, 83 per cent streets with zero signs and few traffic regulation signals), is the deciding factor in the emotionally intense frequent small vehicle collisions and disruptions in the flow of traffic. All these diverse energies are responsibly managed by small and medium enterprises that comprise 90 per cent of the entities within the commercial district and make up its spiritual

core. Given these conditions, there is little polarization of the social coefficient – only 14 per cent of the deliveries are made using vehicles that carry the logo of a company. Small and medium enterprise traders are not limited by the physical dominance of private taxis and effectively use a range of additional options, such as cargo trucks, private cars and public transportation, as a way to know their customers and to create long-term in-group relationships. Innovative work culture linkages are the key to their performance and endurance as the spiritual core of the district and indeed the megacity as a whole (through their vital role in the entire forward diverging supply chain), as well as the entire nation (through their vital role in the entire backward converging supply chain). Under such conditions, the value of metaphysical wisdom is 1.

Technological exchange condition – value of the metaphysical wisdom culture coefficient = ∞

In the fifth paper, Castro-Ríos *et al.* (2019) take the perspective of Colombian doctoral students to investigate the effectiveness of doctoral management education programs in training "social scientists capable of taking on the challenge of explaining and generating new paradigms in accordance with the organizational reality." Research methods in management as a social science are developed as a way to take on the complex challenges of the emerging context by generating new knowable paradigms for understanding the value of the local physical center. An important human well-being objective is to help the emerging market citizens transcend the psychology of devoted followership of the professional leadership of large industrial organizations (the physical reality of a global world), to not diffuse the entire performing value of the strong intellectual center to the latter. Doctoral programs oriented toward the local ground reality for creating knowable paradigms that are relevant to the socially minded citizens of an emerging market nation. Prior scholars have asserted that the doctoral programs in Colombia have a predominating emotional focus on the issues deriving from the national challenges of social health and economic development. The authors seek to validate this assertion using a scientific approach. To help understand the context, they note the presence of 11 government-approved management doctoral degrees granting degree-granting institutions in Colombia, of which two-thirds are private and the rest are public. In total, 45 per cent are situated in the capital city, Bogota. Authors use a survey of 39 doctoral students to report a predominance of presentations at the international conferences rather than national conferences. Most students rely on the funding from the university or are self-funded using private and non-government sources. About three-fourths of the universities have international agreements allowing the doctoral candidates to do a research internship at an overseas partner university. Consequently, international social networks are the dominating factor in the research interests of the doctoral students, with few identifying nationally relevant issues, such as marketing, innovation, leadership and social responsibility, as their study fields. International internships and social networks appear to be disempowering, as they have a negative effect on the publication productivity of the doctoral students (average publications before joining the program versus after joining the program), although this negative effect is justified in terms of superior publication quality. However, in reality, doctoral students are not engaged in discovering solutions to the emerging socially minded entrepreneurial challenges for technological growth and workforce productivity within Colombia. They are instead charged with the responsibilities for developing theoretical contributions that have few linkages with the technological and productive foundations of the nation. Such a spiritual coefficient of the doctoral programs in Colombia is correlated with limited local opportunities for the development of healthy organizations and workforce.

The fifth paper thus highlights the pathway for ascending the contaminating effect of the physical coefficient (the theory effect of large industrial organizations) as a consequence of the socially minded non-citizens servicing their own contaminated social coefficient (the polarizing ideal effect of international networks whose context is dominated by the large industrial organizations). Therefore, the mediating innovation effect of the emerging investigating scholars also becomes contaminated, engendering a false self-serving emotional belief that the contaminated theorizing is meaningful for understanding, mitigating and solving the national challenges of social health and economic development. Eventually, a contaminated spiritual effect is created that serves to strengthen the followership mind-set and limits the development of empowering, contamination-free, healthy organization and workforce in the nation. By consciously targeting an alternative ecological coefficient (the grounded experience perspective of the local subjects), a responsible investigating scholar can transcend the limitations of the apparent reality and help enlighten the entire citizenship universe. We can, therefore, conclude that the value of the alternative ecological coefficient = 0 and infer the value of metaphysical cultural coefficient as infinity.

Discussion – accountability for the varying values of metaphysical wisdom culture coefficient

In the sixth and final paper, Gupta and Zhang (2019) investigate the causative accountability factors in the formative capability of the firms to seek adaptation using equilibrium-seeking strategies versus normative natural green programming of creating a dynamic disequilibrium by consciously selecting sensible local contexts. Their study is based on a survey of small and medium enterprises in China. The survey findings confirm that a management model focused on systematic adaptation to the predominating competitive industrial ecology puts escalating pressures for polarizing energy into the contaminated path because of the forced "strategic fit" trade-offs between the competitive performance (inorganic, creating a sequence of chemical reaction effects) and the green natural performance (organic, without any negative effect). On the other hand, a management model focused on conscious selection of the environmentally conscious community ecosystem of stakeholder networks as the dominating spiritual center furthers the ecological cost-effectiveness of the entire organization, without the supernatural exchange of primeval uniquely differentiated, inclusive, diverse, engaging and responsible local immanent culture with the polarized, contaminated and commoditized leader oriented global work culture. The authors concluded that a management model guided by a sustainable cultural coefficient (the healthy workforce system) helps firms transcend the high-frequency short waves correlated with the predominating competitive industrial ecology (the organizational exchange system) and the low-frequency long waves correlated with the dominating spiritual center (the stakeholder networking system).

Overall, these findings substantiate the value of Gupta's (1998) equations as part of the dynamic model for measuring a unit of technological growth. Using ten of Vipin Gupta's equations, we summarize the major insights from the evidence presented in the six papers.

First, ontologically, a healthy organization is one that knows how to service the formative infinite value of the metaphysical cultural coefficient. Such knowable organizations do not need to norm alternative ecological coefficients by forming a followership of the polarized experiences of alternative entities. The transformative spiritual coefficient (bipolar desire for universal leadership) is sustained at a zero level. The metaphysical emotional coefficient (multipolar entrepreneurial energy cost for correlating ascending followership value and descending leadership value and discovering an alternative) can be zero as well. Therefore, the social coefficient (a proxy for the invisible mental coefficient, manifesting mental pressure for the responsible management of social networks) does not need to proliferate. The intellectual

coefficient (pressure for self-organizing mental stimuli) need not be activated, as metaphysical cultural coefficient services the differentiation factor naturally and cost-effectively. Consequently, the physical coefficient (i.e. the self-managing power) sustains the infinite health factor of the organization, with zero contaminating human-effect. In other words, the technological cost for compensating the contaminating human-effect is directly proportionate to the alternative culture coefficient. Greater the alternative ecological coefficient, greater is the alternative spiritual coefficient, the alternative emotional coefficient, the alternative social coefficient, the alternative intellectual coefficient and consequently the contaminated physical coefficient.

Technological cost – a cultural effect. Second, epistemologically, an alternative, contaminated organization experiences a constant pressure for social survival, as a direct function of the value of contamination, within its own ecological context. It, therefore, experiences a desire for polarizing its unique leadership, seeking to master plan its ecological context and program followership linkages using the power of the emotional coefficient (such as emotional intelligence for binding entrepreneurial citizens into agency covenants). Descending entrepreneurial freewill escalates the costs for responsible management of social coefficient, needing the organization to self-organize alternative paths by developing its intellectual coefficient for motivating a sense of universal responsibility among the entities oriented toward their own well-being. Consequently, the contaminating cost-effect of alternative ecological coefficient escalates further. In other words, pressures for managing social coefficient within the local system (local-effect) escalate the cost of contaminated corporate-effect.

Technological cost – a corporate-effect × local effect. Third, axiologically, the value of a healthy organization differs from that of a contaminated organization because of descending priority on human effects (which are guided by primeval, metaphysical cultural coefficients) within the corporate organization and ascending priority on trading effects (which are guided by strong, alternative ecological work culture coefficients) for managing the local social networks. Descending human effects ascend the contaminating polarized corporate effects, and ascending trading effects descend the value of the local ecological effect.

Corporate-effect – a 1/human effect

Local-effect – a 1/trading effect. Fourth, metaphysically, formative foundations of healthy organizations are situated within the national system. Lower the spiritual coefficient within the national system, higher the desire for trading alternative emotional coefficients without the national system, with the escalating cost of servicing the social coefficient.

Technological cost – a 1/national effect. Fifth, contaminated organizations become a normative reality, despite the presence of healthy formative cultural foundations, when the citizens lack holistic experiential awareness of the social costs (i.e. cost of social coefficient) of the alternative international ecological coefficient and make their decisions guided by the perceived partial knowledge about the value of attracting the alternative international physical coefficient. Therefore, they diffuse the value of their metaphysical culture coefficient and seek technological trading as a path for creating an alternative culture coefficient to exchange their strong work culture linkages and weak international linkages.

Technological trading – a work-culture-effect

Technological trading – a 1/international-effect. Sixth, the responsibility for ensuring the health of organizations is not limited to the non-citizen managerial leaders of the organizations. It is eventually the responsibility of the academic institutions to develop a sensible appropriate model of management education that is oriented toward the cultural ground realities. In the race for educating modern professional leaders, academic institutions must not let themselves be a medium of diffusing a system of contaminated knowledge based on alternative cultural coefficients among their citizens. It is important for the

academic leaders to take time for creating a sensible doctoral education program (that accrues proficient exchange value) based on the metaphysical ground realities of their own cultural coefficients (that accrue proficient workforce value) and its dynamic correlation with the universal, international cultural coefficients (that accrue proficient networking value):

$$\text{Exchange proficiency} = \text{Workforce proficiency} \times \text{Networking proficiency}$$

Seventh, the deciding learning from the Latin American research presented at CLADEA 2017, in a comparative international context, is as follows: growing consciousness about the value of healthy organizations is linked to descending workforce proficiency and ascending networking proficiency. Subconscious ecologically motivated networking generates escalating cost of social and intellectual coefficients, thereby limiting the value of feasible international linkages, as well as normative profiting value of otherwise healthy organizations. By educating their citizens on how to consciously determine the value of their international linkages, academic institutions can help promote an alternative proficient model of a networking system that enhances the normative profiting value:

$$\text{Networking proficiency} = \text{Organizational profiting} \times \text{International} - \text{effect}$$

Eighth, to build on the rich academic as well as administrative insights from CLADEA 2017 assembly, there is an additional need for the scholars to investigate how all entities may trade the value of international linkages to catalyze the normative performing value of their organizations and polarize a healthy proficient workforce system without escalating cultural, ecological, spiritual, emotional, mental, intellectual and physical costs:

$$\text{Workforce proficiency} = \text{Organizational performing} \times \text{International} - \text{effect}$$

Concluding remarks

In conclusion, there is an opportunity for a metaphysical perspective grounded in the integration of the Eastern wisdom and the Western scientific perspectives. Specifically, as the work of Gupta (2019) demonstrates and the insights here substantiate,

human coefficient = cultural coefficient × ecological coefficient × spiritual coefficient × emotional coefficient × mental coefficient × intellectual coefficient × physical coefficient;

healthy human organization coefficient = f (primeval cultural coefficient) as evidenced by the sustainability of normative human behaviors over successive millennia; and

contaminated human organization coefficient = (dynamic ecological coefficient, metaphysical spiritual coefficient, axiological emotional coefficient, epistemological mental coefficient, ontological intellectual coefficient and scientific physical coefficient).

All in all, the dynamic ecological coefficients may necessitate a transformation in primeval cultural coefficients, thereby descending the health factor. The metaphysical spiritual coefficient may destroy the primeval cultural coefficient entirely (such as by isolating traditional cultural norms as paganism). The axiological emotional coefficient may polarize an alternative cultural coefficient guided by leader beliefs under pressure conditions seeking survival of the follower group. The epistemological mental coefficient may differentiate this alternative cultural coefficient guided by varying

interactions with the subtly predominant primeval cultural coefficient. The ontological intellectual coefficient may proliferate infinite alternatives to the universe of an alternative cultural coefficient, seeking a sustainable strategic management path. Scientific physical coefficients may contaminate each of these infinite alternatives by challenging their zero consequential health value and instead exchanging own subjective human effect that is contaminated with the subtle wish to substantiate the value of the alternative cultural coefficient as a path to ascend the entire follower group into an omnipotent power in correlation with the infinity of non-follower groups.

Although traditionally Latin America was characterized by highest levels of cultural power distance in the world, increasingly the entire world is experiencing rapid growth in the social, human, ecological, economic, national and psychological power distance. Insights from Latin American research, in the cross-cultural comparative context, can help enlighten our leaders about the root cause of the grand societal challenges facing our organizations today and help construct appropriate models for self-managing these challenges using a sensible proportion of cultural knowing and scientific knowledge.

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Making of a healthy and great place to work by using people power

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Criação de um local saudável e ótimo para se trabalhar usando o poder das pessoas

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Abstract

Purpose – This paper aims to understand what it takes for an organization to transform itself into a great and healthy place to work. A comprehensive fivefold framework has been used to assess employees' practices in the organization under study. This framework focuses on five aspects of a human being where he/she may like to satisfy his needs, i.e. physical, intellectual, social, emotional and spiritual. Organizations need to design various programs to address employees' needs at these five dimensions to get their best and for making an organization a healthy and desired place to work at.

Design/methodology/approach – For collecting data for this study, a triangular approach peculiar to a survey research was adopted, i.e. the use of questionnaires, interviews and documented evidence. SPSS was used to analyze the data. Results from survey were supplemented with gaps identified through desk study. Confirmatory factor analysis was carried out to check the validity of the instrument.

Findings – A wider role of the human resources department is being envisaged by proposing to set up a separate "people management office", which will be responsible for project people management and developing a "CONDUCIVE" culture. Further, innovative recommendations are proposed for making an organization a great place to work in.

Practical implications – This study has several important implications for the practitioners. First, this study developed a comprehensive five-fold framework, which focuses on five aspects or levels or dimensions of a human being, i.e. physical, intellectual, emotional, social and spiritual. A person would have needs corresponding to each of these levels. This framework can be used to study employees' practices in the organizations on these five crucial dimensions. Organizations can design various programs to address employee needs around these five dimensions to get their best and for making an organization a healthy and desired place to work. Second, the "CONDUCIVE" model proposed in this study for developing conducive culture adds a novel insight to the growing body of literature in this area. This model can be used by human

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resources managers to have better employee engagement, which in turn will make their organization a healthy workplace.

Originality/value – This paper makes use of a comprehensive five-fold framework developed by the author to study employees' practices in the organizations on five dimensions. It is proposed to develop a "CONDUCIVE" culture, a model developed by the author with a number of activities. This model will enhance the employee engagement in an organization, which eventually will make the organization a healthy place to work in. As suggested, organizations can set up a people management office as well to harness people power.

Keywords Development, Employee, HRM, Organizations, Stakeholder analysis

Paper type Research paper

Resumen

Objetivo – El presente artículo aspira a entender como una empresa puede convertirse en un gran lugar de trabajo. Se emplea un modelo de cinco factores para valorar las prácticas de gestión de personas en la empresa estudiada. El modelo considera cinco factores que los individuos pueden considerar a la hora de satisfacer sus necesidades: físicos, intelectuales, emocionales, sociales y espirituales. Las empresas necesitan diseñar diferentes programas para evaluar las necesidades de los empleados en estas cinco dimensiones para extraer lo mejor de ellos y desarrollar una organización saludable y en la que deseen trabajar.

Metodología – Combina información de cuestionarios, entrevistas orales y evidencia documental. Los datos se analizan mediante SPSS. Los resultados del análisis de encuestas se complementaron con información proveniente del análisis de la empresa. Se utilizó el análisis factorial confirmatorio para contrastar la validez de los instrumentos.

Resultados – Se plantea un papel más amplio de los departamentos de RRHH proponiendo la creación de una oficina de gestión de personas (PMO) que sería responsable de la gestión de proyectos de personas (PPM) y de desarrollar una cultura "conducente". Además se realizan recomendaciones innovadoras para hacer de la empresa un gran lugar de trabajo.

Implicaciones prácticas – El estudio tiene importantes implicaciones prácticas. Primero, desarrolla un nuevo modelo de cinco factores que los individuos pueden considerar a la hora de satisfacer sus necesidades: físicos, intelectuales, emocionales, sociales y espirituales. Una persona puede tener necesidades en cada uno de estos niveles. Este modelo se puede emplear para estudiar las prácticas organizativas para con los empleados en estas cinco dimensiones clave. Las organizaciones pueden diseñar varios programas para analizar las necesidades en estas cinco dimensiones y generar un mejor lugar de trabajo. Segundo, el modelo "conducente" propuesto añade nuevas pistas a la creciente investigación en esta área. El modelo puede emplearse por parte de los gerentes de RRHH para conseguir un mayor compromiso por parte de los empleados y hacer de la empresa un gran lugar de trabajo.

Originalidad – El artículo presenta un modelo de cinco factores desarrollado por el autor para estudiar las prácticas de gestión de personas. Se propone desarrollar una cultura "conducente" que generaría un mayor compromiso de los empleados que a su vez haría a la empresa un mejor lugar de trabajo. Las empresas pueden crear oficinas de gestión de personas para aprovechar el poder de las personas.

Palabras clave Lugar de trabajo, Gestión de personas, Cultura organizativa

Tipo de artículo – Artículo de investigación

Resumo

Objetivo – Este artigo é um esforço para entender o que é necessário para uma empresa se transformar em um lugar saudável e ótimo para trabalhar. Um marco de referência de cinco fatores foi usado para avaliar as práticas dos funcionários na empresa estudada. Este marco de referência centra-se em cinco aspectos do ser humano, onde ele/ela pode satisfazer suas necessidades; física, intelectual, emocional, social e espiritual. As empresas precisam projetar vários programas para atender às necessidades dos funcionários nessas cinco dimensões, a fim de obter o melhor deles e tornar a empresa um local saudável e desejado para trabalhar.

Metodologia – Para a coleta de dados, se adotou uma abordagem triangular, ou seja, questionários, entrevistas e evidências documentadas. Os dados foram analisados com SPSS. Os resultados da pesquisa foram complementados com lacunas identificadas através da análise da empresa. A análise fatorial confirmatória foi utilizada para verificar a validade do instrumento.

Resultados – Um papel mais amplo do departamento de RH está sendo planejado, propondo a criação de um "Escritório de Gestão de Pessoas" (PMO) separado, que será responsável pelo Gerenciamento de Pessoas do Projeto (PPM) e pelo desenvolvimento de uma cultura "CONDUTIVA". Além disso, recomendações inovadoras são propostas para tornar a empresa um ótimo lugar para se trabalhar.

Implicações práticas – Este estudo tem várias implicações práticas importantes. Em primeiro lugar, este estudo desenvolveu um amplo marco de referência com cinco fatores que se centra em cinco aspectos ou níveis ou dimensões do ser humano, ou seja, físico, intelectual, emocional, social e espiritual. Uma pessoa teria necessidades correspondentes a cada um desses níveis. Essa estrutura pode ser usada para estudar as práticas dos funcionários nas empresas nessas cinco dimensões cruciais. As empresas podem projetar vários programas para atender às necessidades dos funcionários nessas cinco dimensões, a fim de obter o melhor desempenho e tornar a empresa um local saudável e desejado para trabalhar. Em segundo lugar, o modelo "CONDUCENTE" proposto neste estudo para o desenvolvimento da cultura condutiva, acrescenta uma visão inovadora a crescente literatura nessa área. Esse modelo pode ser usado pelos gerentes de RH para obter um melhor engajamento dos funcionários, o que, por sua vez, tornará sua empresa um local de trabalho saudável.

Originalidade – Este artigo usa de um amplo marco de referência de cinco fatores desenvolvido pelo autor para estudar as práticas dos funcionários nas empresas em cinco dimensões. Propõe-se desenvolver uma cultura "CONDUTIVA", um modelo desenvolvido pelo autor com uma série de atividades. Este modelo de desenvolvimento da cultura condutiva levará ao engajamento dos funcionários, o que tornará a empresa um ótimo lugar para se trabalhar. Como sugerido, as empresas podem configurar o Escritório de Gestão de Pessoas (PMO) para aproveitar o poder das pessoas.

Palavras-chave Local de Trabalho, Gestão de Pessoas, Cultura Organizacional

Tipo de artigo – Artigo de pesquisa

1. Introduction

> On what high-performing companies should be striving to create: A great place for great people to do great work. – *Marilyn Carlson, former CEO of Carlson Companies*

In the current competitive scenario, attracting and keeping people motivated is a big challenge for most organizations. In these dynamic and turbulent times, every organization is making an attempt to becoming better by various means. They are ready to go the extra mile to make their workplace transform from good to great as they know human capital provides competitive edge to their organization. Therefore, an increasing number of organizations have been realizing the value of creating a great workplace. According to Robert Levering, Co-Founder, Great Place to Work®, "A great place to work is one in which you trust the people you work for, have pride in what you do, and enjoy the people you work with." It is an indisputable fact today that creating a great workplace is an integral part of an organization's business strategy. However, the best workplaces have a distinctive advantage over their peers. Available research indicates that companies that are recognized as best workplaces as per the Great Place To Work® framework have the following:

- positive correlation with the stock market returns provided to shareholders;
- higher profitability;
- congenial working environment (with high degree of motivation and fun);
- higher job satisfaction;
- low employee turnover; and
- high retention rate

Organizations that aspire to be great must ensure that innovative practices at work facilitate their transformation into a great company. For the purpose of the study, a public sector unit was selected in India. This organization was studied in terms of people management practices it followed, which eventually make an organization healthy, productive and a great place to work for.

2. Framework of study

When people are financially invested, they want a return. When people are emotionally invested, they want to contribute. – *Simon Sinek*

A comprehensive five-fold framework has been used to assess employees' practices in the organization under study. This framework focuses on five aspects or levels or dimensions of a human being, i.e. physical, intellectual, social, emotional and spiritual, where he or she may have needs corresponding to that level. Organizations need to design various programs to address employee needs across these five dimensions to get their best. For making an organization a healthy and desired place to work in, focus should be on the aforementioned five aspects of an employee. These five levels of an individual are given below and have also been depicted diagrammatically as follow:

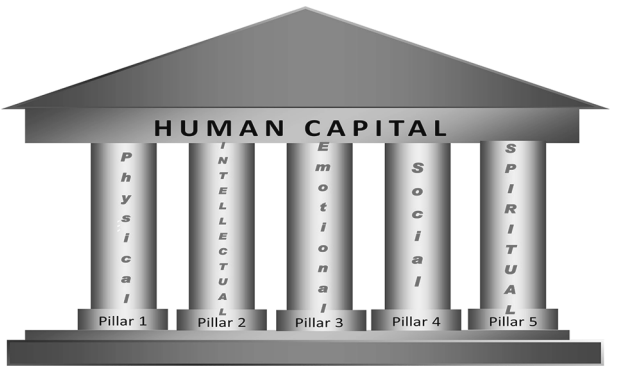
$$\text{HB (Human Being)} = \text{PQ} * \text{SoQ} * \text{EQ} * \text{IQ} * \text{SQ (source: author)}$$

where,

PQ = physical quotient
IQ = intellectual quotient
SoQ = social quotient
EQ = emotional quotient
SQ = spiritual quotient

This framework has been used to assess employees' practices in the organization under study (Figure 1). Authors suggest a comprehensive fivefold framework which focuses on five aspects or levels or dimensions of a person, i.e. physical, intellectual, social, emotional and spiritual. These five aspects indicate that a person wants to fulfill his/her needs at these five levels/dimensions.

This five-fold framework delineates five aspects or levels or dimensions of human being, where they may want to satisfy their needs at. On the contrary, the Big Five theory discusses five traits of personality. The Big Five theory characterizes personality as five clusters of habitual behaviors: conscientiousness, agreeableness, extroversion/introversion, openness to experience and emotional stability. The Big Five personality traits have emerged as an overarching empirically based framework capturing major between-person differences in personality (John and Srivastava, 1999). This five-fold framework does not



Source: Author

Figure 1.
Five-fold framework or five aspects/levels/ dimensions of a human being for satisfaction of needs

throw light on personality traits. However, it discusses the levels of a person, where his or her needs may exist.

Current practices of the organization under study, which were examined on these dimensions to have an appropriate assessment of its existing work environment, are as follows:

2.1 Physical

Budgetary support is provided for conducting the following activities at different locations, which caters to employees' physical aspect. A brief description of the activities is given below:

- conduct of sports promotion activities for children (indoor/outdoor) at least two in a year;
- conducting at least two women empowerment program/sports activities for female employees or wives of employees;
- minimum two cultural programs and events held/planned;
- indoor/outdoor games and sports: competitions are conducted annually within one public sector unit or organization (PSU) and among different PSUs as well;
- health awareness programs for female employees, such as cancer awareness, general health and gynecologist-related programs are organized regularly. After attending one such program, a female employee got the medical tests done and was diagnosed with cancer; and
- general medical camps for employees at corporate office.

2.2 Intellectual

Following are the activities or training programs that keep the employees' intellectually agile:

- writing and presenting competition held annually, which motivates employees to read a lot and contribute to organizational knowledge base;
- training is imparted to all employees after ascertaining functional and behavioral training needs to keep employees abreast of latest developments in the area;
- multi skilling training in various trades is being conducted in coordination with department of technical education and industrial training, Government of Punjab;
- exclusive development module are conducted for female employees, spouse/children of employees and for physically challenged employees or their children;
- management development programs and competency development, OD initiatives and implementation of planned interventions;
- Scheme for higher studies and Certification in Project Management (CIPM);
- induction-cum-orientation training for newly recruited executives; and
- establishment of four training institutes that are duly recognized and equipped with latest training aids and logistics.

2.3 Social

Following activities cater to employees' social needs:

- frequent cultural events parties/functions/social gatherings are organized at regular intervals at different power stations, which bring a feeling of togetherness and enjoyment among employees;

- at all the power stations, there are executive clubs that cater to their social needs;
- various clubs are created to offer recreational time for employees and workmen; and
- New Year celebration is also held with enthusiasm and offers good social gathering among officers.

2.4 Emotional

Following reward and recognition schemes motivate employees emotionally to contribute their best:

- Exemplary Commitment Award;
- Star of month (Workmen)Award;
- Best Power Station;
- Best Construction Project;
- Star Student Award;
- Scheme for Unlocking creativity and Innovation (Quiz for Excellence Competition); and
- other competitions (business simulation games, management quiz).

2.5 Spiritual

- Prayers on different occasions.
- Temples (spiritual space) constructed at different sites. There is a temple in every power house where ceremonial worship is performed on various occasions, which brings a sense of oneness among all employees as everybody participates enthusiastically in it irrespective of cast, creed or background.

3. Literature review

> The strongest is never strong enough always to be master unless he transforms strength into right and obedience into duty. – Jean Jacques Rousseau

Competitive marketplace and challenging economic conditions have given rise to dearth of talent. The amount of financial burden to the firm as a result of employees leaving an organization, the subsequent hiring or replacement of employees, can be quite significant in terms of personal, work-unit and organizational readjustments (Lee and Mitchell 1994). Investing in staff is far less expensive than replacing them, which is estimated to cost about one-and-a-half years' of a departing staffer's annual salary (Jacobs, 2007). Therefore, the importance of employee engagement in the current business scenario has attained significance. It has been labeled as one of the "hottest topics in management" in recent times (Welbourne, 2007) as engaged employees are fully "psychologically present," thus "giving it their all" (Bernthal, 2004) to their tasks. Employee engagement is a key to retention of talent (Glen 2006) and is an area in which lead has been taken by practitioners (Bennett and Bell, 2004; Baumruk *et al.*, 2006; Gallup Management Journal 2006; Parsley, 2006; Woodruffe, 2005). Moreover with an incessantly deepening "engagement gap" reported among employees (Kowalski, 2003), that is threatening to cripple organizational growth and productivity, it becomes imperative to advance research on this construct. By developing intangible capabilities of employee engagement, its antecedents and outcomes, which are path-dependent, a firm can stay ahead of its competitors (Colbert, 2004).

The Great Place to Work Institute came into existence in 1981. This institute came up with list of World's first 100 best companies to work for in 1997. It works with more than

5,500 organizations, representing over 10 million employees. Its mission is to build a better society by helping companies to transform their workplaces. It endeavors to help organizations transform their cultures. It delivers gold standard lists and rankings that identify and classify the world's best workplaces. Great workplaces are built through the day-to-day relationships that employees experiences.

The employee view:

(1) Great workplace is one where employees:

- trust the people they work for; and
- have pride in what they do.

Enjoy the people they work with

The manager view

(2) Great workplace is one where they:

- achieve organizational objectives
- with employees who give their personal best; and
- work together as a team/family in an environment of trust.

Great Place to Work® Institute's more than 20 years of research among the world's best employers has confirmed that creating a great workplace yields real business benefits. Independent studies have shown that companies who appear on the Great Place to Work lists see increase in employee commitment, which leads to higher employee productivity, receive more qualified applicants for every open job position and experience two to four times lower voluntary turnover than their industry peers. Krishnan PP, Chief Delivery Officer and HR Head at Tavant Technologies explains:

> We value good health of our employees through stress management, health camps, parenting, personal counseling, nutrition, yoga etc. Synergy is the month long sporting event which covers both various indoor games and outdoor sports.

Working individuals in Indian workplaces are concerned about the way they are treated at the workplace (Biswas and Varma, 2007).

Aviva Life Insurance has fit climber activities like marathons, cricket tournaments, adventure clubs, etc. Cognizant also offers an array of wellness programs to its employees, where they organize sessions on stress management, time management, yoga and so on to help them unlock their potential. Patni Computer has a small club called "Club Patni," which arranges a lot of activities. They arrange salsa/aerobic classes for employees post work. "Nothing like dancing relieves your stress and that's why that is loved the most by all our employees," adds Arpita Bakshi, executive, Patni Computers.

Employer branding is the process of marketing your company as an employer of choice by creating a positive image, or reputation, and showing the company as a great place to work. Companies that understand the importance of this era of digitization and transparency are also concerned with their employer brand. Branding a company as an employer of choice has important implications for attracting and retaining the best talents. Organizations that want to win the war for talent should not only aspire to become a great place to work; they should aim to be perceived as one too (www.entrepreneur.com/article/279227).

3.1 Constructs used in the study

Several agencies across globe *viz* Great Place To Work Institute, Forbes, Fortune, etc. rate the great place or best employer to work for against some standard metrics or parameters such as trust, camaraderie, etc. According to Robert Levering, Co-Founder, Great Place to Work®, "A great place to work is one in which you trust the people you work for, have pride in what you do, and enjoy the people you work with." To assess a great place to work, the Great Place to Work Institute conducts an employee survey known as TRUST INDEX© (www.greatplacetowork.in). This index or questionnaire asks about behaviors that measure the way in which *credibility, respect* and *fairness* are expressed and collects data about the levels of *pride* and *camaraderie* in the company's environment.

3.1.1 Components of trust index. From the available literature, seven constructs were identified to assess opinion of employees on whether the organization under study is a great place to work for (Table I). These constructs are given below:

- credibility;
- pride;
- camaraderie;
- fairness;
- respect;
- degree of empowerment; and
- opportunities for growth and development

The construct titled HR Policies and Practices caters to the "fairness" parameter given in the Great Place to Work Institute's parameters. For example, two questions of this construct are given below:

- performance of employees is fairly evaluated; and
- people here are treated fairly regardless of their age, caste and gender.

The construct titled Supportive Work Environment caters to the "respect" parameter given in the Great Place to Work Institute's parameters (Trust index) as respect means support, collaboration and caring.

Trust	
Credibility of management	Two-way communication
	Managers' competence
	Integrity and reliability
Respect	Professional support
	Collaboration
	Demonstrated caring
Fairness	Equity
	Impartiality
	Justice
Pride	About my job
	About my team
	Corporate image
Camaraderie	Individuality is valued
	Welcoming atmosphere
	Community

Table I.
Components of trust index

Therefore, given five constructs are taken from the trust index of Great Place to Work Institute. We have added two more constructs in the study, which are given below:

(1) degree of empowerment; and

(2) opportunities for growth and development.

Literature that states that the abovementioned two parameters contribute to making of a great place to work for is given below:

Paper titled "Best workplaces in technology: empowerment drives performance" (www.greatplacetowork.ca/en/empowerment-drives-performance) mentions that by empowering employees, organizations are redefining success and what it means to be a leader in the tech field.

Great Place to Work report shares "Three predictions for the workplaces of future". (www.greatplacetowork.com/images/reports/Fortune_100_Report_2017_FINAL.pdf):

- Prediction 1: A Fairer Workplace For All.
- Prediction 2: Increased Focus on Developing All Employees.
- Prediction 3: A Deeper Sense of Purpose for All Employees.

Prediction 2, which is the last construct in the study, states that over the past 20 years, Best companies have consistently stood apart for their efforts to help employees reach their full potential. This trend is still true today. For example, the average company on the 1998 list offered employees approximately 35 hours per year of training and development. That number has grown to more than 58 hours for hourly employees, and 65 hours for salaried – a 76-per-cent increase since the first Fortune list.

A brief description of the given seven constructs is given below (Figure 2):

3.2 Pride

This measures employees' sense of pride in their work by assessing the feelings employees have toward their jobs, team or work group and the company. Major indicative practices are as follows:

Figure 2.
Dimensions of Great Place to Work

- Employees take pride in telling others that they are part of this company. It gives sense of belongingness and enhances branding of the company.
- Employees are excited to be at workplace every day. They feel emotionally attached to work and company. It helps spreading positive energy and enhancing productivity.
- Sense of accomplishment from the assigned job comes when employee attaches special meaning to his work and feels their work has a great impact.

3.3 Camaraderie

This measures employees' sense of camaraderie in the workplace by assessing the quality of the friendliness and community-based feeling within the workplace. It helps in building team spirit and friendly environment in following ways:

- employees identify their environment as friendly, a fun place to work and in which they are made to feel right at home;
- employees can count on people to cooperate. People care about each other and provide support when needed;
- there is sense of community where employees identify a "family" or "team" feeling here and people celebrate special events around here; and
- adequate support is extended whenever needed in difficult jobs from colleagues.

3.4 HR policies and practices

This measures the extent to which employees feel that management practices are fair by assessing the equity, impartiality and justice employees perceive in the workplace:

- Equity is conveyed through balanced treatment for all people in terms of rewards (pay, benefits and recognition) regardless of their age, caste and creed. There is fairness in practices of rewards and recognition. Employees perceive that companies' HR policies are employee-friendly.
- Impartiality is displayed through absence of favoritism in hiring and promotions. Implementation of policies and processes occurs in an objective and consistent manner. Promotions go to those who best deserve them.
- Justice is seen as lack of discrimination on basis of race, sex, gender, etc. and a fair appeal process. There is thrust on following ethical and fair practices. Employee grievances are settled in a time-bound and enabling manner.

3.5 Opportunities for growth and development

It supports professional development and showing appreciation, and helps in attaining aspiration needs and competency building of employees. Various interventions addressing this aspect are as follows:

- training and development leading to professional development and adequate opportunities for fostering learning and development;
- job rotation across departments for multi-skilling; and
- the opportunity to do challenging work and opportunities for career growth.

3.6 Degree of empowerment

A primary goal of employee empowerment is to give employees a greater voice in decisions about work-related matters. Their decision-making can range from offering suggestions to exercising influencing management decisions. Major indicatives are given below:

- adequate freedom to take decisions necessary to complete the assigned work;
- availability of resources and equipment to do the required job;
- involvement in the decision making process for areas that impact my work assignments;
- encouragement to give suggestions and use creativity in my day to day work; and
- employees' opinions are heard and given due considerations.

3.7 Supportive work environment

As a working definition, supportive workplace can be described as an environment that attracts individuals to remain integrated professionally and perform effectively. Furthermore, the work environment can influence the work life balance. Its characteristics affect organizational functionality, individual satisfaction, the balance between work and family life, continuous development and the organizational culture. In this respect, indicatives are as follows:

- due care in assignment of work that matches ones competence/expertise;
- inspiration from manager to put in best every day;
- adequate support of seniors and resources to ensure best performance;
- timely feedback by manager and suggestions which helps in improving performance;
- adequate measures for balancing work and personal priorities; and
- adequate enjoyment in working environment at work place.

It allows employees to strike work life balance and perform effectively. Supportive system facilitates the employees to think that they are cared for.

3.8 Credibility

This measures the extent to which employees see management as credible (believable and trustworthy) by assessing employees' perceptions of management's communication practices, competence and integrity. The practices reflective of credibility are as follows:

- communication is about keeping the employees informed about important issues, giving clear directions and being accessible and approachable all the time;
- employees are kept informed on all matters and decisions which affect the organization. The degree of openness in Communication Company facilitates positive working relationship within the company. Relevant information is shared with employees in a timely manner. There is a timely, regular and clear communication from management; and
- co-ordination of resources, human and material and ability to get job done.

4. Research methodology

4.1 Research objectives

- To examine current practices of the organization under study as a great place to work for on five-fold framework;
- To assess the opinion of employees about this organization as a great place to work; and
- To propose interventions to bridge the gap, if any to achieve the desired result.

4.2 Hypothesis

H1. This organization is a great place to work for with positive scores (value of more than 3) across all seven parameters.

4.3 Source of data and research instrument

Both quantitative and qualitative data has been collected. The data was collected using a triangular approach, i.e. use of the questionnaires, interviews and documented evidences. A research instrument based on adapted version of GPTW survey of Great Place to Work Institute was prepared (refer Appendix). The instrument has 50 items that cut across all the 7 identified parameters and is based on five-point Likert scale, which ranges from strongly disagree (1) to strongly agree (5).The instrument was administered online to180 employees from Junior Engineers (S-1) to Chief (E-7) posted across various locations. A total of 123 responses were received. As general managers and executive directors were not covered by this mode, their views were collected by interviews and discussion.

4.4 Desk study

To have a clear understanding of where this organization stands as a great place to work, following documents were examined:

- annual report;
- business responsibility report;
- delegation of power manual;
- HR manual; and
- training and HRD policy.

The inputs from above exercise have been reflected in the recommended initiatives.

4.5 Tools used

Cronbach alpha and mean values were determined during SPSS. Confirmatory factor analysis was carried out to check the validity of the instrument. Radar chart is formulated to express the mean values of constructs as a visual aid.

5. Data analysis

5.1 Statistical analysis

To measure the internal consistency (reliability) of the instrument, Cronbach alpha has been calculated. Table II shows the value of the Cronbach alpha as 0.972, which indicates a high level of internal consistency for scale with this specific sample. For further analysis, all the

seven constructs were checked individually to examine the reliability of each construct taken in the scale. Table III shows that the value of Cronbach alpha for all the seven constructs is high (>0.7), which indicates that all the seven construct used in the scale have high level of internal consistency in this specific sample. KMO and Bartlett's test has been used for the sampling adequacy, as indicated in Table IV. Results indicate high level of adequacy; hence, there is no problem with the sample size to examine the variables used in the study.

5.2 Findings

Results prove the hypothesis that this organization is a great place to work for, with positive scores (more than 3) across all seven parameters. Mean values of parameters is given below in radar chart: few important observations are given below (Figure 3):

Cronbach's alpha	No. of items
0.972	50

Table II. Reliability statistics of the instrument

Constructs	Cronbach's alpha	No. of items
Pride	0.895	8
Camaraderie	0.828	7
HR policies and practices	0.899	10
Opportunities for growth and development	0.758	5
Degree of empowerment	0.810	5
Supportive work environment	0.872	8
Credibility	0.905	5
Overall reliability	0.972	50

Table III. Reliability statistics for each construct of the instrument

Kaiser–Meyer–Olkin measure of sampling adequacy		0.893
Bartlett's Test of Sphericity	Df	21
	Sig.	0.000

Table IV. KMO and Bartlett's test

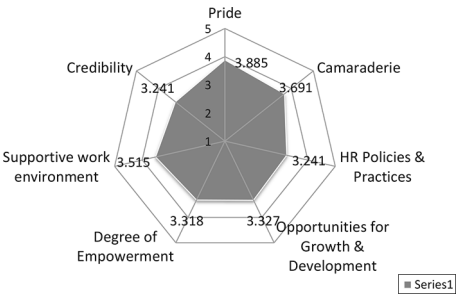


Figure 3. Mean values of parameters

- There are 50 items and 7 constructs in the scale. Each item is individually examined on the basis of responses of the sample. As indicated in Table V, mean value of all items ranges from 3.2 to 3.8. Most of the mean values are above and near the neutral value (3) of the scale, which indicates that employees are satisfied with this organization as a great place to work.
- Table III indicates that constructs of both HR policies and practices, and credibility have the lowest mean value i.e. 3.24, which means these two parameters need attention. Therefore, they need to be addressed by the top management to move toward becoming a great place to work at.
- Items no. 30 and 50 indicate overall satisfaction of employees with this organization as a great place to work for. Therefore, they were not taken in any of the seven constructs. Their mean values were compared with total mean value of constructs, as indicated in Table VI. Mean value of all the constructs is 3.45 and mean value of these 2 items is 3.68. The difference between the two is 0.224 only, which is marginal. This corroborates the responses of employees on seven constructs with their response on these two items.
- There are two items of HR policies and practices, which have mean value below 3 out of all the items. Item 29, i.e. "Performance of employees is evaluated fairly" has mean value of 2.98, while item 44, i.e. "Rewards and Recognition are adequate in this organization" has mean value of 2.95. Therefore, it is a pointer toward making PA system more transparent and to have proper reward and recognition programs.
- In open-ended questionnaire, almost 90 per cent of employees raised their concerns about fairness in implementation of transfer policy and associated problems arising out of transfer particularly hampering of studies of their wards owing to frequent transfers, absence of quality schools in remote locations *vis-a-vis* those available in cities. etc.

6. Recommendations

Following measures are recommended on the basis of the findings of desk study and survey to become a great place to work for:

6.1 Non-monetary rewards

This organization being a public sector has its own limitations in motivating employees through monetary rewards beyond a point. However, some of the non-monetary measures, which can help address this issue, would be as follows:

- *Long Service Award*: It should be given to employees completing 20 years of service. In this way, employees will feel valued by the company.
- *"Star Performer" of the Month*: From each department, employees performing excellently well in a month can be identified and their names can be displayed at the notice board.
- *Coffee with CMD (CWC)*: On the basis of best e-suggestion scheme that already exists, those employees whose suggestions are selected for implementation should be given opportunity to have coffee with CMD to share their views.
- *Appreciation Letter*: It should be given by head of unit to best performers.

$N = 123$ Sig. (2-tailed)	Pride_avg	Camaraderie_avg	HR Pol and Pract_avg	Opp.for Growth and Devt._avg	Deg of empower._avg	Supportive wk envt_avg	Credibility_avg	SD	Mean
Pride_avg		0.711**	0.628**	0.792**	0.659**	0.707**	0.636**	0.6633	3.88
Camaraderie_avg			0.744**	0.647**	0.685**	0.710**	0.732**	0.5842	3.69
HR Pol and Pract_avg				0.686**	0.813**	0.755**	0.816**	0.6883	3.24
Opp. For growth &Devt _avg					0.659**	0.607**	0.659**	0.7513	3.32
Deg of empower._avg						0.775**	0.771**	0.6842	3.31
Supportive wk envt_avg							0.784**	0.6284	3.51
Credibility_avg								0.801	3.24

Note: **indicates that correlation between the two constructs is significant

Table V.
Correlation of constructs

	Descriptive statistics				
	N	Minimum	Maximum	Mean	SD
Pride_avg	49	1.5	5.0	3.885	0.6633
Camaraderie_avg	49	1.9	4.9	3.691	0.5842
HR Policies and Practices_avg	49	1.6	4.6	3.241	0.6883
Opportunities for Trg and Devt_avg	49	1.2	5.0	3.327	0.7513
Degree of empowerment_avg	49	1.2	4.6	3.318	0.6842
Supportive wk envt_avg	49	1.0	4.9	3.515	0.6284
Credibility_avg	49	1.0	5.0	3.241	0.8010
Total_avg	49	1.0	5.0	3.459	
Item30 &50_avg	49	1.0	5.0	3.684	0.7819
Valid N (listwise)	49				

Table VI.
Descriptive statistics

6.2 Performance management system

Employees have pointed out the need for a fair and transparent Performance Management System. Therefore, for designing a transparent and robust Performance Management System, the following areas need to be taken into consideration:

- developing job description at each level as an indicative template for target setting;
- involving appraise in target setting and quarterly review discussion/follow-up;
- feedback and counseling of appraise after the appraisal process;
- training to raters to equip them understands the intricacies of components; and
- implementing an online system for PMS so that the ratings once given by appraiser and captured in system cannot be manipulated.

6.3 Project people management

This Project People Management (PPM) incorporates People Transfer Management (PTM) & People Care Management (PCM), which are given below (Figure 4):

6.3.1 People transfer management (PTM). The objective is to reduce the anxiety of employees on being transferred and to ensure that people do not face any problem in

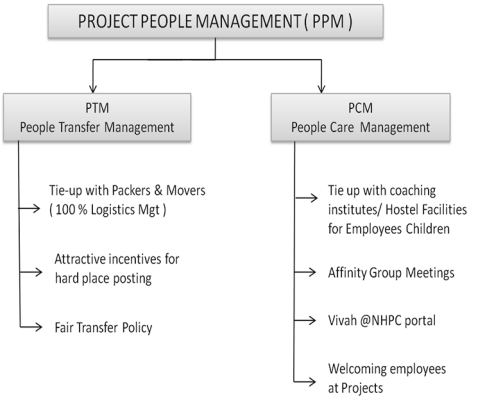


Figure 4.
Model of Project People Management

relocating. This will not only reduce their burden but also lower the cost of the organization. It includes following:

- tie up with packers and movers to provide 100 per cent logistics management for point to point service to make the process of transition smooth.
- providing attractive incentives for hard place of postings; and
- implementing fair and transparent transfer policy.

6.3.2 People care management (PCM). The main objective of PCM would be to ensure that employees and their families are taken due care and they enjoy the social affinity (Emotional and Social aspect). It will include following:

- Affinity Group meetings (AGM) of employees posted across different locations to discuss shared cultures, interests and issues, which would lessen the culture shock and make employees' smooth settlement at projects;
- tie up with coaching institutes and providing hostel facilities for employees' children in $10^{th}$and 12^{th} class at appropriate place; and
- introducing welcoming program for new as well as old employees at projects/P.S.

6.4 Developing a "CONDUCIVE" culture

To enhance the effectiveness of the organization as a great place to work for, in line with the above recommendations, the authors propose the organizations to develop a "CONDUCIVE" culture, which has a number of activities. This conducive model envisages to create a conducive culture covers all the seven parameters, which have been covered in the study. A conducive culture needs to be developed, which will focus on **c**amaraderie, **o**pportunities for growth and development, nurturing pride, empowerment, **c**redibility, **i**nnovative HR policies and practices, providing vivacious work environment in addition to focusing on employer branding and **u**nderstanding stakeholders engagement. This CONDUCIVE culture will lead to employee engagement, which will make an organization a great place to work for (Figures 5 and 6).

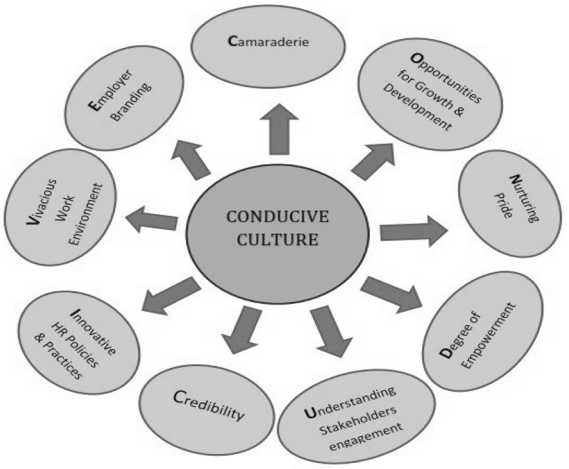


Figure 5.
Model of CONDUCIVE Culture

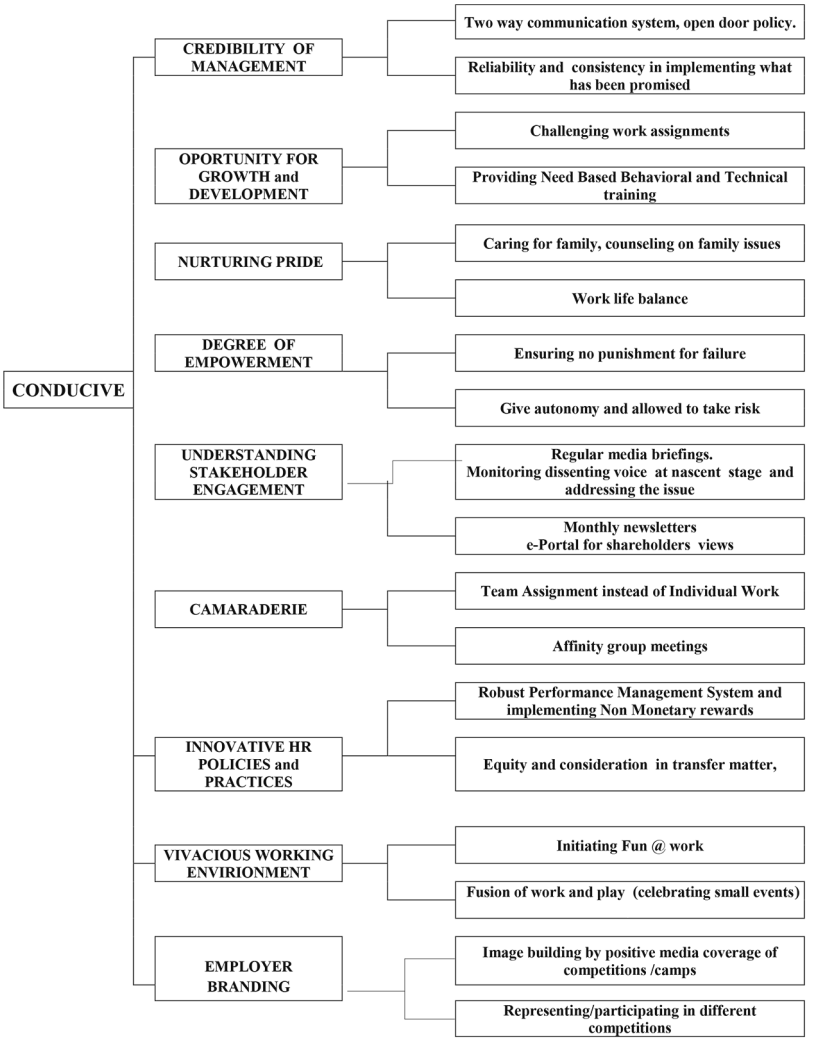


Figure 6.
Dimensions of conducive culture

The above dimensions of conducive culture can be mapped to five-fold framework. The given dimensions will correspond to the five pillars of the five-fold framework in the following manner:

(1) Physical: Vivacious work environment as fusion of work and play will make them physically fit;

(2) Intellectual: Opportunities for growth and development and giving empowerment to them would stimulate them intellectually;

(3) Social: Employer branding and understanding stakeholder engagement can be mapped to the social pillar. Employer branding means creating a good image of the organization socially. Similarly regular media briefings and hearing out the voices of the stakeholders would cater to the social pillar;

(4) Emotional: Camaraderie (team-bonding) and innovative HR policies (non-monetary rewards) can be mapped to emotional pillar. Further, nurturing pride by means of caring, counseling and work–life balance would make them emotionally strong; and

(5) Spiritual: Credibility of management (reliability and consistency in implementing what has been promised) would fulfill their self-esteem, therefore, could be mapped to the spiritual pillar.

7. Action plan

7.1 Understanding stakeholders' engagement

To successfully implement recommended initiatives, it is crucial to engage employees who are an important segment of stakeholders in the implementation process as it will result in speeding up of the process by achieving following:

- eliminating misunderstanding;
- encouraging team work; and
- seeking cooperation from all the parties involved.

Following steps will be followed for ensuring stakeholder engagement:

- identification of stakeholders;
- establishing views of stakeholders toward recommended initiatives; and
- mapping the power of a stakeholder to take action.

7.1.1 Identification of stakeholders. First step is to identify the internal and external stakeholders. Following are the stakeholders:

(1) Internal stakeholders:

- Managing Director (MD) and other functional directors;
- Director (Personnel);
- executives association; and
- trade unions.

(2) External stakeholders:

- Government of India, e.g. Department of Public Enterprises (DPE); and
- prospective employees.

7.1.2 Establishing views of stakeholders toward recommended initiatives. This analysis records stakeholders' views, and they may take one of the four different stances to our recommended initiative. Their stance can be supportive, opposing, neutral or uncertain, as shown in the table given below (Tables VII and VIII).

7.1.3 Responsibility mapping and strategies. RASI framework given below will help in engaging stakeholders in recommended initiatives and to suggest strategies/action plan to engage them. Codes of RASI indicate following:

- *Responsible*: Where a stakeholder has a responsibility for an action.
- *Approval*: Where stakeholder has the authority to approve the proposed action.
- *Support*: The stakeholder can provide support in terms of various resources.
- *Inform*: Stakeholders need to be informed of actions being taken (Table IX).

Table VII. Stakeholders' engagement

Changes/ Issues	Stakeholders: Internal: HR Dept.	Director (Personnel)	MD and functional directors	Executives' association	External: Trade union	DPE	Prospective recruits
Institutionalization of non-monetary rewards	+	+	+	0	0	?	?
Initiating a robust Performance Management System	+	+	?	0	0	–	?
Introduction of Project People Management	+	+	0	+	+	?	+
Establishing People Management Office	+	–	0	+	+	–	?
Creating a conducive culture	+	0	+	+	+	?	+

Table VIII. Symbols and their representation

S. no.	Symbol	Key
1	+	Support
2	0	Neutral
3	–	Oppose
4	?	Uncertainty; showing divided opinion

Table IX. Stakeholders' engagement strategies

S. no	Key stakeholders	Key responsibility	Key strategy to handle
1	HR department	Responsible	Conduct workshop/training to sensitize employees about the benefits of recommended initiatives
2	Director (Personnel)	Approval	Hold Introductory meeting/discussion supplemented by survey results Presentation on benefits of implementation of recommended initiatives
3	MD and other functional directors	Approval	Presentation on benefits of implementation of recommended initiatives
4	Executives Association	Support	Meetings with members of association Share copy of report of survey results Visit to companies having great place to work
5	Non-Executive Association (Trade Unions)	Support	Meetings with union leaders Share copy of report of results Visit to companies having great place to work
6	Department of Public Enterprise (DPE)	Inform	Inform them about recommended initiatives
7	External Stakeholders/ Prospective employees	Inform	Employer branding

8. Conclusion

Indeed, it can be observed that management of this organization is focused on making it a great place to work for through various existing innovative initiatives and measures. The authors envisage a wider role of the HR department, by proposing to set up a separate People Management Office (PMO) for making it a great place to work. It will be responsible for project people management and setting up of different clubs for developing "CONDUCIVE" culture as well as taking care of five aspects of an employees' personality given in five-fold framework. It is important to orient HR division to select a group of people from managerial level to set up PMO. This PMO would entail five clubs, which will cater to employees' holistic engagement through various activities targeted at their five levels given in five-fold framework. The suggested interventions will help bringing all employees together and integrating them with a common identity (Figure 7). Details of different activities of these clubs are given in Figure 8.

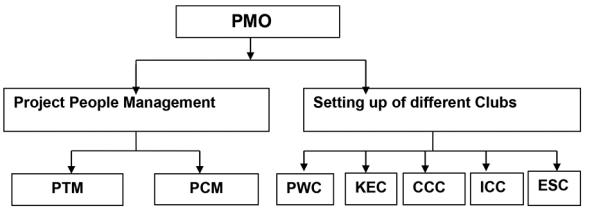


Figure 7.
People Management Office

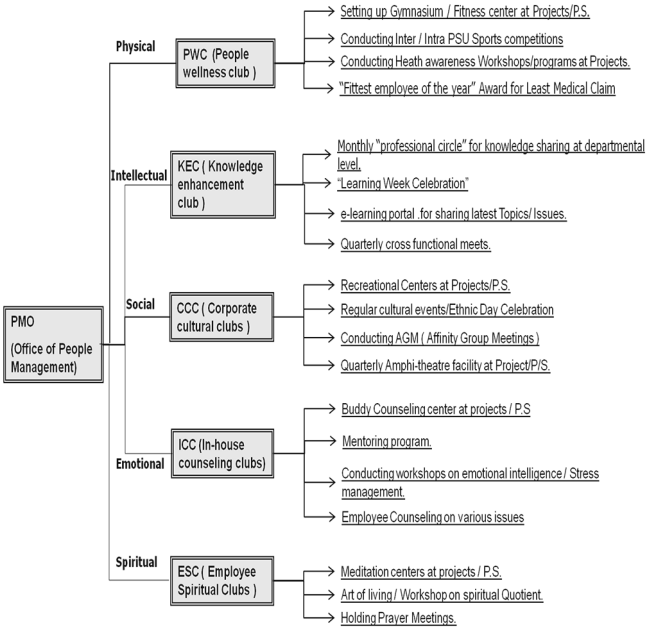


Figure 8.
Responsibility of PMO

Abbreviations used in PMO

PPM: Project People Management.
PTM: People Transfer Management.
PCM: People Care Management.
PWC: People Wellness Club.
KEC: Knowledge Enhancement Club.
CCC: Corporate Cultural Clubs.
ICC: In-house Counseling Clubs.
ESC: Employee Spiritual Clubs.

It is very important that employees of the organization experience a sense of renewal, regeneration and re-energizing. The employees can be woken up from the slumber to create, build and foster a work culture that they can be proud of. Eventually, the transformation of work culture reflecting its identity and image will create an energy and renewal of this organization. It is indeed not a milestone but an odyssey to become a "Great place to Work".

9. Practical and managerial implications

This study has several important implications for the practitioners. First, this study developed a comprehensive five-fold framework, which focuses on five aspects or levels or dimensions of a human being, i.e. physical, intellectual, emotional, social and spiritual. A person would have needs corresponding to each of these levels. This framework can be used to study employees' practices in the organizations on these five crucial dimensions. Organizations can design various programs to address employees' needs at these five dimensions to get their best and for making an organization a healthy and desired place to work. Second, the "CONDUCIVE" model proposed in this study for developing conducive culture, adds a novel insight to the growing body of literature in this area. This model can be used by HR managers to have better employee engagement which in turn will make their organization a healthy workplace. This could be a value addition to HR managers' repertoire of approaches to managing human resources in an effective manner. Third, the research is important to understand the strategies to manage different stakeholders with differing interests and viewpoints. It offers insights for responsibility mapping of stakeholders as well.

10. Limitations

The sample size is small. However, there has been an attempt to get maximum sample size within a short period that was available. The study could not map all the locations of the organization and the response of each unit may be different as each region/unit/office would have its own culture.

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Appendix. Questionnaire

Dear Respondent, Your responses shall be kept strictly confidential and used for academic purpose only.

(1) This organization is a friendly place to work
(2) I am given the resources and equipment to do my job
(3) I can count on people to cooperate
(4) I am offered training and development to enhance myself professionally
(5) I have a sense of belonging with this organization
(6) People here are treated fairly regardless of their age, caste and gender
(7) Promotions go to those who best deserve them
(8) I look forward to coming to work every day
(9) People care about each other here
(10) I'm proud to tell others that I work here
(11) There is a "family" or "team" feeling here
(12) People celebrate special events around here
(13) My superiors appreciate and recognize the good work that I do
(14) I am duly recognized for my efforts
(15) I have the freedom to take decisions necessary to completing the assigned work
(16) I am involved in the decision-making process for areas that impact my work assignments
(17) I get adequate help whenever I need from my colleagues
(18) I feel proud when I tell others that I am part of this organization
(19) The organization offers adequate opportunities for job rotation across departments
(20) We have adequate recreational facilities
(21) HR policies are employee-friendly
(22) I have a fair understanding of HR policies
(23) I would recommend this organization to a friend and family member seeking employment
(24) Given a comparable opportunity I would rather stay with this organization
(25) We are encouraged to give suggestions and use creativity in my day to day work
(26) My job provides me the opportunity to do challenging work
(27) I feel a sense of accomplishment for my work
(28) There are opportunities for my career growth
(29) Performance of employees is fairly evaluated
(30) Taking everything into account, I would say this is a great place to work for
(31) Here, employee opinions are heard and given due considerations
(32) I am assigned work that matches my competence/expertise
(33) My manager inspires me to put in my best every day
(34) My superiors provide adequate support and resources to ensure my best performance
(35) My manager provides timely feedback and suggestions which help me in improving mine performance
(36) My team members support me when things get difficult in my job
(37) Regular training is provided to employees to foster learning and development
(38) Employees are kept informed on all matters and decisions which affect the organization

(39) The degree of openness in communication here facilitates positive working relationships within the company
(40) Employees follow ethical and fair practices
(41) Employees are treated with respect and dignity
(42) I am able to balance my work and personal priorities
(43) Relevant information is shared with employees in a timely manner
(44) Rewards and recognition are adequate here
(45) Implementation of policies and processes occurs in an objective and consistent manner
(46) Employee grievances are settled in a time bound and enabling manner
(47) I feel emotionally attached to my organization
(48) I really enjoy the work environment at my work place
(49) There is a timely, regular and clear communication from management
(50) I am satisfied with this organization as a good place to work

Subjective questions

(1) Is there anything unique about this organization that makes it a great place to work for?
(2) Please recommend two factors that can make this organization a great place to work for.

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Mediating effect of innovation with market orientation and performance relationship

El efecto mediador de la innovación en la relación de la orientación al mercado y el desempeño

O efeito mediador da inovação na relação de orientação de mercado e desempenho

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Abstract

Purpose – The purpose of this study is to examine the effect of market orientation on performance and to figure out the mediator effect of incremental innovation on this relationship with an implementation on Indian small and medium enterprises (SMEs).

Design/methodology/approach – Following a survey among 333 owners/managers of SMEs in Indian, six research propositions were framed. Confirmatory factor analysis (CFA) and regression analysis was used for the purpose of data analysis.

Findings – The outcome of the study demonstrates a significant effect of market orientation on SMEs performance. In addition, the mediating effect of innovation between market orientation and business performance was not supported in the context.

Research limitations/implications – This study uses cross-sectional research, which limits the ability to test the causality; hence, such studies should be replicated in other settings also to get more evidences about the relationship.

Practical implications – The research will help managers especially in manufacturing SMEs of developing countries to understand benefits of being market-oriented to improve performance.

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Originality/value – The study attempts to enrich the market orientation literature especially in developing economies. It identifies the significant effect of interfunctional coordination on performance of small and medium enterprises working in more volatile environment. Further, the study also examines mediating role of innovation between market orientation and performance linkage.

Keywords Mediation, Market orientation, SMEs, Incremental innovation

Paper type Research paper

Resumen

Objetivo – El objetivo del estudio es examinar el efecto de la orientación al mercado en el desempeño empresarial así como el efecto mediador de la innovación incremental en una muestra de PYMEs indias.

Diseño/metodología – Utilizando una muestra de 333 propietarios/gestores de PYMEs en India se desarrollan seis proposiciones que se contrastaron mediante análisis factorial confirmatorio y análisis de regresión lineal.

Resultados – Los resultados muestran un efecto significativo de la orientación al mercado en los resultados de las PYME. Además, se corrobora el efecto mediador de la orientación al mercado.

Limitaciones/implicaciones – El estudio usa datos de sección cruzada lo que limita su capacidad para contrastar causalidad, por lo que sus resultados deberían ser contrastados en otros contextos para obtener mayores evidencia acerca de las relaciones.

Implicaciones prácticas – Este trabajo ayudara a los gestores de las PYME manufactureras en países en desarrollo a entender el beneficio para la empresa de la orientación al mercado.

Originalidad/valor – Este estudio plantea la existencia de mediadores en la relación entre la orientación al mercado y los resultados empresariales en países en desarrollo.

Palavras clave – Innovación incremental, Orientación al mercado, Mediación, PYMEs

Tipo de artículo – Revisión general

Resumo

Objetivo – O objetivo do estudo é examinar o efeito da orientação do mercado sobre o desempenho e também descobrir o efeito mediador da inovação incremental nessa relação com uma implementação em PMEs indianas.

Desenho/metodologia – Após uma pesquisa com 333 proprietários/gerentes de PMEs na Índia, seis proposições de pesquisa foram elaboradas. A análise fatorial confirmatória (AFC) e a análise de regressão foram utilizadas para fins de análise dos dados.

Resultados – O resultado do estudo demonstra um efeito significativo da orientação para o mercado no desempenho das PMEs. Além disso, o efeito mediador da inovação entre a orientação para o mercado e o desempenho dos negócios não foi apoiado no contexto observado.

Limitações/implicações da pesquisa – Este estudo utiliza a pesquisa transversal que limita a capacidade de testar a causalidade, portanto, tais estudos devem ser replicados em outros locais também para obter mais evidências sobre a relação estudada.

Implicações práticas – A pesquisa ajudará os gerentes, especialmente na manufatura de pequenas e médias empresas dos países em desenvolvimento, a entenderem os benefícios de serem orientados para o mercado para desta forma melhorar o desempenho.

Originalidade/valor – O estudo é um dos que aborda o papel da mediação na orientação para o mercado e no relacionamento de desempenho nos países em desenvolvimento.

Palavras-chave – Inovação incremental, Orientação Para o mercado, Mediação, P ME

Tipo de artigo – Revisão geral

Introduction

Owing to an extraordinarily turbulent and dynamic business environment companies are facing fierce competition. Consequently, they are forced to renew their offerings accordingly. These situations demand a firm's capability to innovate to provide a competitive advantage and superior performance (Sanz-Valle *et al.*, 2011; Lipit, 2006). A firm with better innovative

capacity responds more quickly and exploits new opportunities better than the non-innovative firms (Brown and Eisenhardt, 1995). The prime focus of innovation revolves around firm's understanding about customer's needs/wants; hence, they have been increasingly turning their attention towards the development of capabilities that are essential to building up learning about customer requirements and ways to fulfil them (Flint *et al.*, 2002). In a much more cultivated vista, the above capability is being designated as market orientation (Narver and Slater, 1990). It insinuates that to vanquish in competitive and dynamic environment, firms ought to be more innovative, and for this reason, they need to sojourn to their market orientated strategy (Laforet, 2009). In this sense, while striving to find the answer to the question that how organisations enhance their innovativeness, the outcomes of extensive researches posit a direct influence of market orientation on innovativeness. At the onset of such studies, in addition to market orientation, learning orientation was acknowledged as one of the determinants of innovation (Farrell and Oczkowski, 2002; Baker and Sinkula, 1999).

As the basic conceptualisation of learning orientation and innovation converge at "generation, acceptance and implementation of new ideas, process, products and services", learning orientation and change overlap each other (Zaltman *et al.*, 1973; Amabile, 1996). As a deduction, learning orientation and change can be appropriated as a similar construct under the designation of a firm's move. The field of research is well stuffed with market orientation, innovation and firm-performance-related researches, but most of these were pivot towards the developed countries in general and large-scale firms in particular (Hunt and Morgan, 1995; Kirca *et al.*, 2005; Oyedijo, 2012), ignoring developing countries small firm's contexts. Consequently, this research aimed to enrich literature by focusing on the two-fold objective:

(1) a majority of market orientation and innovation related studies are focused towards developed countries. The present study is conditioned in India's small- and medium-scale firms scenario; hence, the outcome will assist in bringing more maturity about the relationship that exists between constructs under investigation reflecting developing economy context; and

(2) secondly, however, there are ample studies available but few of them supports significant relationship and few suggest insignificant relationship exist between market orientation and performance (Deng and Dart, 1994; Slater and Narver, 1998; Grewal and Tansuhaj, 2001; Baker and Sinkula, 1999); hence, it is tough to derive a specific conclusion about the nature of relationship between market orientation, innovation and performance. Among them, the most significant cause may be attributed to the contextual differences, which might influence the relationship between the variables. Hence the present study addresses to fill this contextual gap.

Theoretical framework

Market orientation

The existent literature severalizes two basic approaches to market orientation – *intelligence and culture-based behavioural approaches*. The *intelligence approach* conceptualises market orientation as:

> The organisation-wide generation of market intelligence about the current and future needs of customers, the dissemination of intelligence within the organisation, and responsiveness to it. Key features of this integrated view are expanded focus on the market rather than customer

> intelligence, emphasis on a specific form of interfunctional coordination with respect to market intelligence and focus on activities related to intelligence processing rather than the effect of these activities (Kohli and Jaworski, 1990).

The embarking point of market orientation according to Kohli and Jaworski (1990) is a generation of market intelligence. They abstract intelligence generation as the composition of *understanding customer's verbal and non-verbal needs, monitoring competitor's actions and other exogenic factors and their consequences on customer preferences*. Further, they added that such information should be disseminated effectively across all departments within the organisation because it machicolates a shared platform for conjunctive actions by different departments. The intelligence generation and dissemination have no value if the firm is not able to respond it. Hence, the third element responsiveness came into the scene, which includes a selection of an appropriate segment, designing and development, promotion and distribution to effectuate present and future needs of customers (Kohli and Jaworski, 1990).

Another collateral perspective, *culture-based behaviour*, defined market orientation as:

> The culture that places the highest priority on the profitable creation and maintenance of superior customer value while considering the interest of other key stakeholders; and provides norms for behavior regarding the organizational development and responsiveness to the market information (Narver and Slater, 1990).

This approach necessitates the significance of being customer-oriented, which requires a decent understanding of customer needs and preferences to deliver superior customer value. Customer orientation ensures the firm's cognizant behaviour about persuasion of existing and future customer needs and required actions to satisfy them. Secondly, competitor orientation as defined by Narver and Slater (1990) emphasises on firm's understanding of competitor's strength/weaknesses and their long-term capabilities to assess their ability to satisfy needs of the customers of the similar segment. Creation of value is the result of delivering increasing benefits to the customers against minimal cost and anyone in the organisation can contribute in the process. The third component as posit by Narver and Slater (1990), interfunctional coordination ensures coordinated use of available resources to deliver superior value. This coordination is carefully synchronised with customer and competitor's orientation which gives a pathway for resource utilisation.

Manufacturing performance

Scholastic commitment in the advancement of performance measures is still at an adolescent stage. The conventional financial rules are being thumped around the new ways to dealing with performance estimation, which centres on non-money related measures. The earth-shattering constraint while getting to money pertaining measures is the trouble in the extraction of data from the SMEs, which works chaotically. Consequently, it is ending up more adequate to use subjective measures somewhat objective measures of the performance. We investigated conceivable individual measures from a review of extant literature (Sawang and Unsworth, 2011; De Toni and Tonchia,2001), and on the basis of insights gained, we concocted the accompanying arrangement of pointers speaking to SMEs performance appropriate for the concerned setting, which incorporates benefit objectives, sales objectives, client maintenance, adaptability, worker turnover, quality and reputation against contenders.

Market orientation and manufacturing performance

Beginning examination recognises the constructive effect of MO on the performance (Narver and Slater, 1990). A comparable result was specified by Šályová *et al.* (2015) and Houston (1986); they set that these two constructs are exceptionally related with each other, and a higher level of MO prompts better performance. The present study is situated in India, which is described as the world's fastest developing nation. In any case, juvenile data about market orientation and its impact on SMEs performance makes it troublesome for managers and policymakers to gadget suitable techniques for them. We trust that the arrangement of the factor under which SMEs work uniquely in contrast to the provision of the elements in which large-scale firms work.

Consequently, it is conceivable that SMEs carries on distinctively crosswise over various settings, and using market orientation as an aggregate-level construct might lead to a biased outcome because such a construct may not exhibit a strong effect of one of its component if the impact of other constituent elements is weak. For instance, a SME good at the customer-orientation front but weak at competitor orientation and interfunctional coordination may exhibit a low level of MO if it is taken as an aggregated construct. Hence, it raises the need for evaluation of the effect of market orientation on SMEs performance at the disaggregate level (Han *et al.*, 1998; Grewal *et al.*, 2013) .

At disaggregated level, firms with better customer orientation have the course of action of practices and outlook that places customer eagerness at best, and finally reflected as an improved performance; thus, various pros like Rindfleisch and Moorman, (2003), Balakrishnan, (1996) and Maurya, *et al.* (2015) deprecate the positive association between customer orientation and performance. A competitor-oriented firm with the propensity to reassessment its qualities and shortcomings against its contenders will tend to enhance its performance (Zhou *et al.*, 2007). Acknowledgement of potential dangers emerges owing to contenders; firms may discover better approaches to satisfy customers' needs to enhance its performance (Wood and Bhuian, 1993). These contributions about customers' inclinations and rivals' techniques are critical to conveying prevalent customer satisfaction, which can be guaranteed through appropriate coordination crosswise over various useful organisational departments. Such interfunctional coordination helps smooth and speedy stream of information inside the firm, which ensures better firm performance (Tyler and Gnyawali, 2002). Rafiq and Ahmed, (2000) conceptualise interfunctional coordination as the piece of inner showcasing and saw workers as inward clients; they place that a fulfilled inside client would produce a great result in light of a legitimate concern for the association. It infers that it isn't just essential to have adequate information about customer's need at the same time it is also critical to have sufficient contenders' information, so firms can have better comprehension about changing clients' needs and rivals move to ensure superior value delivery to the customers (Kohli and Jaworski, 1990). Given the above discourse, we hypothesise that a firm having a more prominent level of customer orientation, competitor orientation and interfunctional coordination will perform better, and it prompts the formulation of the following hypothesis:

H1a. Customer orientation positively affects performance.

H1b. Competitor orientation positively affects performance.

H1c. Interfunctional coordination positively affects performance.

The mediating role of innovation

Innovation is an essential ingredient of a firm's competitive strategy as it provides the ability to mobilise resources in conjunction with the changing business environment

(Laosirihongthong *et al.*, 2014). The use of resources in the best interest of customer order fulfilment is the result of the firm's behavioural aspect regarding customer and competitor orientation. Innovation may be defined as the adoption of policy, process, service and products that are new to the firm (Daft, 1982; Damanpour and Evan, 1984). Innovation is a medium of organisational change, which results owing to either firms' reaction against changing environmental factor or firms' pre-emptive action to influence environmental factors (Hage, 1980).Past researches have mentioned different types of innovation, but among those, three have gained more attention as compared to others, *viz*, administrative and technical innovation, product and process innovation and radical and incremental innovation (Damanpour, 1991). Managerial innovation constitutes activities like the introduction of a new management system, method and staff development program. It does not directly link with the development of new product/services slightly it influences the process of development indirectly (Kimberly and Evanisko, 1981; Damanpour and Evan, 1984). The technical innovation is concerned with the adoption of new ideas of new product/service development or adoption of a new element in the process of production or service designing and delivery (Kimberly and Evanisko, 1981). Another form of innovation constitutes product and process innovation conceptualisation. Product innovations reflect the introduction of new product/services to fulfil customer's needs, whereas process innovation demonstrates the opening of new production/service operations(Knight, 1967; Utterback and Abernathy, 1975). As product innovation corresponds to the development of new goods/services, it possesses resemblance with technical innovation in that sense, similarly processes innovation conceptualisation possess attributes of organisational innovation (Škerlavaj *et al.*, 2010; Gopalakrishnan and Damanpour, 1997).

Also, innovation can also be categorised as *incremental* and *radical* innovation (Chang *et al.*, 2014). Incremental innovation involves fulfilment of the expressed need of customer (Hayes and Wheelwright, 1984; Atuahene-Gima, 1995), whereas radical innovation is concerned with the satisfaction of customer's possible needs (Day, 1994; Stringer, 2000). While incremental innovations are an extension of existing offerings and relatively minor modification in an existing process, radical innovations are the development or application of new technology or idea that is new to the current market segment. Radical change requires excellent in-depth about new knowledge and organisational complexity as compared to the incremental change (Dewar and Dutton, 1986). As such degree of complexity and in-depth knowledge is accomplishable in large-scale firms rather than in small-scale firms, incremental change is speculated to be more pertinent in the small business scenario.

An SME that is market-oriented tends to work at the fronts of customer orientation, competitor orientation and interfunctional coordination, which brings improvement in SMEs' understanding about customer-expressed needs, and as a result, they can provide a relatively modified product to their customers and improve their process. Owing to the scarcity of resources and improper infrastructural support, SMEs might not be capable of introducing a new process/product every time to cater latent needs of the customers, but they can work for the fulfilment of the expressed requirements of the customers and may improve their performance. Hence, we posit the existence of the mediating effect of incremental innovation in market orientation and performance linkage. As market orientation is the constituent of customer orientation, competitor orientation and interfunctional coordination dimensions; hence, by going through disaggregated manner, we hypothesise as follows:

H2a. Incremental innovation mediates the relationship between customer orientation and performance.

H2b. Incremental innovation mediates the relationship between competitor orientation and performance.

H2c. Incremental innovation mediates the relationship between interfunctional coordination and performance.

Methods

Sample and data collection

As mentioned earlier, the present work addresses the scarcity of empirical investigation on market orientation; we situate this study in the world's fastest developing country, India. The sample comprised manufacturing SMEs working in a northern part of the country. These SMEs were indulged in the manufacturing of glass-based products like bangles and related items; brass-based items such as door-locks, flower pots and tabs, and units related to the production of leather shoes and allied issues. The selection of these sectors SMEs was based on their significant contributions to India's export, which ranges from $2370.22m to $3157.38m (Annual report 2016-2017, MC& IDC). By following the definition of SMEs in India (as given by MSMEs Act-2006), *a production unit with a capital investment below the* US$2.5m, were identified 435 units in different clusters. A majority of Indian SMEs belong to the unorganised sector. Hence, multiple sources were used for the purpose. Such limited population necessitates the development of schedules and personal visits for data collection. The data was gathered with the help of a two-year MBA programme's final year students, as they were having a sound understanding of the terminologies used in the schedule and were able to explain the scale's items more clearly to the respondents. The prospects were owner/managers of SMEs as the majority of them belong to the unorganised sector, and a lot of decisions are taken by owners itself; hence, its owners also play the role of managers, and they were the prime respondents of the survey. Before sending them into the field, two rounds of orientation sessions were also provided. Despite a vast and tedious exercise, we were not able to get responses from all 365 identified SMEs because of different causes. As a result, we were able to collect complete responses from 333 SMEs as the final sample units.

Demographic profile

The SMEs demographic profile is shown in Table I.

Questionnaire validation

The measurement of market orientation which comprises *customer orientation; competitor orientation and interfunctional coordination*, was measured by using MKTOR scale (Narver and Slater, 1990). The SMEs performance was measured using five points Likert scale ranging 1 = strongly disagree to 5 = strongly agree with *benefit objectives, sales objectives, client maintenance, adaptability, worker turnover, quality, reputation against contenders* and *propelling of new products* indicators. Finally, the incremental innovation was measured by:

> Procedural innovation (Innovation in policies, procedure and work schedules), Personal innovation (innovation related to human resource practices), Process innovation (newness/ modification in method/process/technology, used to produce products), and Structural innovation (innovative redesigning of department/divisions, modification in machinery and facilities, using response categories as 1 = never, 2 = rarely (1 or 2 times), 3 = sometimes (3 to 5 times), 4 = frequently (6 to 10 times), and 5 = very frequently (more than 10 times) (Koberg *et al.*, 2003).

Variable	(%)
Age group	
Below 25 yrs	26.4
Between 25 and 40 yrs	35.1
Above 40 yrs	38.4
Qualification	
High school	15
Intermediate	22.8
Graduation	25.2
Post-graduation	26.4
Other	10.5
Product produces	
Leather products	34.2
Glass products	33.9
Brass products	17.7
Mics	14.1
Capital investment	
Below INR 25 lac	25.8
Between INR 25 lac to 5 cr	36.3
Above 5 cr	37.8
No. of employees	
Below 5	25.8
Between 5 and 15	36.3
Between 15 and 25	37.8
More than 25	21.3
Firm age	
Less than five yrs	38.7
Between 5 and 10 yrs	34.8
More than 10 yrs	26.4

Table I.
Demographic profile

The scale reliability and validity was assessed by using CB-SEM using AMOS software. We analysed the measurement issue for each construct individually, and the corresponding results are shown in Table II . All indices, RMR = 0.06 (<0.08; Bentler,1995) ; RMSEA = 0.03 (<0.06, Steiger, 1980); GFI = 0.93 (>0.90, Jöreskog and Sörbom, 1986); AGFI = 0.91 (>0.90, Jöreskog and Sörbom, 1986); NFI = 0.93 (>0.90, Bentler and Bonett,1980); TLI = 0.98 (0.95, Tucker and Lewis,1973) and GFI = 0.99 (>0.95, Bentler, 1990) indicate an acceptable fit for data. It gave first-hand support for reliability and validity of the scale. Also, all factor loadings were ranging from 0.70 to 0.80, giving support to the concurrent validity. Next, we

Construct	Construct reliability	Cronbach alpha	Average variance extracted
Customer orientation (CO)	0.88	0.87	0.53
Competitor orientation (COMPO)	0.75	0.84	0.57
Interfunctional coordination (IC)	0.97	0.86	0.55
Incremental innovation (INCINV)	0.74	0.84	0.56
Performance (PFMNCE)	0.83	0.90	0.56

Table II.
Reliability indicators and AVE of constructs

calculated the cronbach alpha coefficient, construct reliability (CR) and average variance extracted (AVE) for every construct (Table II). All values were found as per the recommended values (Hair *et al.*, 1998); it gives additional support to the existence of convergent validity.

To assess discriminate validity, we conducted nested model comparison analysis (Sharma, 2000). The fit indices of the unconstrained model were compared with the indices of nested models, where the covariance between any two constructs was fixed to 1 (e.g. CO–IC, the covariance between the customer orientation and interfunctional coordination was set as 1. As shown in Table III, the Chi-square value of each nested model was found higher than the Chi-square of the unconstrained model. It indicates the fitness of unconstrained model against the constrained models and providing support for the existence of discriminant validity (Sharma, 2000; Gaur *et al.*, 2011).

Result

The hypotheses were tested using path analysis. As hypotheses *H1a, H1b* and *H1c* correspond to the direct effect of CO, COMPO and IC on SMEs performance; Model 1 was tested without the inclusion of any mediator (see Figure 1) . Among three dimensions of market orientation, only inter-functional coordination was found significantly affecting performance, and the overall model was able to explain approximately ten per cent of variances in dependent performance variable. Hence, *H1a* and *H1b* were rejected, and *H1c* was accepted (Table IV) .

Further, to test hypotheses *H2a, H2b* and *H2c*, another model, indicating incremental innovation as a mediator variable, was considered (Figure 2).

The direct effect of CO on PFMNCE was reduced from 0.21 to 0.18; the impact of COMPO on PFMNCE was found unchanged, and the direct effect of IC on PFMNCE was slightly reduced to 0.25 from 0.57. The mediation effect was tested by VAF. It determines the size of the indirect impact on the total effects (i.e. direct effect + indirect effect): VAF indirect effect/ total effect. The variance accounted for (VAF) was estimated as 13 per cent, which shows no significant mediation effect of innovation on CO–PFMNCE relationship; thus, hypotheses *H2a* was not supported. Similarly, the estimation of VAF for mediating impact of incremental innovation in between COMPO, IC and PFMNCE linkage, indicate no mediation effect; hence, hypotheses *H2b* and *H2c* were also rejected (Hair *et al.*, 2013) (Table V).

Table III.
Chi-sq and CFI of unconstrained and different constrained models

	chi sq	Df	CFI
Unconstrained model	360.11	289	0.99
Constrained model			
CO–INV	731.45	290	0.91
CO–PF	425.21	290	0.97
CO–COMPO	363.71	290	0.99
CO–IC	361.59	290	0.99
COMPO–IC	362.09	290	0.99
COMPO–PF	437.18	290	0.97
COMPO–INCINV	701.51	290	0.91
IC–PF	418.96	290	0.97
IN–INCINV	722.85	290	0.91
PF–INCINV	584.02	290	0.94

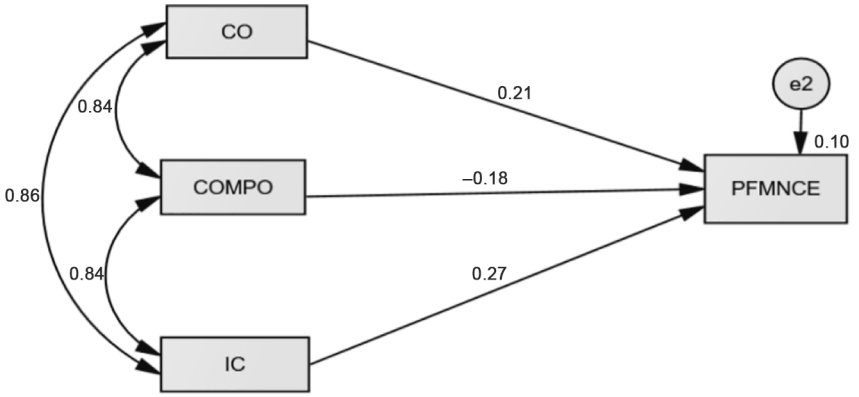

Figure 1.
Direct effect of market orientation dimensions on performance

	Hypothesized Path		Std. estimate	P
PFMNCE	<—	CO	0.21	0.065
PFMNCE	<—	COMPO	−0.18	0.089
PFMNCE	<—	IC	0.27	0.016

Table IV.
Path estimates without mediator

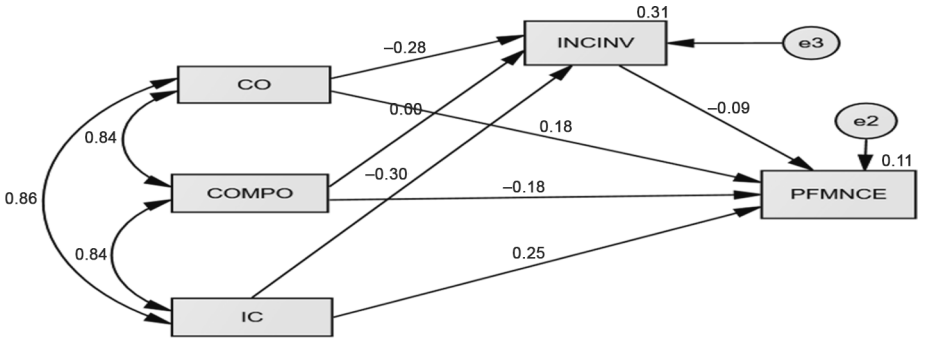

Figure 2.
Direct and indirect effect of market orientation dimensions on performance with incremental innovation as mediator

	Hypothesized Path		Std. estimate	P
INCINV	<—	CO	−0.28	0.005
INCINV	<—	COMPO	0	0.99
INCINV	<—	IC	−0.30	0.003
PFMNCE	<—	CO	0.18	0.105
PFMNCE	<—	COMPO	−0.18	0.089
PFMNCE	<—	IC	0.25	0.032
PFMNCE	<—	INCINV	−0.1	0.17

Table V.
Path estimates with mediator

Discussion and implication

The objective of the study was to examine the mediating effect of incremental innovation as a mediator variable in the relationship between different dimensions of MO and SMEs performance. The results indicate a significant effect of inter-functional coordination on performance; hence, *H1c* was accepted. While the effect of the other two dimensions, i.e. customer orientation and competitor orientation, was found insignificant but tested as predictive variables of performance, and thus, the corresponding hypotheses *H1a* and *H1b* were not supported. These outcomes were obtained by disaggregating market orientation into its underlying dimensions, namely, customer orientation, competitor orientation and interfunctional coordination. Further, all three dimensions of market orientation together were able to explain only 10 per cent of variances in the dependent performance variable.

Such lower estimation of $R^2 = 11$ is not an exemption particularly in contemplates directed in settings outside the US (Pitt *et al.*, 1996) and could be ascribed to the nearness of the other indicator factors of the performance. Furthermore, the advancement of market orientation is the consequence of the long haul speculation, and because of monetary limitations, it is exceptionally troublesome for the SMEs to make such ventures, which might be reflected as a weak connection between market orientation and performance (Chan Hung Ngai and Ellis, 1998). Such feeble connection may likewise be a confirmation of a probability to be great in performance without being as a decent marketer, as recommended by Hooley *et al.* (1990). As it is now said that there is no commonly concurred accord on the heading of relationship exist between market orientation and performance, the result of the investigation is only an impression of the concerned setting. These outcomes are predictable and consistency with the general pattern in the many actual research on market orientation and performance relationship. As we have already mentioned the presence of equivocal ties between these two constructs our findings ought to be seen with regards to our investigation. With few dimensions of market orientation like interfunctional coordination significant effect on the performance, we find partial support for the market-orientation models proposed by Gaur *et al.* (2011) with regards to SMEs from India.

As the study posits an insignificant impact of competitor orientation on SMEs performance, one of the conceivable purposes behind this might be because of SMEs accentuation on catering local market needs, and henceforth, they confront less competition as compared to the large-scale companies (Singh and Gaur, 2009). Also, a less formal organisational structure leads to direct and hassle-free customer relationship as the outcome level they may face the lesser impact of competition. Excess focus on fulfilling local customer's needs might create a situation, wherein the SMEs managers see the world according to the viewpoint of current customers only and avoid risks by taking, which they might face while attempting to grab new customers. Christensen and Bower (1996), Eggers *et al.* (2013) mentioned such stagnation around the local market and hence customers as the prime factor of poor performance. Thus, SMEs operating in India are required to widen their focus not only at a specific set of the customer, but to make themselves more competitive and diversified, they should be more oriented towards identifying and fulfilling diverse customer's needs to improve their performance. As the Indian SMEs have relatively lesser complex organisational structure, it is easier to cooperate with various business functions. Such coordination leads a synergistic effect, which is essential to attain a common goal regarding better performance (Atuahene-Gima, 1996;

Gaur *et al.*, 2011). Additionally, such organisational structure assists in the smooth flow of information within the organisation, improving intelligence system and therefore better coordination and performance (Alvarez and Busenitz, 2001). Consequently, hypotheses *H1c* was accepted indicating a significant effect of inter-functional coordination on performance.

The mediating effect of incremental innovation was found insignificant. Although the presence of mediator variable has slightly increased the R^2 value to 0.11 from 0.10, this change was found irrelevant and was not able to accept hypotheses *H2a, H2b and H2c*. As innovation required employees with suffice skills and availability of such skilled people in SMEs is very scarce; hence, exercising innovative practices to get the desired outcome is an arduous task for these firms. Generally, owing to the lack of proper financial and infrastructural support, SMEs finds themselves unable to attract and recruit highly skilled workforce. These lacking adversely affects their innovation capability and overall performance. Another factor that limits the innovation rate in SMEs is the high demand volatility. It seeks a frequent adaptation in innovative practices to deal with such uncertainty, and owing to various constraints, it may be possible that SMEs get reluctant to invest their resources in developing new products. Taking the relevance of these issues in all the Indian SMEs altogether, we were not able to establish a significant mediation role of innovation in the relationship of different market orientation dimensions and performance.

This study has important implications for researchers and practitioner both. In the introduction, we highlighted the scarcity and equivocal finding issues of market-orientation research in developing countries. The present study is an attempt to bridge this gap and shine some light on the nature of relationship that exists between market orientation and SMEs performance. We found that among three dimensions of market orientation, only interfunctional coordination was found significantly affecting the performance variable. The role of employees in interfunctional coordination can be an essential aspect, which might be explored. Owing to less complex organisational structure, SMEs can manage information flow more effectively to get the better performance, and at the same time, they can also have more empathetic treatment to its customers.

For the practitioner, we recommend developing a sound recruitment and selection process to get high-skilled employees because they are the key to effective coordination and hence performance. Also, they should try to bring more flexibility to the system so that SMEs can react against volatile demand in a better manner. It will ensure high customer orientation, which will yield superior performance. Along with customer orientation, it is also essential to make organisation competitive because customer compares your offering from rival's offering and many time these comparisons created a base for purchase decisions hence SMEs owner/manager should try to tap new customer, and they should not focus only on current customers. As the prerequisite of all, effort should be made to strengthen infrastructural support, financial support and other resources.

Limitations

Our study has a few flaws, which also opens avenues for future research. Firstly, the study uses a cross-sectional design, which limits its ability to test causal relationships. As such research is scarce in the Indian setting, another evidence for it should also be collected. Secondly, we haven't considered the contingency moderator variables effect on market orientation and performance relationship, which might increase the variance explanation of the performance variable (Gaur *et al.*, 2011; Kohli and Jaworski, 1990;

Narver and Slater, 1990). Hence, future research should focus on the inclusion of moderator variables in these settings. Thirdly, the sample unit consisted of only manufacturing SMEs, and the study didn't cover the service sector. To establish a comprehensive understanding of the relationship, it will be rational to conduct such studies taking the service sector SMEs as the sample unit.

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Role of the eco-natural environment as an alternative attractiveness factor in malls

Papel del ambiente eco-natural como factor alternativo de atracción en centros comerciales

Papel do ambiente ecologicamente natural como fator de atratividade alternativo nos shoppings

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Abstract

Purpose – The mall industry in Latin America has grown rapidly in the past decade, offering diverse proposals oriented to improving the attractiveness of this commerce format; along this line, despite the fact that several studies have analyzed variables from an ecological perspective based on the relationship of the physical space with the consumers (from a marketing context), there is shortage in research regarding alternative attractiveness factors inspired by nature, although its connection with people's behavior has been confirmed. Therefore, the purpose of this paper is to answer the following question: Is the perception of environments with natural resources displayed in malls an alternative attractiveness factor for visitors? Thus, does it benefit its own competitive management against other attractiveness variables that focus on offering variety, accessibility, physical design and entertainment?

Design/methodology/approach – The quantitative method is an exploratory factor analysis that is followed by a confirmatory analysis and resulting in a measurement model based on 470 effective questionnaires. The exploratory and confirmatory nature focused on multidimensional verification of the measurement model (including the validation of the eco-natural environment) justified this choice in consistence with prior research that has used goodness of fit criteria.

Findings – The paper not only suggests the existence of a perception factor in the eco-natural environment, but it also determines its comparative importance over other traditional attractiveness factors reported in scientific literature. Particularly because commercial attractiveness is a consequence of how marketing variables are managed by malls and of how consumers respond to said variables, benefiting the visit's experience.

Practical implications – The paper contributes to malls' competitive management by suggesting and proving the importance of the eco-natural environment as a commercial attractiveness factor; thus, the results

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encourage this format's developers to take into account new ways of persuasion considering its progressive and competitive rise in the past years in Latin America.

Originality/value – There is shortage of research on alternative attractiveness factors for malls; therefore, contrasting the eco-natural environment in a measurement model of commercial attractiveness allows contributing strategic information to the industry, which in turn constitutes an innovative resource to lure and motivate visitors. On the other hand, the paper contributes the state of knowledge of environmental variables over consumers' assessments.

Keywords Ambiente de naturaleza, Centros comerciales, Factores de atraccin, Marketing eco-natural

Paper type Research paper

Resumen

Objetivo – La industria de los centros comerciales en américa latina ha crecido rápidamente en la última década caracterizándose por diversas propuestas orientadas a mejorar la capacidad de atracción de estos formatos de comercio; en esta línea, a pesar de que existen varios estudios que han analizado dichas variables desde una perspectiva ecológica basada en la relación del ambiente físico con los consumidores en el contexto de marketing, existe una escases de investigación sobre factores alternativos de atracción inspirados en la naturaleza pese a su ya comprobada relación sobre el comportamiento de las personas. Por tanto, este documento tiene como objetivo responder a la siguiente pregunta: ¿La percepción de ambientes con recursos naturales dispuestos en centros comerciales son un factor alternativo de atracción para visitantes? y, por tanto, puede favorecer su propia gestión competitiva frente a otras variables de atracción centradas en la variedad de la oferta, la accesibilidad, el diseño fisico y el entretenimiento.

Diseño – El método cuantitativo corresponde a un análisis factorial exploratorio seguido por un análisis confirmatorio obteniendo un modelo de medida a partir de 470 cuestionarios efectivos. La naturaleza exploratoria y confirmatoria centrada en comprobación multidimensional del modelo de medida (incluyendo la validación del ambiente eco-natural) justificó esta elección en coherencia a investigaciones antecedentes que han utilizado criterios de bondad del ajuste.

Resultados – La investigación no solamente sugiere la existencia del factor de percepción del ambiente eco-natural, sino que también permite determinar su importancia comparativa sobre otros factores tradicionales de atracción reportados por la literatura científica. Particularmente debido a que la atracción comercial es una consecuencia de cómo gestionan las variables de mercadeo los centros comerciales y de cómo responden los consumidores a dichas variables favoreciendo su experiencia de visita.

Implicaciones prácticas – La investigación contribuye a la gestión competitiva de los centros comerciales al sugerir y demostrar la importancia del ambiente eco-natural como factor de atracción comercial, ante lo cual, los resultados alientan a desarrolladores de estos formatos a considerar nuevas formas de persuasión teniendo en cuenta su aumento progresivo y competitivo en los últimos años en américa latina.

Originalidad/valor – Existe escases de investigaciones sobre nuevos factores alternativos de atracción para centros comerciales, en esta línea, contrastar el ambiente eco-natural en un modelo de medida de atracción comercial, permite aportar información estratégica a la industria constituyéndose un recurso innovador para conquistar e incentivar a visitantes. Por otra parte, la investigación logra aportar al estado de conocimiento de las variables ambientales sobre las evaluaciones del consumidor.

Palabras clave – Ambiente ecológico, Ambiente de naturaleza, Factores de atracción, Centros comerciales

Tipo de artículo – Trabajo de investigación

Resumo

Objetivo – O setor de shopping centers na América Latina cresceu rapidamente na última década, oferecendo diversas propostas orientadas para melhorar a atratividade deste formato de comércio; Nessa linha, apesar de vários estudos terem analisado variáveis de uma perspectiva ecológica a partir da relação do espaço físico com os consumidores (de um contexto de marketing), há escassez de pesquisas sobre fatores de atração alternativos inspirados na natureza, embora a conexão com o comportamento das pessoas foi confirmada. Portanto, o objetivo deste documento é responder a seguinte pergunta: A percepção de ambientes com recursos naturais apresenta nos shoppings um fator de atratividade alternativo para os visitantes?

Assim, beneficia a sua própria gestão competitiva contra outras variáveis de atratividade que se concentram em oferecer variedade, acessibilidade, design físico e entretenimento?

Metodologia – O método quantitativo é uma análise fatorial exploratória que é seguida por uma análise confirmatória e resulta em um modelo de mensuração baseado em 470 questionários efetivos. A natureza exploratória e confirmatória focada na verificação multidimensional do modelo de mensuração (incluindo a validação do ambiente eco-natural) justificou essa escolha em consistência com pesquisas anteriores que utilizaram critérios de qualidade de ajuste.

Resultados – A pesquisa não apenas sugere a existência de um fator de percepção no ambiente eco-natural, mas também determina sua importância comparativa em relação a outros fatores de atratividade tradicionais relatados na literatura científica. Particularmente porque a atratividade comercial é uma consequência de como as variáveis de marketing são gerenciadas pelos shoppings e de como os consumidores respondem a essas variáveis, beneficiando a experiência da visita.

Implicações práticas – A pesquisa contribui para a gestão competitiva dos shoppings ao sugerir e comprovar a importância do ambiente ecologicamente natural como fator de atratividade comercial, assim, os resultados incentivam os desenvolvedores deste formato a levar em conta novas formas de persuasão, considerando sua progressividade e competitividade em aumento nos últimos anos na América Latina.

Originalidade/valor – Há escassez de pesquisas sobre fatores de atratividade alternativos para shoppings, portanto, contrastando o ambiente eco-natural em um modelo de mensuração de atratividade comercial permite contribuir com informações estratégicas para a indústria, que por sua vez constitui um recurso inovador para atrair e motivar visitantes. Por outro lado, a pesquisa contribui para o estado do conhecimento das variáveis ambientais sobre as avaliações dos consumidores.

Palavras-chave – Ambiente ecológico, Ambiente de natureza, Fatores de atracção, Shopping

Tipo de artigo – Artigo de pesquisa

1. Introduction

Nowadays, the mall culture plays an important role in consumers' lifestyles (Calvo-Porral and Lévy-Mangín, 2018) because they have become entertainment and leisure spaces that transcend shopping (Bäckström, 2011), offering navigation activities that are characterized by the search of pleasurable experiences in benefit of its own attractiveness (Palacios *et al.*, 2016). Consequently, the study of design and development of innovative spaces to motivate the intention to visit is an important stimuli in malls' competitive management, in which the environmental and offer dimensions have been more prominent in prior research related to malls' attractiveness (Gomes and Paula, 2017).

In this context, and despite the fact that the role of the physical environment in malls' attractiveness has been tackled by many studies (Calvo-Porral and Lévy-Mangín, 2018; El-Adly and Eid, 2016; Mittal and Jhamb, 2016; Aliagha *et al.*, 2015; Singh and Prashar, 2013; Banerjee, 2012), there is shortage in the amount of research that has delved into the role of nature from an ecological perspective within the mall. Meaning, consumers' relationships with the physical environment based on attractiveness focused on vegetation (Milton, 2003; Turner, 2005).

Recently, Rosenbaum *et al.* (2018) and Rosenbaum *et al.* (2016) have suggested positive effects over human health of physical environments that use nature's resources in malls (attention restoration), highlighting the need to conduct more studies that contribute to the state of the literature, for instance, its role compared with other commercial attractiveness variables.

In turn, research applied to service environments (Tifferet and Vilnai-Yavetz, 2017; Brengman *et al.*, 2012) and hotel preference (Kim and Han, 2010; Lee *et al.*, 2010) has also proven the differentiating value of vegetation stimuli and scenarios, arguing that people are aesthetically attracted by surroundings and landscapes inspired by nature. However, said studies have not contrasted the role of the nature-based physical environment against other commercial attractiveness factors in the competitive management context, so this work

broadens the state of the literature to validate its latent character as an attractiveness variable in a commercial environment format which is expanding in Latin America (Forbes, 2017).

Given the aforementioned, the study of the existing relationships between people and the configuration of the physical environment corresponds to the field of landscape ecology (Turner, 2005) where the consideration of specific attractiveness exercised by the perception of plants, bushes and green areas (Milton, 2003) constitutes the main interest of this document, hereinafter referred to as the "eco-natural environment": an approach to ecology applied to the landscape of vegetation and nature (Naveh and Lieberman, 2013).

This research argues that the perception of the eco-natural environment may be considered an alternative attractiveness factor that complements other attractiveness factors in malls reported by the literature; lastly, it supposes a latent coexistence through a measurement model.

The objective of this research is twofold: first, assessing the role of the eco-natural environment as an attractiveness factor compared with other traditional attractiveness factors in malls that focus on accessibility or convenience, entertainment, distance to the mall and offer variety (Gomes and Paula, 2017). Second, providing empirical evidence of the value of the eco-natural environment as a likely competitive management resource for malls, considering the existence of 1,800 malls in Latin America (Portafolio, 2015) that require construction work with innovative design, capable of attracting clients to attain profitability (Borgers and Vosters, 2011).

To comply with these objectives, what follows is the literature review, methodological strategy, results and conclusions of the findings; they are presented as discussion.

2. Literature review

Several studies describe the importance of examining the creation and image of pleasant environments as a relevant factor to attract more clients and improve consumer experience (Gomes and Paula, 2017; Ortegón and Rodríguez, 2016; Palacios *et al.*, 2016; Ortegón and Royo, 2015; Frasquet *et al.*, 2002).

El-Adly and Eid (2015) have stated that malls provide and drive more value for customers than an independent store, as customers feel more attracted by a wider offer and assortment of stores and products, which has caused malls to evolve by expanding their activities and architectural design to include a wide range of services and entertainment. Consequently, a diversity of attractiveness variables is observed today; these according to specific needs and contexts, which has enabled diverse models and typologies of attractiveness factors for malls (for a review, refer to Gomes and Paula, 2017).

2.1 Attractiveness factors in the mall

Calvo-Porral and Lévy-Mangín (2018) have indicated that the mall's attractiveness favors client loyalty through achieved experience. With the interest of contextualizing the attractiveness factors reported by the literature, a systematic literature review (Kitchenham, 2004) has been conducted with a bibliographic account of journals in the Scopus (71) and Web of Science (31) databases, classifying and selecting important documents depending on their nature and content, and based on the author's judgment.

The review process starts with the identification of keywords associated to attractiveness "attract*" combined with "mall" or "shopping center" (in Scopus, in the field of business, administration and accounting; and in Web of Science, in the social sciences field) so that search equations were built for each database[1]. As a result, 24 per cent of the documents reviewed were selected, all of which were included based on empirical studies

that described observable or latent attractiveness variables toward malls; moreover, the exclusion criteria were associated with research that analyzed other topics such as the evolution of commerce (including commerce typologies), cultural consumption, urban development, analysis of stores and restaurants in the mall, client traffic or displacement models and economic investment measurements, among others. This process benefited the understanding of the state of the literature.

A comprehensive table was drafted to present empirical works available in important databases, following the systematic process related to attractiveness factors number and typology (see Table I).

The literature review revealed a lack of consensus regarding the number and typology of attractiveness factors; however, common attractiveness variables can be deduced given its repetitive and similar nature, which can be grouped in a frequent interest variable through syntactic and semantic categorization (Rosch, 1978). Accordingly, the following variables are deduced:

- accessibility to the mall, including common aspects to the ease of access, such as location, route convenience, time of journey, convenience of house and ease of parking;
- the mall's offer and variety, including diversity of stores, products and services, shopping preferences, promotions, offer value and sales staff available to the mall's visitors;
- presence of clients in the mall, including number of people, consumers' characteristics, socialization, circulation and agglomeration of people;
- physical design of the mall, containing perception aspects in terms of size, interior or exterior design, architecture, physical attractiveness, comfort conditions, cleanliness and pleasant overall appearance of the atmosphere;
- mall's status, represented in aspects such as feeling of luxury and prestige based on the presence of excusive stores, products and services;
- entertainment in the mall; with aspects connected to the consumers' response to excitement, motivation, participation and joy, given the recreational and leisure options available; and
- the environment of nature within the mall, which is only taken into account by one document (Ortegón Cortázar and Royo Vela), evincing the scarcity of research on the matter.

El-Adly (2007) and Teller *et al.* (2016) have expressed that studying mall attractiveness factors may be a source of information to improve the business' competitive management, its segmentation and positioning in a market in which, literature says, the characteristics of the physical environment and of the offer are highly relevant for mall attractiveness (Gomes and Paula, 2017).

The study of relationships between the physical environment and the consumers' response in the context of management and marketing is commonly known as atmospherics (Spence *et al.*, 2014; Michon *et al.*, 2005). Kotler (1973) proposes the existence of positive effects of the shopping environment over the emotional and behavioral states of consumers. Yet, despite several studies that have proven the effects of the physical environment's configuration (Turley and Milliman, 2000), there is not a lot of information about the role of physical environments that use stimuli from nature, as it is a relatively new area of knowledge (Rosenbaum *et al.*, 2018).

Study	No. of factors taken into account	Attractiveness factors
Hu and Jasper (2018)	Eight	Avoidance, exploration, socialization, activity, fashion shopping, exclusivity, service and aesthetics
Križan *et al.* (2018)	Two	Location of the mall and mall's attractiveness
Upadhyaya (2017)	Seven	Physical environment, property administration, promotions, shopping experience, entertainment, availability and satisfaction and client loyalty
Ortegón Cortázar and Royo Vela (2017)	Five	Physical environment, cleanliness and safety; natural design and environment; mobility and accessibility; added services and entertainment; and variety, quality and offer prestige
Teller *et al.* (2016)	Four	Accessibility, parking conditions, commercial variety, mall's atmosphere
Anselmsson (2016)	Seven	Access, offer, physical environment, service, food services, promotion, entertainment
Kunc *et al.* (2016)	Six	Location/accessibility, parking, potential clients, size of area for rent, number and type of businesses, entertainment and leisure
Makgopa (2016)	Five	Parking comfort, access, hours, bathroom convenience and hygiene
Kabadayi and Paksoy (2016)	Five	Visit experience, objective-oriented (variety), socialization, time savings and search for offers (offers)
Wei Khong and Sim Ong (2014)	Three	Brand confidence, brand affection and mall's perception
Gilboa and Vilnai–Yavetz (2012)	Two	Convenience and entertainment
González–Hernández and Orozco–Gómez (2012)	Six	Essence of the mall, popularity and promotional programs, personal service, internal environment, recreational options and external physical environment
Singh and Sahay (2012)	Five	Physical environment, physical infrastructure, marketing approach, convenience and safety
Rajagopal (2011)	Six	Logistics and services, market attractiveness, shopping preferences, relationship with the client, buyers' perceptions, excitement and enjoyment
Arslan *et al.* (2010)	Five	Offer, comfort conditions, socialization in a safe environment, accessibility and leisure
Teller and Elms (2010)	Ten	Offer value of the products, type of product, sales personnel, accessibility, parking, combination of stores, combination of small businesses that are not stores, atmosphere, orientation and infrastructure
Özsoy (2010)	Five	Attractiveness, entertainment and leisure, retail environment, importance of the location, socialization
Rajagopal (2009)	Five	Related logistics (convenience), physical environment, excitement and joy (entertainment), offer variety and sales promotion
El-Adly (2007)	Six	Comfort, entertainment, diversity, mall's essence, convenience and luxury

(*continued*)

Table I. Attractiveness factors of malls

Study	No. of factors taken into account	Attractiveness factors
De Juan (2004)	Nine	Consumer's outfit, product variety, salespeople's professionalism, tranquility during shopping, cleanliness, ease of transition between stores, prices, parking and hours
Martin and Turley (2004)	Eight	Physical environment factors, design factors, variety, desire to belong, emotion, involvement and consumption motivation (social and objective)
Gorter *et al.* (2003)	Five	Accessibility, parking spaces, physical environment, number of people, product size
Geisel *et al.* (1993)	Three	Mall's size, time of journey and mall's attractiveness

Table I.

Source: Compiled by the author

The main works of the eco-natural environment include: Wilson (1984) who describes the deep feelings of connection with nature; Kaplan and Kaplan (1989) who suggest the positive effects over peoples' psychological well-being; Shoemaker *et al.* (1992) who suggest effects in attitudes and productivity in the workplace concerning the use of plants; and Kellert and Wilson (1993) who identify that humans have innate preferences toward physical environments with nature scenarios.

In the field of marketing, research has proven nature's effects over consumers' attractiveness capacity. For example, Ayala (1995) shows its usage in the tourism sphere, particularly the effects of design of eco-natural environments in hotels over client preference; Weinmaster (2009) suggests the effects of green walls (vegetation) to bring back nature into the city's daily life by making buildings more attractive; Lee *et al.* (2010) exemplify how a hotel's eco-natural image may affect behavior intentions of returning or recommending it; Kim and Han (2010) prove the effects of eco-natural environment resources in planned behavior (attraction) to pay conventional prices in hotels; Brengman *et al.* (2012) verify that the incorporation of vegetation areas inside stores has an effect over shopping emotions and behaviors.

Recently, Tifferet and Vilnai–Yavetz (2017) have suggested the positive effects of environments that use nature stimuli (plants) over the perceived quality of service and client satisfaction; moreover, Purani and Kumar (2018) discuss the relationship between nature's landscapes in service environments and its effects on service preference.

Consequently, it seems logical to think that the eco-natural environment based on nature's scenarios and stimuli is able to attract clients alongside other aspects that are based in the offer, accessibility, physical design and entertainment provided by the mall. Therefore, the objective of this work was contrasting the eco-natural environment as an alternative and complementary attractiveness factor in malls with the contrast of empirical evidence. To do so, the following are the research's methodology, results and discussion.

3. Methodology

This research used a structured questionnaire with an exploratory and confirmatory factor analysis of data, which was lastly validated by a measurement model. Accordingly, data collection was conducted in a set of 29 malls in Bogota with a total of 470 effective questionnaires that were classified based on the size of the commercial area, as per the

criteria of the ICSC (International Council of Shopping Centers) (ICSC, 2018): 81 questionnaires for small-sized malls (ranging between 5,000 and 19,999 m^2), 97 questionnaires for medium-sized malls (ranging between 20,000 and 39,999 m^2), 292 questionnaires for large-sized malls (ranging over 40,000 m^2). The malls had at least ten effective questionnaires, as follows: Centro Chia mall (42 surveys), Salitre Plaza mall (32), Andino mall (23) and Portal 80 mall (21), among others. The malls with the least number of questionnaires were 12 different malls, each with ten questionnaires.

3.1 Measurement

To draft the questionnaire, a literature review of the traditional dimensions (explained in Table I) took place; this analysis identified six dimensions using a rationale of inductive and semantic categorization (Rosch, 1978) including a seventh dimension of interest known as eco-natural environment. For each one, item generation derived from the literature review, adapting the statements to maintain the sense of each component, as described as follows:

- Accessibility: represents the ease of access to the mall, convenience of displacement inside the mall, easy access to parking spaces and convenience of visiting and shopping hours (Križan *et al.*, 2018; Upadhyaya, 2017; Ortegón Cortázar and Royo Vela, 2017; Teller *et al.*, 2016; Anselmsson, 2016; Kunc *et al.*, 2016; Makgopa, 2016; Arslan *et al.*, 2010; Teller and Elms, 2010; Özsoy, 2010; Ooi and Sim, 2007; De Juan, 2004; Martin and Turley, 2004; Gorter *et al.*, 2003). This factor is made up by seven items in a five-point Likert scale (1 = "not at all", 5 = "very") assessing the ease of access to the mall, ease of displacement inside the mall, convenience of parking spaces, easy orientation when walking, range of hours, convenience of hours and time savings when shopping.
- Offer: represents the variety in product and stores offer in the mall, the relationship between quality and product and service price (including the presence of promotions and offers) (Upadhyaya, 2017; Ortegón Cortázar and Royo Vela, 2017; Teller *et al.*, 2016; Anselmsson, 2016; Kabadayi and Paksoy, 2016; Gilboa and Vilnai-Yavetz, 2012; González-Hernández and Orozco-Gómez, 2012; Singh and Sahay, 2012; Rajagopal, 2011; Teller and Elms, 2010; Rajagopal, 2009; Ooi and Sim, 2007; De Juan, 2004; Martin and Turley, 2004; Gorter *et al.*, 2003). This factor is made up by four items in a five-point Likert scale (1 = "not at all", 5 = "very") assessing the quality of displayed sales promotions, good quality/price relationship, store variety and attractive product price.
- Clients: represents the number of people inside the mall, circulation of visitors, including ease to socialize (Hu and Jasper, 2018; Kabadayi and Paksoy, 2016; Rajagopal, 2011; Özsoy, 2010; and Gorter *et al.*, 2003). This factor is made up by four items in a five-point Likert scale (1 = "not at all", 5 = "very") assessing the high circulation of visitors, many people in the mall and ease to socialize with new people.
- Physical design: represents the pleasant design and appearance from an overall perception. A modern design and attractive image, including cleanliness and organization in the mall (Hu and Jasper, 2018; Križan *et al.*, 2018; Upadhyaya, 2017; Ortegón Cortázar and Royo Vela, 2017; Teller *et al.*, 2016; Anselmsson, 2016; Kunc *et al.*, 2016; Wei Khong and Sim Ong, 2014; González-Hernández and Orozco-Gómez, 2012; Singh and Sahay, 2012; Rajagopal, 2011; Arslan *et al.*, 2010; Teller and Elms, 2010; Özsoy, 2010; Martin and Turley, 2004; Gorter *et al.*, 2003; Geisel *et al.*, 1993). This factor is made up by four items in a five-point Likert scale

(1 = "not at all", 5 = "very") assessing the perception of a modern design, pleasant design and appearance of the mall, attractive image of the mall and cleanliness and organization in the mall.

- Luxury: represents the feeling of exclusivity or prestige, the perception of luxury products (Hu and Jasper, 2018; Rajagopal, 2009). This factor is made up by three items in a five-point Likert scale (1 = "not at all", 5 = "very") assessing the feeling of prestige through the offer of excusive garments and/or clothes and the offer of luxury products and brands.
- Entertainment: represents the benefits of leisure and fun based on entertainment spaces, availability of movie theaters, presence of restaurants and cafeterias (Upadhyaya, 2017; Ortegón Cortázar and Royo Vela, 2017; Anselmsson, 2016; Kunc *et al.*, 2016; Kabadayi and Paksoy, 2016; Gilboa and Vilnai-Yavetz, 2012; González-Hernández and Orozco-Gómez, 2012; Rajagopal, 2011; Arslan *et al.*, 2010; Özsoy, 2010; Rajagopal, 2009; Martin and Turley, 2004). This factor is made up by three items in a five-point Likert scale (1 = "not at all", 5 = "very") assessing the presence of entertainment spaces, availability of movie theaters, restaurants and cafeterias.
- Eco-natural environment: represents the perception of spaces and scenarios composed by stimuli from nature (vegetation) from an ecological perspective (Turner, 2005; Naveh and Lieberman, 2013; Ortegón Cortázar and Royo Vela, 2017). This factor is made up by four items based on the indicators used by Ortegón Cortázar and Royo Vela (2017), as well as in a five-point Likert scale (1 = "not at all", 5 = "very") assessing the presence of environments with vegetation, natural spaces or scenarios, eco-environmental design of the mall and use of architecture with natural resources.

Finally, the measurement scale was made up by 28 indicators that were distributed in even attractiveness factors. A pilot stage was conducted with 40 questionnaires, resulting in a Cronbach's α of 0.901 through an interpersonal survey applied in each mall with the largest number of visitors and popularity. Subsequently, the field work was developed applying 470 effective questionnaires, which resulted in a reliability of 0.925 through Cronbach's α, leading to the assumption of the instrument's validity (Nunnally and Bernstein, 1978).

3.2 Data collection

The procedure to select the respondents was intentional (purposive sampling, Sekaran and Bougie, 2016) because of the need to interview visitors in their immediately after arriving to the mall, interpersonally (Fowler, 2013) in different moments and days of the week between the months of September and October of 2016.

The sample was made up of men (57.2 per cent), women (42.8 per cent) from 18 to 24 years of age (41.1 per cent), from 25 to 32 (19.6 per cent), from 33 to 40 (10.4 per cent), from 41 to 50 (16.6 per cent) and over 50 (12.3 per cent). The levels of education were elementary (21 per cent), high school (16.4 per cent), technical (15.3 per cent), university (55.1 per cent) and postgraduate (11.1 per cent).

3.3 Data analysis

Data analysis was conducted using SPSS V22 and AMOS 24.0 to the convenience and possibility of the researchers; this is one of the most widespread statistic packages in research (Pedrosa *et al.*, 2015 p. 22).

As a data analysis technique to contrast the attractiveness variable in malls (the eco-natural environment) against other traditional factors, the literature offers factor analysis as a validation technique and as a pertinent method to test the latent structure of data behavior (De la Fuente, 2011) through the analysis of interrelation patterns between the variables, meaning, the reduction, classification and description of variables (Frías-Navarro and Soler, 2013; Ferrando and Lorenzo-Seva, 2014). Along these lines, Ferrando and Anguiano-Carrasco (2010) state that factor analysis requires distinguishing and conducting two types of factor analysis: an exploratory factor analysis (EFA) followed by a confirmatory factor analysis (CFA).

For Ferrando and Anguiano-Carrasco (2010), EFA is oriented toward analyzing a data set without a prior hypothesis regarding its structure, allowing the analysis' results to provide the information on the number of factors underlying the data. On the other hand, CFA is a more rigorous method that allows analyzing the relationships between a set of observed indicators or variables and one or more latent variables or factors, oriented toward the validation of a tailored model (Arias Martínez, 2008), in this case, the validation of an eco-natural environment. Thus, CFA also assumes the researcher must specify all of the model's relevant aspects beforehand, aspects that have to be robustly rooted in prior theory (p. 75), as defended.

4. Results

A CFA was undertaken used the technique of principal components (Kaiser, 1974), in compliance with the statistic values recommended by the literature (Ferrando and Anguiano-Carrasco, 2010): Bartlett's test of sphericity ($\chi^2 = 8{,}283{,}180$; gl = 378, $p < 0.0001$) and the measurement of Kaiser–Meyer–Olkin's sampling adequacy (0.909), resulting in the identification of seven factors with own values exceeding 1, accounting for 72.35 per cent of the variation, which surpasses the bottom limit of 45 per cent (Netemeyer, Bearden and Sharma, 2003).

A solution was interpreted according to the varimax rotation, which led to finding that all of the proposed indicators are loaded in a particular dimension with values over 0.60, except for the "cleanliness and organization in the mall" indicator, loaded with 0.568, which is shy; it was not used in the posterior CFA.

An EFA was conducted, and following the recommendations of Ferrando and Anguiano-Carrasco (2010), the CFA followed aimed at correcting or confirming the EFA's deficiencies (Escobedo Portillo *et al.*, 2016). This process required the use of the maximum verisimilitude method, as recommended by the literature (Ferrando and Anguiano-Carrasco, 2010), illustrated in Table II.

Table II shows the values of each indicator on each factor. Consequently, and according to the relationships (manifested in factor loads) among observable and latent variables, the factors were named in correspondence with the study's conceptual framework. Factor 1 was named "eco-natural environment", and it was constituted by four indicators. Factor 2 was named "Accessibility", and it was constituted by four indicators. Factor 3 was named "Offer", and it was constituted by four indicators. Factor 4 was named "Clients", and it was constituted by three indicators. Factor 5 was named "Physical Design", and it was constituted by three indicators. Factor 6 was named "Luxury", and it was constituted by three indicators. And finally, Factor 7 was named "Entertainment", and it was constituted by three indicators.

The CFA also revealed that the "convenient hours, extension of hours and time savings to shop" indicators did not have loads above 0.5 in any factor; therefore, they were excluded from the analysis to improve the model's understanding. This matter is possibly due to the

Indicator	Factor 1	2	3	4	5	6	7
Natural spaces or scenarios	0.925						
Presence of environments with vegetation	0.877						
Mall's eco-environmental design	0.860						
Use of architecture with natural resources	0.742						
Easy displacement inside the mall		0.758					
Easy access to the mall		0.735					
Convenience of parking spaces		0.663					
Easy orientation when walking		0.610					
Convenient hours							
Range of hours							
Store variety			0.821				
Attractive product prices			0.736				
Good quality/price relationship of products and services			0.721				
Quality of displayed promotions			0.575				
Time savings when shopping							
Too many people in the mall				0.888			
Ease to socialize with new people				0.747			
High circulation of visitors				0.701			
Pleasant design and appearance of the mall					0.812		
Attractive image of the mall					0.725		
Perception of a modern design					0.632		
Luxury products and brands offer						0.756	
Exclusive garment and/or clothes offer						0.684	
Feeling of prestige						0.655	
Availability of movie theaters							0.704
Availability of restaurants and cafeterias							0.593
Presence of entertainment spaces							0.564
Variance explained per factor	12.2%	11.4%	10.7%	8.1%	7.6%	7.4%	5.3%

Notes: Extraction method: maximum verisimilitude. Convergence of rotation in six iterations; Total variance explained: 63.12 per cent; KMO = 0.909; Bartlett's test of sphericity: 8,283.180; df; $p < 0.0001$
Source: Compiled by the author

Table II.
CFA

combination of different participant malls, each with its own schedule policies and particular convenience.

A path diagram model was built to represent the findings of the CFA; it shows the standardized indexes of each factor's indicators and the correlations between factors, evincing its independence (see Figure 1).

According to Arias Martínez (2008), once the data and model are ready for the analysis, it is convenient to undertake a series of tests to avoid potential problems and fulfill the traditional requisites related to measurement level, minimum number of values per indicator, distribution, type of relationships, model identification, minimum amount of observations and number of indicators per each variable or item, among others (Jöreskog, 1993). In that sense, Arias Martínez (2008) declares that CFA is a demanding analysis technique, which is why Table III shows a verification of the analysis requisites based on the *ideal fit* characteristics in a measurement model; it illustrates the values used in the assessment of the fit quality criteria, assessing three perspectives: absolute fit, incremental fit and parsimony fit (Escobedo Portillo *et al.*, 2016).

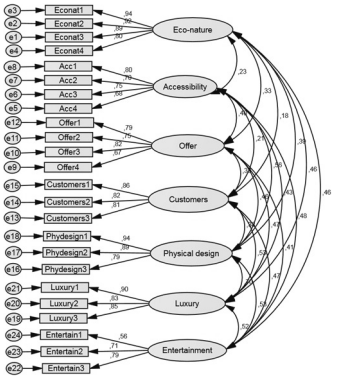

Figure 1.
CFA model

Goodness of fit measurement	Acceptable fit levels	Acceptability obtained	Values
Absolute fit measurements			
Statistic verisimilitude ratio		$\chi^2 = 582.359$	Acceptable
χ^2		p-value = 0.000	Acceptable
Goodness of fit index (GFI)	0 bad fit; 1.0 perfect fit	0.908	Acceptable
Root-mean square error of approximation (RMSEA)	< = 0.05	0.05	Acceptable
Mean squared error index (RMR)	Close to 0	0.07	Acceptable
Expected cross validation index (ECVI)	Closer to 1 means its correlation increases	1.536	Acceptable
Incremental fit measurements			
Normed fit index (NFI)	> 0.90	0.921	Acceptable
Non-normed fit index or Tucker–Lewis (NNFI/TLI)	>= 0.90	0.941	Acceptable
GFI	>= 0.91	0.908	Acceptable
Parsimony fit measurements			
Parsimony GFI (PGFI)	A > value > parsimony	0.699	Acceptable
PNFI	A > value > fit	0.771	High

Source: Compiled by the author based on Escobedo Portillo *et al.* (2016)

Table III.
Goodness of fit measurements of the measurement model

Table III shows the model's goodness of fit estimators, where fit measurements comply with the values recommended by the literature (Arias Martínez, 2008; as: χ^2/df = 2.52; df = 231; GFI = 0.908; AGFI = 0.880; CFI = 0.951; RMSEA = 0.057). According to Escobedo Portillo *et al.* (2016) from the aforementioned statistic criteria, the model validity that relates the constructs with the theory is the parsimony non-normed fit index (PNFI); the closer it is to 1 means a higher relationship; in this case, that number was of 0.77, which empirically revealed the existence of the seven attractiveness factors in malls; in this case, these include the statistic demonstration of the eco-natural environment.

5. Discussion

5.1 Theoretical contributions

Commercial attractiveness is a consequence of how marketing variables are managed by malls and of how consumers respond to those variables and actions (Porral and Dopico, 2013). Moreover, it is the response of consumers to diverse tangible and intangible aspects (e.g. the mall's brand, Wei Khong and Sim Ong, 2014) developed by different malls, which ultimately materializes in the intention to visit, a crucial aspect in any mall's management assessment (Michon *et al.*, 2005).

The literature has showed multiple attractiveness factors in malls; its assessment is important to steer the commercial strategy (Teller and Reutterer, 2008). However, the said factors respond to a diversity of dimensions that lack consensus on quantity and typology (Gomes and Paula, 2017), which are usually formulated and analyzed according to each study's objectives.

Consequently, the findings of the factor analysis contribute evidence of how this work has fulfilled its objective by empirically and comparatively contrasting the attractiveness factor named eco-natural environment with other traditional attractiveness factors; the study of the physical environment that uses natural scenarios, landscapes and stimuli is a recent knowledge are in the marketing literature (Rosenbaum *et al.*, 2018), which in turn, is progress in the state of knowledge.

Contrasting and validation took place following the steps and criteria recommended by the literature. Validation used the factor analysis technique as a versatile and popular method in research because of its solid analysis traits in the field of advanced multivariate statistical techniques (Méndez Martínez and Rondón Sepúlveda, 2012; Arias Martínez, 2008), providing information of the latent groups of variables (which in this case are attractiveness factors represented in a measurement model). This technique has been also used in prior research as a multidimensional analysis of the commercial attractiveness in malls (Upadhyaya, 2017; Ortegón Cortázar and Royo Vela, 2017; Teller *et al.*, 2016; Gilboa and Vilnai-Yavetz, 2012; Rajagopal, 2011; Teller and Elms, 2010; El-Adly, 2007; De Juan, 2004; Martin and Turley, 2004; Gorter *et al.*, 2003).

For its part, the existence of the eco-natural environment as an attractiveness factor signifies contributions to the marketing literature in the field of retail, particularly in the field of relationships between consumers and environment in service settings, corroborating recent research by Rosenbaum *et al.* (2018) and Tifferet and Vilnai–Yavetz (2017) which discuss that customers are attracted by nature under the hypothesis of biophilic architecture or design (Söderlund and Newman, 2015). In that sense, its conceptual framework derives from environmental psychology's connection between human behavior and physical means, especially through the need for permanent contact with physical environments (ecology) containing certain elements of nature that are able to offer multiple psychological, social, entertainment and productivity benefits (Beatley, 2011; Kaplan and Kaplan, 1989).

Consequently, the imitation and application of patterns, shapes, symbols and spaces that represent nature (Söderlund and Newman, 2015, p. 3) may be transferred to malls' competitive management and marketing vision to favor the visit experience and increase the client's preferences and loyalties. This idea is based on prior studies that have verified that physical environmental variables affect consumer behavior (Jha and Singh, 2014; Mishra *et al.*, 2014); thus, the eco-natural environment becomes a recent topic of interest in mall management (Rosenbaum *et al.*, 2018; Rosenbaum *et al.*, 2016).

We encourage future research to examine the specific effects of the eco-natural environment in malls' attractiveness measurements, such as satisfaction, intention to visit and shopping. These matters, according to this study's theory and reasoning, will enhance the state and understanding of said environmental resource.

5.2 Managerial contributions

The findings make it possible to discuss the role of the eco-natural environment as an alternative attractiveness factor from a relationship-based perspective in connection with malls' visitors. Therefore, this research's findings allow proposing the eco-natural marketing concept as an innovative way to attract visitors to the mall, facing its surging development in Latin America (Forbes, 2017; Gomes *et al.*, 2017), expanding competition (Anselmsson, 2016) and high component of environmental design and development (Park, 2016).

Malls focus on the pursuit and administration of variables that increase its commercial attractiveness, meaning, on studying and discovering strategies to boost consumer's intention to visit and loyalty for this commercial formats (Michon *et al.*, 2005). This business repercussion has shaped our research by supposing and proving the value of the eco-natural environment as an attractiveness factor for the industry.

For the field of marketing's competitive management and differentiation, these results suggest mall developers that having spaces with vegetation, plants and bushes, architecture with natural resources, green areas and water sources within the mall may benefit attractiveness by driving visitors' interest, in connection with the environment inspired in nature's stimulus or scenarios.

The aforementioned entails that eco-natural environment marketing management could benefit the visit experience, as well as complement traditional attractiveness factors based on a variety of offer, accessibility, entertainment and overall physical design, thus making people decide to prefer, attend, return and recommend certain mall, all of which are traditional marketing objectives in commercial spheres.

5.3 Limitations and recommendations for future studies

Any generalization of results must be done with caution due to this research's own limitations. As described before, research on this topic in the area of malls is scarce; for instance, the study by Ortegón Cortázar and Royo Vela (2017), who analyzed an inferior number of attractiveness factors, highlighting the need to go deeper in this topic, and the works by Rosenbaum *et al.* (2016), which have a conceptual framework focused on the capacity to restore psychological care and well-being without analyzing attractiveness of malls with environments inspired by nature. Thus, the findings and implications demand confirmation or refutation in future research, which would in turn enrich the analysis with the incorporation of control variables that center on the size of the mall, motivations to visit or demographic aspects. Likely, future studies should compare malls of diverse cities or countries to heighten the degree of validity. In that sense, even though the sample and sample units were large enough for a Latin American citizen, the studied population does not represent all of the clients or users, which is why this phenomenon's understanding needs to be improved.

Finally, we consider this research contributes relevant information regarding the importance of pursuing an eco-natural marketing alignment, evinced in the display of natural stimuli in malls, which is why we expect this study may serve the academic and business community in planning and developing differentiating competitive strategies to benefit clients' experience and loyalty.

Note

1. In Scopus, the search equation was ≪ *(TITLE-ABS-KEY (attract*) AND TITLE-ABS-KEY (shopping AND centers) AND TITLE-ABS-KEY (mall)) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "re")) AND (LIMIT-TO (SUBJAREA , "SOCI") OR*

LIMIT-TO (SUBJAREA , "BUSI"))≫, while in Web of Science, it was ≪ *TS= (attract* AND shopping centers AND mall)* ≫.

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Inmegacity characterization: trends and realities

Caracterización de Inmegacity: Tendencias y realidades

Caracterização da inmegacity: tendências e realidades

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Abstract

Purpose – In recent decades, there has been an important growth of Latin American cities; therefore, the demand for resources and services has increased for cities to function and meet the needs of their inhabitants. Latin American cities are growing rapidly and this process affects the quality of life of citizens. The purpose of this paper is to characterize the logistics of an area of the city of Lima, Peru; through the analysis of the practices of the last mile distribution, and in this way, contribute with information that can be used for decision-making and for the proposal of public policies that improve the efficiency of logistics operations in the area.

Design/methodology/approach – Regarding the methodology applied, first, we identified the district to be analyzed using marketing information from the districts of Lima. Next, the authors collected information using forms following the methodology of the last Mile/Km^2-MIT. Finally, the project planning finished in 15 days.

Findings – It was found that most of the stores in the area are nanostores that sell diverse products, the community does not have parking lots or loading and unloading areas and the majority of deliveries are made to wholesalers and supermarkets. In addition, a relationship between business density and the traffic congestion was identified and taxis are the most widely used means of distribution of goods. Most of the streets do not have signage, they are mainly one-way and do not have exclusive routes for public transportation.

Research limitations/implications – Due to not having georeference information about the specific stores location and statistics data about its suppliers, the research results may show a primarily scope. Based on the results, the authors are encouraged to do more research using data analytics as in the next steps.

Practical implications – The paper reinforces the importance and challenge of working collaboration between suppliers, owners and local government.

Social implications – The paper provides opportunities to create new policies, as well as an incentive plan for personal workers, suppliers and ecosolution proposals.

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Originality/value – Currently, as per the authors' knowledge, there is no varied literature that characterizes and analyzes the logistic profile of the districts of Lima city and serves as a basis for the implementation of solutions and public policies.

Keywords Planning, Urban planning, Distribution, Inmegacities, Megacities, Urbanism, Resources

Paper type Research paper

Resumen

Objetivo – El objetivo de esta investigación es caracterizar la logística de un área de la ciudad de Lima, Perú; a través del análisis de las prácticas de la distribución de la última milla y, de esta manera, contribuir con información que se puede utilizar para la toma de decisiones y para la propuesta de políticas públicas que mejoren la eficiencia de las operaciones logísticas en el área.

Diseño/metodología/enfoque – Con respecto a la metodología aplicada, primero, se identificó el distrito a analizar utilizando información de mercadeo de los distritos de Lima; a continuación, se recopiló información utilizando formularios siguiendo la metodología de la última milla/Km^2-MIT; finalmente, la planificación del proyecto terminó en 15 días.

Resultados – Se encontró que la mayoría de los establecimientos son pequeñas tiendas que venden productos diversos, no tienen estacionamientos o áreas de carga y descarga y la mayoría de las entregas se realizan a mayoristas y supermercados. Además, existe una relación entre la densidad comercial y la congestión de tráfico, siendo los taxis los medios de distribución más utilizados. La mayoría de las calles no tienen señalización, son de un solo sentido y no tienen carriles exclusivos para el transporte público. Estos hallazgos son relevantes para la implementación de políticas públicas para la mejora de la infraestructura y eficiencia de las operaciones logísticas.

Originalidad/valor – Actualmente no existe una literatura variada que caracterice y analice el perfil logístico de los distritos de la ciudad de Lima y sirva de base para la implementación de soluciones y políticas públicas.

Palabras clave Planificación, Planeamiento urbano, Distribución, Submegaciudades, Megaciudades, Urbanismo, Recursos

Tipo de artículo – Artículo de investigación

Resumo

Objetivo – O objetivo desta investigação é caracterizar a logística de uma área da cidade de Lima, Peru; através da análise das práticas de distribuição da última milha e, desta forma, contribuir com informações que possam ser utilizadas na tomada de decisão e pela proposição de políticas públicas que melhorem a eficiência das operações logísticas na área.

Desenho/metodologia/abordagem – Com relação à metodologia aplicada, primeiro, o distrito a ser analisado foi identificado usando informações de marketing dos distritos de Lima; em seguida, as informações foram coletadas por meio de formulários seguindo a metodologia da última milha/Km^2-MIT; finalmente, o planejamento do projeto terminou em 15 dias.

Resultados – Constatou-se que a maioria das lojas comercializa diversos produtos, não possui estacionamentos ou áreas de carga e descarga e sendo a maioria das entregas realizadas para atacadistas e supermercados. Além disso, existe uma relação entre a densidade comercial e o congestionamento de tráfego, sendo os táxis os meios de distribuição mais utilizados. A maioria das ruas não possui sinalização, são de sentido único e não possuem pistas exclusivas para o transporte público. Essas constatações são relevantes para a implementação de políticas públicas para melhorar a infraestrutura e a eficiência das operações logísticas.

Originalidade/valor – Atualmente não existe uma literatura variada que caracterize e analise o perfil logístico dos distritos da cidade de Lima e sirva de base para a implementação de soluções e políticas públicas.

Palavras-chave Planejamento, Planejamento urbano, Distribuição, Sub megacidades, Megacidades, Planejamento urbano, Recursos

Tipo de artigo – Artigo de pesquisa

Introduction

Worldwide, the urban population has grown steadily and rapidly in recent decades. In the 1950s, it meant 30 per cent of the world's population, and by 2007 it outnumbered the rural

population for the first time (United Nations, 2014). Currently, it is 54.5 per cent (United Nations, 2016); it is forecasted to be 60 per cent of the world population by 2030 (United Nations, 2016) and to be 66 per cent by 2050 (United Nations, 2014).

The trends and problems of this disequilibrium, between urban and rural population, were discussed at the 2016 summit, within the framework of Habitat III – Quito, with the aim of launching the 2030 Agenda for Sustainable Development, through joint policies for: equitable and sustainable urban development, organized internal migration, a balance of urban distribution and an organized and sustainable urban growth (United Nations, 2014).

Latin America has not been away from this reality; currently, 82 per cent of the population lives in urban areas. The cities with the highest population level are Sao Paulo, Mexico, Buenos Aires, Rio de Janeiro, Lima and Bogota (United Nations, 2016). The imbalance in Latin America has implications regarding the management of resources: air, water and sewage, public services, transportation and others, with new challenges in the value chain and product management (Mejía Argueta *et al.*, 2015).

The economy of Latin America and the Caribbean has improved during 2018, excluding Venezuela, the average GDP of the region increased to 1.9 per cent in 2017 and is expected to accelerate to 2.6 per cent in 2018 and 2.8 per cent in 2019 (World Bank, 2018a). In this sense, the region's main challenges include boosting investment, promoting an increase in the rate of savings and exports, and encouraging the development of the private sector. The existing gaps in logistics and infrastructure are important obstacles for intraregional trade (World Bank, 2018b).

On the other hand, the region needs to reduce inequality; for this, it is important to invest in its inhabitants. It continues to have a low performance in education, so investing in this aspect will be fundamental to enable to contribute to future economic growth and, in turn, benefit from it (World Bank, 2018b).

In the same way, the region is very exposed and vulnerable to natural disasters due to the high population density in those areas where these disasters affect and the need to improve risk management practices. Faced with this, humanitarian logistics present different approaches in each phases: mitigation, preparedness, response and rehabilitation (World Bank, 2018b).

The evolution of Latin American cities is characterized by five stages, namely:

(1) local cultures (pre-Inca and Inca);

(2) colonization with compact cities;

(3) urbanization with European influence;

(4) internal migration from the countryside to the city; and

(5) globalization with disorganized expansion (Piña, 2014).

The disorganization of the last two phases, migration and globalization, has created a concentration in risk areas. 56 per cent of cities or 1.4 billion people are exposed to six types of natural disasters: cyclones, floods, droughts, earthquakes, landslides and volcanic eruptions (United Nations, 2014).

The strategic proposals, to improve logistics competitiveness (Atún *et al.*, 2010; Ministerio de Transportes y Comunicaciones, 2015), are focused on the transport infrastructure improvements (land, sea, river and air) and logistics facilities (centers, parks and logistics clusters) for an optimal physical distribution of goods in the city.

The goal of the study is to analyze the distribution practices in emerging cities due to the high population growth within urban areas, such as Lima, which is ranked N.o 30 among the most populated cities in the world (United Nations, 2014) and is facing a strong growth

process caused by the city's natural growth and a high migration rate. The expectation of population for 2030 is 12.02 million inhabitants (United Nations, 2014). The researches (development plans and models) are focused mainly on cities with an organized institutional framework and a culture of urban planning. These studies are very scarce in the case of cities with a high rate of urbanization and local administration, insufficient control over the growth of the city, strong internal and international migration processes (Piña, 2014) and a high level of informality (more than 60 per cent).

The development process of Latin American cities has been characterized by disorganized and scattered growth in vulnerable ecological zones, environmental deterioration, reduction of the area for food production and social and territorial inequalities increase (Piña, 2014). For this reason, in Latin American cities, it is a priority to know the current state and create policies for the city's sustainable development (Merchan, 2015; Cuevas *et al.*, 2016).

The present work analyzes an area of the city of Lima, which shows the characteristics set out above. In the research, the environment in which the logistics operations are contextualized; we review the literature in urban logistics, the methodology is focus on the characterization of the inmegacity, the findings are discussed and compared with similar inmegacities and public policies are proposed to improve the logistics profile of the area, and finally, the conclusions are presented. The objectives of this research are: know the area characteristics, support the future public policies, improve the transportation systems, create an adequate good flows and generate an optimal distribution of resources.

Literature review

The decision makers for urban planning are paying more attention to the logistical challenges in cities in recent years (Holguín-Veras *et al.*, 2015). There are several case studies carried out to characterize cities in which different data collection methodologies are applied (Lagorio *et al.*, 2016); for different purposes, for instance, to review the regional experience in the management of freight transport through the analysis of the distribution of goods, the limitations for regional logistics, the strategies and the possible consequences for policies and planning (Hesse, 2004) or to prepare studies that serve as a reference to develop comprehensive cargo mobility policies (Merchan, 2015).

Likewise, several types of researches address the use of analytical techniques for the analysis of urban logistics solutions. For example, Holguín-Veras *et al.* (2012) developed a report that consolidates the available models of cargo travel generation in an electronic database to help professionals be interested in using these models. It also identifies the most appropriate approaches to develop and apply freight transport generation models and estimates models of generation of merchandise transportation at the establishment level. In addition, a series of reports have been prepared synthesizing good practices and recommendations for public policy (Dablanc, 2009; Dablanc *et al.*, 2011; Holguín-Veras *et al.*, 2015; Dablanc *et al.*, 2017).

There are several researches that study and propose improvements for the distribution of the last mile. Boyer *et al.* (2009) examine the effect of customer density and length and its relations with the delivery route efficiency in the delivery window. Greasley and Assi (2012) analyze the last mile distribution link between a specific industry and its customers through a simulation of changes in the delivery policies. Dell'Amico and Hadjidimitriou (2012) propose a logistic model to increase the efficiency of urban distribution by introducing innovative contracts for the improvement of the logistics chain as multimodal distributions. Minten *et al.* (2013) study the last mile distribution for an industry in particular.

The operational suggestions are added to the study of distribution in the last mile and/or last kilometer due to the quick growth of urban areas. The studies analyze the densest areas, such as the T zone of Bogotá with hotels, restaurants, cafes, bars, shopping centers, with the Km^2 methodology of MIT (Merchan, 2015) and its sustainability indicators (operational, energy, environmental and traffic) (Chicaiza and Hidalgo, 2016; Cuevas *et al.*, 2016). Some authors focus on the impact of Nano stores: small retailers in emerging economies usually managed by a person with direct contact with the end user (Blanco and Fransoo, 2013).

Methodology

The phases for the study of the district of Lince in Lima have their background in the comparative study of the cities of Buenos Aires, Santiago and Mexico with their geographical variables, levels of urbanization (area and density) and the city's socioeconomic aspects (Piña, 2014); the methodology used in Belo Horizonte was applied to define the object and the work area, to know the characteristics of the research area, to analyze the results and to diagnose the decision-making (De Oliveira and Dias Guerra, 2014). Finally, the Km^2 methodology developed by the MIT Megacity Logistic Lab was used. The Plate 1 shows households, small shops, convenience stores, nanostores, professional offices and other business in the district of Lince - Lima, that characterize the area.

Most of these cities are in emerging markets and are designated as "megacities", with more than 10 million inhabitants. (Blanco and Fransoo, 2013). We defined "Inmegacity" as a city inside a Megacity with less than 100,000 inhabitants and more than 20,000 inhabitants/Km^2. Based on this definition, the district chosen was Lince, which was created on May 18, 1936; by The Legislative Resolution N.o 8281. The district has an area of 3.02 Km^2, a population of 70 968 inhabitants, 16 997 homes and a density of 23 421.8 inhabitants/Km^2 (Instituto Nacional de Estadística e Informática – INEI, 2016).

Phase 1– area characteristics

The objective of this phase is to establish the consumption preference status (Castillo and Goicochea, 2015) through the collection of data from secondary sources, such as the National

Source: Developed by the author

Plate 1.
Urban environment of Lince – Lima

Institute of Statistics and Data Processing (INEI, by its acronym in Spanish of the Instituto Nacional de Estadística e Informática) and the Peruvian Association of Market Research (APEIM, by its acronym in Spanish of the Asociación Peruana de Empresas de Investigación de Mercados).

APEIM classifies the population in five types of socioeconomic level. As a part of the results section, the socioeconomic level of the high population density is C status, with 42 per cent (Asociación Peruana de Empresas de Investigación de Mercados - APEIM, 2016). The socioeconomic (population density, the density of commercial establishments, employability level and income level) and infrastructure (density, capacity and direction of the road network) data are required (Blanco and Fransoo, 2013; Merchan, 2015; Chicaiza and Hidalgo, 2016).

At this point, we were able to identify the types of prevailing establishments by each socioeconomic level, with this information we can develop the expenditure profile and visit frequency of the inhabitants.

Figure 1 shows the characteristics of the Peruvian shopper in relation to the place of purchase, the frequency of purchase according to the socioeconomic level that was introduced in the 2015 MIT Scale.

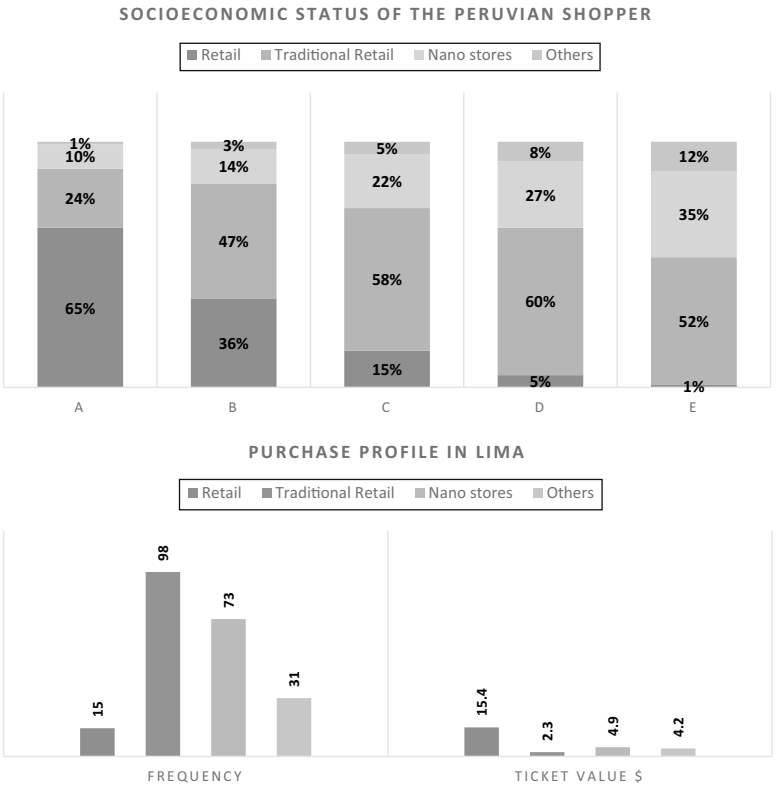


Figure 1.
Characteristics of Peruvian shopper

Source: Castillo and Goicochea (2015)

Based on the first results, some highlights are:

- 80 per cent of shoppers buy at least in three channels;
- 50 per cent of the expenditure comes from food markets; and
- $300 is the minimum wage in Peru.

Phase 2 – area identification

The identification phase starts with fieldwork. The methodology used in this phase is the Km^2 (Merchan, 2015; Chicaiza and Hidalgo, 2016; Blanco and Fransoo, 2013) observing the retailer activities (inventory, location and deliveries), the infrastructure (load, regulations, roads and circuits) and disruptions in traffic.

The number of inhabitants per district was analyzed. To have a better reach of all establishments, we focused on analyzing a district of C socioeconomic status. To identify the best demographic profile, we classified all Lima metropolitan districts by C socioeconomic status and the number of inhabitants per district with the aim of being able to identify, by C socioeconomic level, the district with the best demographic profile. Within the comparison made, the district of Lince was the best district to conduct the study.

Phase 3 – collection of information

To obtain the information of all the establishments, we applied the methodology of the last-mile Km^2 of the MIT (Megacity Logistic Lab, 2014), which comprises information on: inventory of establishments, number of streets and regulations, amount of traffic, disruptions in deliveries and quantity of merchandise dispatch.

To collect information, a 15-day planning was carried out under the following scheme:

- 2 *days*: 2 people to collect information on a number of establishments and number of streets and regulations for the entire selected square kilometer.
- 13 *days*: 2 people to collect information on the amount of traffic, disruptions in deliveries and number of dispatches within the densest block of the square kilometer.

The objective is to collect all information to analyze the type of products that get delivered per stores, to observe how dense the traffic in different hours is, the causes that originate disruptions and the types of vehicles that are used to deliver products and transportation. With all this information, it will be possible to have a first look at how the logistics practices are developed within the Lince district.

Phase 4 – solutions for urban loading in critical areas

With the results obtained in Phases 2 and 3, we propose in the discussion part, solutions that help improve the flow of goods delivery and the reduction of disruptions in Lince. Based on the models for the management of public policies such as the regulation of the loading/unloading bays (Yamada *et al.*, 1999; Cuevas *et al.*, 2016), the ordinances for the circulation of vehicles (Atún *et al.*, 2010; Ministerio de Transportes y Comunicaciones, 2015).

Results – district of Lince

Phase 1: Lince characteristics

Currently, the district faces problems related to the growth of the middle class, with a strong demand for basic services such as water, electricity, solid waste management, transportation routes, education, medical services and security.

Consumption preferences in the city of Lima show a greater concentration in the markets and Nano stores, with a frequency of 98 and 73 times a month and with an average value of S/3.40 soles or US$1.10 (Castillo and Goicochea, 2015). Lince and Lima share similar consumption characteristics because of the high density of nano stores.

Phase 2: area identification of Lince

The next step was choosing the denser square kilometer out of a total district area. For this, we carried out an analysis to determine the densest quadrants of the district according to traffic and establishment quantities as shown in Figure 2. Finally, with this information of the square kilometer, the densest block was identified; based on the high density of establishment, which was previously collected by each block to apply the information survey. In this case, the densest block chosen is number 13, which is between Arequipa Avenue and Tomas Guido street.

Phase 3: collect information of Lince

The fieldwork with the Km^2 methodology applied in Figure 2 (Blanco and Fransoo, 2013; Merchan, 2015; Chicaiza and Hidalgo, 2016) had the following results:

Inventory of establishments. Small and medium enterprises, characterized by five or fewer employees are 90 per cent of commercial establishments. The types are hardware stores, internet booths, stores related to home decoration (furniture, carpets, curtains, mattresses, among others); but unlike large establishments (10 per cent of establishments) such as supermarkets, food markets, gas stations and schools, they do not have parking areas or loading and unloading areas.

As an additional characteristic, 87 per cent of establishments are located on the first floor, while 13 per cent operates between floors 2-5.

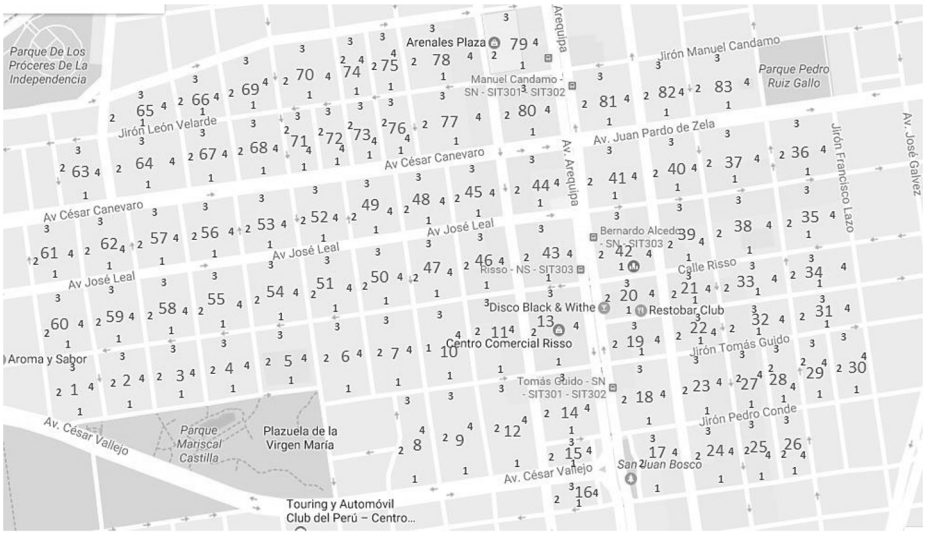


Figure 2.
Square kilometer of Lince

Source: Developed by the author/Google maps (2018)

Table I shows the inventory collected and the front size average by type of establishment, based on the length in front of the street, and if these have their own or public loading and unloading areas near the establishment.

The profile of Lince stores are small spaces, with no loading and unloading area for products with 83 average establishments per quadrant. In addition, due to the small size of the stores and lack of spaces for the loading and unloading of materials, they allow an opportunity to create spaces that help consolidate orders and improve the distribution of products.

Traffic count. During the assessment applied in Block 13, which started from 7.00 a.m. to 4.00 p.m. it was possible to identify a relationship between the density of businesses and high-density traffic in the fieldwork. It was found that 83 per cent of collected data are concentrated in pedestrians, taxis and private cars. Additionally, the presence of bicycles and motorcycles is seen as an alternative means of transportation as shown in Table II. On

	Store inventory		Size (m)			Loading area (%)	
Type of store	Quantities	Rate %	Maximum	Minimum	Average	Yes	No
Lodging and accommodation	41	3.61	45	2	13.33	56.10	43.90
Clothing stores	28	2.47	40	3	7.46	7.14	92.86
Supermarkets and wholesalers	12	1.06	100	3	33.75	58.33	41.67
Pharmacies	22	1.94	75	2	7.84	4.55	95.45
Food and beverage stores	223	19.65	50	2	7.58	7.62	92.38
Gas stations	4	0.35	25	15	21.25	50.00	50.00
Convenience stores	172	15.15	75	2	6.91	3.49	96.51
Other establishments	517	45.55	100	1	5.78	7.16	92.84
Schools	40	3.52	75	3	19.43	45.00	55.00
Public agencies – churches	76	6.70	100	2	16.00	36.84	63.16
Total	1,135	100.00				12.42	87.58

Source: Developed by the author

Table I. Inventory of establishments

	Hourly schedule								
Type of vehicle	7:00-8:00	8:00-9:00	9:00-10:00	10:00-11:00	12:00-01:00	01:00-02:00	02:00-03:00	03:00-04:00	Total
Taxi – autorickshaw	147	152	1,494	1,490	90	123	2,105	2,002	7,603
Car	97	109	1,460	1,261	56	99	1,797	1,843	6,722
Pickup truck	14	26	277	281	21	38	417	431	1,505
Trailer truck	0	2	15	15	2	0	32	37	103
Cargo truck	7	2	99	101	3	4	174	184	574
Van	12	7	118	114	6	6	151	169	583
Public transportation bus	42	42	193	175	18	37	279	272	1,058
Bicycle	14	11	77	49	12	4	85	55	307
Motorcycle	5	6	147	129	21	8	161	184	661
Pedestrian	131	156	1,616	1,731	98	143	2,117	2,253	8,245
Total	469	513	5,496	5,346	327	462	7,318	7,430	27,361

Source: Developed by the author

Table II. Traffic count

the other hand, it was observed that the hours with the highest intensity of vehicles ranges from 8:00 a.m. to 10:00 a.m. and from 2:00 p.m. to 3:00 p.m.

Furthermore, it was noticed that taxis are used, as an alternative means, of transportation of goods towards the warehouses and markets of supplies due to their size, the volume of products to be transported, the disposition of the roads and the lack of loading and unloading areas.

As shown in Table III, we collected in three-time intervals of 15 min each one, the number of vehicles and pedestrians that circulate in the block.

According to the results, more than 80 per cent of the observations are pedestrians, cars and taxis causing more traffic. A product delivery opportunity can be very early or at night.

Disruptions. The sources of disruptions of greater incidence are the unexpected and reckless stops of taxis, which make 38 per cent of disruptions, followed by pedestrian recklessness when crossing the streets or using informal stops, with a disruption in the vehicles circulation area.

A striking feature in the fieldwork was that 19 per cent of the stops were generated by small vehicle crashes as shown in Table IV.

The main cause of disruptions in the flow of vehicles is taxi stops to wait for or pick up passengers. Reckless maneuvers by public transport vehicles, taxis and buses, to the detriment of the adequate flow of private and public vehicles. To determine if the event

Vehicle type	Quantity + 15 min	Quantity + 30 min	Quantity + 45 min	Total record	Rate %
Trailer truck	30	38	35	103	0.38
Bicycle	93	104	110	307	1.12
Public transportation bus	361	348	349	1,058	3.87
Car	2,134	2,418	2,170	6,722	24.57
Motorbike	220	197	244	661	2.42
Pedestrian	2,694	2,753	2,798	8,245	30.13
Pickup truck	474	520	511	1,505	5.50
Cargo truck	162	224	188	574	2.10
Taxi - autorickshaw	2,461	2,585	2,557	7,603	27.79
Van	185	175	223	583	2.13

Table III.
Vehicle records

Source: Developed by the author

	Disruption		Did the stop take less than 5 seconds?	
Source of disruption	Quantity	Rate %	No	Yes
By accident	63	18.92	63	0
By buses	49	14.71	49	0
By cargo	15	4.50	15	0
By pedestrians	66	19.82	17	49
By taxis	128	38.44	121	7
By delivery	7	2.10	7	0
By waste collection	5	1.50	5	0
Total	333	100.00	277	56

Table IV.
Source of disruptions

Source: Developed by the author

can be considered as an interruption, the stop must be greater than 5 s. The 47 per cent of disruptions in the capacity of the roads are due to poorly parked vehicles and 24 per cent of disruptions in the flow because of driver's reckless maneuvers as shown in Table V.

Regulations and streets. One characteristic of Lince is the regular traffic with 18 kilometers/hour in the daytime and the absence of regulation signals. Only 16 per cent of the streets have signs as shown in Table VI. They are also mainly one-way and they do not have exclusive routes for public transportation nor do they have loading and unloading areas. One feature is that 90 per cent of the streets are one-way with two lanes. Finally, it was observed that motorized vehicles use sidewalks and roadways as flow paths and parking areas.

Based on Table VII, the characteristics found are one-way roads (97 per cent) with two lanes. Only 5 per cent of lanes are exclusively for bicycles and 65 per cent of the streets have a free parking area, without payment.

Due to the lack of signs, pedestrians and suppliers use any part of the street to move and download products contributing to traffic.

	Disruption	
Type of disruption	Quantity	Rate %
Bus stop	19	5.71
Reckless crossing	8	2.40
Emergency vehicle	2	0.60
Street vendor	49	14.71
Parking violation	158	47.45
Pedestrian improper crossing	15	4.50
Reckless maneuvers	82	24.62
Total	333	100.00

Source: Developed by the author

Table V.
Type of disruption

Signs	Quantity	Rate %
None	153	83.61
Bus stop	20	10.93
Pedestrian traffic	8	4.37
Bus stop and traffic	2	1.09
Total	183	100.00

Source: Developed by the author

Table VI.
Signs

Type of street		Driving lines				Bike lines		Park zone		Characteristics	
One way	Two ways	1	2	3	4	No	Yes	Yes	No	Free	Pay
323	9	65	496	57	0	313	19	218	114	213	5

Source: Developed by the author

Table VII.
Characteristics of Lincéstreet

Delivery and distribution of goods. By analyzing the densest areas, as shown in Table VIII, the number of packages that each establishment receives varies in different time ranges.

In total, 67 per cent of all packages registered in the fieldwork are related to the supply of supermarkets and wholesalers (12 in total). The average number of packages during the study was 175.

In the case of self-service, as shown in Table IX, the main means of transport for the supply are cargo trucks, the use of trucks for frozen products and meats, and taxis or private cars owned by merchants, to transport store foods. All of these vehicles are parked in the middle of the street.

Regarding the number of packages per supply versus the number of trips made by traders to enter their products, it can be seen that 94 per cent make an average of 4 trips transporting an average of 7 packages in total as shown in Table X.

The 14 per cent of all types of vehicles mentioned have the supplier company logo, and the same owner performs his own supply on the rest. The driver of the transport unit is the one who helps with the delivery of goods, which is 10 per cent of deliveries. To accomplish this, he must leave the unit at a considerable distance, cross the avenue, and finally deliver the goods.

Type of store	7:00-8:00	8:00-9:00	9:00-10:00	11:00-12:00	12:00-01:00	01:00-02:00	02:00-03:00	03:00-04:00	Total
Quantity of packages by hourly range									
Supermarkets and wholesalers	1,129	696	0	35	88	63	0	0	2,011
Food and beverage stores	70	25	25	15	142	97	157	72	603
Convenience stores	121	125	0	0	0	0	15	0	261
Other establishments	0	0	0	0	0	3	7	7	17
Total packages	1,320	846	25	50	230	163	179	79	2,892
Quantity of stores attending by hourly range									
Supermarkets and wholesalers	38	25	0	40	13	21	0	0	137
Food and beverage stores	35	20	10	19	22	9	157	16	288
Convenience stores	17	18	0	0	0	0	15	0	50
Other establishments	0	0	0	0	0	18	7	48	73
Total packages	90	63	10	59	35	48	179	64	548

Table VIII.
Delivery of goods

Source: Developed by the author

	Vehicle classification						
Type of store	Bycicle	Car–taxi	Cargo truck	Pickup truck	Trucks	Van	Total
Supermarkets and wholesalers	2	8	49	8	7	8	82
Food and beverage stores	3	19	13	3	1	2	41
Convenience stores	0	9	4	0	0	1	14
Other establishments	0	3	0	0	0	1	4
Total	5	39	66	11	8	12	141

Table IX.
Type of stores

Source: Developed by the author

Packages quantity	Interval of vehicle trips to the store From 1 to 2 trips	From 3 to 5 trips	From 6 to 9 trips	More than 10 trips	Total
Between 1 and 5 packages	23	1	0	0	24
Between 6 and 10 packages	26	10	0	1	37
Between 11 and 15 packages	3	9	0	0	12
Between 16 and 20 packages	13	9	0	0	22
Between 21 and 30 packages	10	18	1	0	29
Between 31 and 60 packages	5	3	5	1	14
More than 60 packages	2	1	0	0	3
Total	82	51	6	2	141

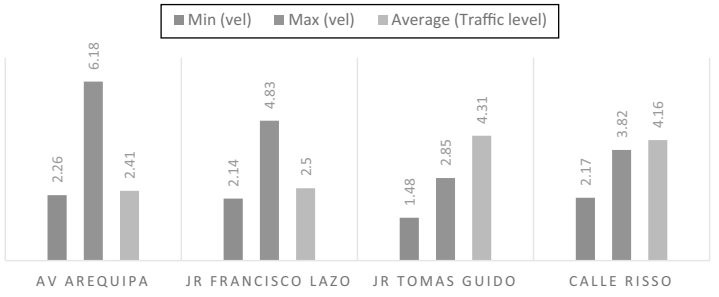
Source: Developed by the author

Table X.
Quantity of packages

The results have been combined with a base created by a crawler or data crawler, generating the traffic levels of Figure 3, with data for each road as maximum speed, minimum and average traffic level, where: The level of traffic has values from one to five, being five the most severe traffic and one the least severe.

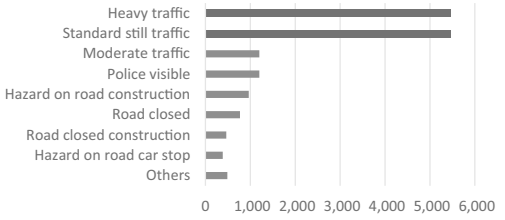
The event report by type is detailed in Figure 4.

The information of the entire research process is summarized in the control panels, which are updated every 10 min, making the process of decision-making easier in traffic control.



Source: Developed by the author

Figure 3.
Traffic levels



Source: Developed by the author

Figure 4.
Traffic analysis

Discussion

The implementation of public policies that minimize the negative effect on the distribution of the product is necessary to maintain an adequate flow of goods that contribute in the life qualify for the inhabitants of Lince. This article provides logistical information of one specific zone, which allow identifying its requirements and public policies to improve the coordination between public and private actors involved on the distribution of the last mile.

Large megacities pose problems in transportation and affect distribution. One of the cases that inspired this study was the solution approach applied in New York. 300,000 deliveries is the average only in the city of Manhattan and a goods delivery time from 10:00 p.m. to 6:00 a.m. was suggested to reduce the impact in high-density hours (Holguín-Veras *et al.*, 2015), improving the stop time per download by 72 per cent. Based on the results obtained, we found high vehicular and pedestrian congestion at all times, the owner himself uses to transport goods his own car and taxis (more than 13,000 events finding), as well as the working hours of the stores going from 7:00 a.m. until 10:00 p.m. One way to reduce the traffic generated by the delivery of goods is to implement a night delivery policy that takes advantage of the little traffic congestion and the availability of stores that are open at night, this will reduce the excessive use of cars for transportation of goods reducing disruptions to badly parked vehicles and optimizing traffic in the city. This solution being feasible in the long term.

Additionally, Paris has 10,000 loading and unloading bays, in some areas there is one every hundred meters; Barcelona has 8,000, Buenos Aires has 750 and Belo Horizonte has 550 (De Oliveira and Dias Guerra, 2014). As an alternative solution, exclusive lanes for public transport and specific places for the collection of goods and delivery planning at established times, were suggested. In the city of Lima, there are informal and public parking lots used as loading and unloading bays (Ministerio de Transportes y Comunicaciones, 2015). In this point, part of delivery characterization indicates that 87 per cent of the establishments do not have a loading and unloading area, causing 47 per cent of the disruptions to be due to parking violations, added to the fact that 83 per cent of the streets do not have parking signs. According to supply products, of the 1,135 establishments found, deliveries are made between 7:00 a.m. and 9:00 a.m. supplying 40 per cent of the establishments found. Taking into account that the supply is given in small deliveries (six packages for each trip of the deliveryman), it gives an opportunity to implement exclusive places of low cost cargo that allow to carry out a better planning and transportation of the products. It does not need to be used exclusively for the supply, in low-density schedules they can be used for another use. If it is important that it has an adequate use with a parking time between 15 and 30 min.

Furthermore, some authors suggest that the logistics terminal location within the city of Lima, which was built by the public sector, requires a multi-objective programming considering the cost of transport, cost of travel time and CO_2 emissions (Yamada *et al.*, 1999). To contribute to reduce a CO_2 emission in Lince, transportation alternatives must be implemented, such as encouraging the use of bicycles for the delivery of merchandise or cargo cycles. These transport alternatives can start from the loading bays consolidating several orders for each establishment helping to reduce the use of taxis for the delivery of products.

Because of the great urban growth of Lima in recent years, where new businesses, residential buildings, schools and places of entertainment appear. It is important to make a quantitative analysis to be able to characterize the city that allows us to implement solutions logistics and urban creating policies that regulate the growth of the city. In addition, the characterization allows us to identify the adequate

transportation environment, such as road infrastructure, services and regulations. This leads to an in-depth analysis of the cities regarding logistic units, which makes possible to link logistics facilities and transport infrastructure, to make logistics of the products that transit between them, more efficient. Thus, improving the delivery planning and minimizing the impact on distribution and the flow of people moving in the city. That is the reason why it is necessary to understand the different levels in which the public policies regulating this transit are creating and the different actors that take part of this process. As part of this research, we found that the predominant types of businesses are nano stores, food stores and furniture. Regarding the description of the streets, we see that they are one way with two lanes, with little presence of bicycle lanes. About buses, they do not have exclusive places to stop due to the lack of signage. In addition, there is no planning at the departures, who decides that the departure of the bus from the central station is the driver. To improve traffic management taking into account the number of pedestrians and automobiles mentioned and parking infractions, a car parking charge may be applied with a time limit that allows the efficient use of the spaces of parking, both for parking and loading and unloading products and place signs to bus stations to reduce stops at any point on the street.

As it can be seen, there are two agencies that regulate the transit of people and products in the city of Lima: the Ministry of transport and communications, which depends on the central government and the Lima City Council, which is the local government. When we talk about urban development, typically we focus on the construction of bridges, towers and apartments; however, before starting a new project, we need to analyze the impact of these within logistics practices as a part of the holistic urban strategy. About the impacts, we must consider the urban freight due to the great reach it has and road coverage between cities. In addition, we need to include measures as the quantity of parking, storage areas, times of use for delivery products and collect data to make decisions.

The objective of the strategic suggestions is to consider an adequate infrastructure for logistics operations, both in urban areas and in regulated loading and unloading areas to improve the efficiency of vehicle flow, reduce non-conformities and promote an effective system for resource distribution, improve the service quality and the people's quality of life; by the use of flow areas as loading and unloading areas. To support this point, it is important to integrate all the information related to the delivery schedule, the types of vehicles used for the delivery, identify the schedules of high traffic congestion, the update of new stores and challenges that have for the delivery of products. This first characterization of logistics in Lince allows us to find new challenges to be more efficient logistics management, propose alternatives that help to improve supply networks and have a better urban design.

Moreover, if we work analyzing where the points or streets with high stores density are, we can suggest the best schedule for the delivery of products and help to improve the planning of the delivery of products.

The different public policies at the district level pose a challenge in the distribution in the last mile/kilometer, as they raise certain points of coincidence, but others are very specific to each district. There is also a lack of public spaces for loading and unloading operations, which is vitally important, considering that 70 per cent of the distribution channel in Lima is made up of small family businesses such as small shops and convenience stores, without their own facilities for these operations.

The public policies described above must be evaluated in coordination with the actors involved in the public and private sectors for the decision-making of the priority solutions and their adaptation according to the reality of the area. A crucial aspect to be taken into

account for the election of each policy is the necessary investment for its implementation, which implies the contribution of operational and/or financial resources by the actors, superior to the economic benefits in the short term, in the case of private actors. In this sense, it is necessary to design incentive systems, be they tax, operational, financial or otherwise, to promote the adoption of said practices.

Conclusions

The growth of the urban population in recent decades poses a challenge for humanity regarding the efficient management of resources, to ensure the distribution of water, energy, food and other products to their inhabitants. The growth requires urban planning with a deep knowledge of the habits preferences and theirs behavior to improve the people's quality of life.

In this sense, with the study of the most populated cities in the world, the dynamics in the use of infrastructure and the flow resources could be known. This research presents the reality of Lince, a typical Latin America inmegacity, in a megacity of Lima. A inmegacity is an interesting unit of analysis because it makes possible to inventory the infrastructure , the roads and the regulations. The buying patterns of the inhabitants at a detailed level, the dynamics of the commercial establishments and the distributions problems in the last kilometer, can be known in the methodology applied in this study.

The lack of urban planning increases the distances and times of products and community mobility. An accurate urban development with well-established policies will help integrate all the inmegacities, improving the distribution planning. The population density plays an important role in the analysis at this scale. The flow of vehicles and loading and unloading spaces, bring out the challenges that arise from the supply activities and loading and unloading operations in the selling points. This is linked with the variety of types of establishments, sizes and location.

One factor toward the sustainability of this inmegacity is to improve delivery logistics in the last mile, with these four actions: First, we must know how the logistics network is designed to develop an efficient and flexible fast network and face new challenges related to infrastructure management and the strategy of vehicles to use. Second, the implementation of public policies that help create them according to the reality of the city, basically working on the access or restrictions of vehicles, schedule policies, incentives for the use of vehicles with low emissions and taxes that help improve traffic management Third, the use of business analytics to simulate models that improve the distribution network, obtain information for decision-making and have an adequate management of product demand. Finally, with all the information that is generated daily, a data observatory must be created with the help of the central government to monitor the city environment, control parameters and visualize all the results obtained for the exchange of information with other cities which seek for better logistics practices. With this research, we have been able to learn about the first results of how the Lince network was designed and also to identify opportunities for improvement.

This paper describes the logistic profile of Lince and analyzes indicators that provide relevant information about the logistics performance and presents a characterization of this inmegacity for decision makers in the public and private sector. The main contribution of this research, in a process of city urbanization and growth of Lima, is the characterization of Lince's panorama, to establish the bases to positively impact on the quality of life of its citizens, with policies based on improving indicators such as increasing the loading and unloading area by 7 per cent, the pedestrian/vehicle ratio by 10 per cent, the pedestrian mobility by 20 per cent, alternative mobility by 15 per cent, as well as the signs by 17 cent. On the other hand, the

disruptions of the vehicle flow reduce by 17 per cent and the green house gases generation by 30 per cent.

Within the policy schedules, the loading and unloading zones of products with adequate schedules can help the urban planning, reduce the urban pollution, promote the public transportation, reduce the private traffic and generate a sustanaible community. The City Council of Lince needs to identify the areas where projects can be developed, organize commercial activity, without obstructing pedestrian and vehicular mobility, reduce the risks associated with accidents and improve the citizen's quality of life.

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Distinguishing characteristics of the doctorate programs in business administration in Colombia

The student perspective

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Caracteristicas distintivas de los programas de doctorado en administración en colombia

La visión de los estudiantes

Características distintivas dos programas de doutoramento em administração na colômbia

A visão dos alunos

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Abstract

Purpose – The purpose of this paper is to focus on achieving an approximation to the understanding of the situation of management doctoral programs in Colombia. Despite the need to evaluate the suitability and relevance of management doctoral programs, at present, there are no studies that inquire about the conditions of students and graduates of doctoral programs in the management research field.

Design/methodology/approach – An exploratory exercise was developed, information was collected with students and graduates of various doctoral programs to initiate a contextualization and characterization in terms of doctoral training from the students' point of view.

Findings – At the end, conclusions are presented on the status and prospects to continue with future studies that allow find the conditions of doctoral level training in the management field and the impact of the research carried out by doctoral students and graduates of these programs.

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Originality/value – This paper will contribute to the review of the existing studies regarding doctoral education in management in Colombia, which presents principal motivations about investigation in the field of study, and as such, open the space to question about the reality of the programs in terms of those who are receiving the formation.

Keywords Doctoral programs, Higher education, Postgraduate studies in management

Paper type Research paper

Resumen

Objetivo – El propósito de este trabajo es lograr una aproximación a la comprensión de la situación de los programas de doctorado en Administración en Colombia. Existe la necesidad de evaluar la idoneidad y relevancia de los programas doctorales en Administración, en la actualidad no existen estudios que indaguen por las condiciones de los estudiantes y graduados de los programas doctorales en el campo de la investigación en Administración.

Diseño/metodología/aproximación – Se desarrolló un ejercicio de tipo exploratorio, se colectó información con estudiantes y graduados de diversos programas de doctorado en Administración de cara a iniciar una contextualización y caracterización en términos de la formación doctoral desde la visión de los estudiantes.

Hallazgos – Se presentan conclusiones sobre el estado actual y perspectivas para continuar con estudios futuros que permitan profundizar sobre las condiciones de la formación a nivel doctoral en el campo de la Administración y el impacto de las investigaciones que desarrollan los doctorandos y graduados de estos programas.

Originalidad/valor – This research will contribute to the review of the existing studies regarding doctoral education in Management in Colombia, which present principal motivations about investigation in the field of study, and as such, open the space to question about the reality of the programs in terms of those who are receiving the formation.

Palabras clave Programas doctorales, Educación superior, Posgrados en administración

Tipo de artículo – Artículo de investigación

Resumo

Propósito – O objetivo deste trabalho centra-se na obtenção de uma abordagem para a compreensão da situação dos programas de doutoramento em gestão na Colômbia. Apesar da necessidade de avaliação da adequação e da pertinência dos programas de doutorado em gestão, atualmente não existem estudos que inquirem as condições dos alunos e egressos dos programas de doutorado no campo da pesquisa em Administração.

Design/metodologia/abordagem – Um exercício exploratório foi desenvolvido, era a informação recolhida com estudantes e graduados de vários programas de doutorado em gestão para iniciar uma contextualização e caracterização em termos de formação doutoral do ponto de vista de os alunos.

Originalidade/valor – Esta pesquisa contribuirá para a revisão dos estudos existentes sobre a formação de doutores em Administração na Colômbia, que apresentam as principais motivações sobre a investigação no campo de estudo e, como tal, abrem o espaço para questionar a realidade dos programas em termos daquelas quem está recebendo a formação.

Palavras-chave Programas de doutorado, Ensino superior, Programas de pós-graduação em gestão

Tipo de artigo – Artigo de pesquisa

Introduction

Quality education and high-level investigation play a fundamental role in the social and economic development of a nation. Countries like Colombia that face the challenge of development have bet on the design and implementation of high-quality doctoral formation programs that aim to educate the new generations, and that seek to generate new knowledge. As such, management as a knowledge field has not been unaffected by the requirement of investigative endeavors that are able to take on the challenge of

understanding and creating new models in a context where organizations are constantly changing and are subject to emerging complexities. For this, not only professional and postgraduate education is unavoidable, the need to count with doctorate programs with a high level of difficulty and dedication also surges, ones that will educate toward comprehension and development of conceptual, methodological and practical proposals that will improve performance and organizational performance.

Therefore, the evaluation of aptitude, impact and conditions of study of the participants in doctoral management programs is relevant, as its reach and pertinence have a direct relationship with the processes that generate knowledge through investigation for the field. Also, until now, there have been no studies focused on inquiring about the reality of these programs as far as aspects pertaining to students, as well as graduates, of doctoral programs in the aforementioned field in Colombia.

It is worth highlighting that some of the works that have analyzed doctoral programs in Colombia, such as the ones developed by Cárdenas (1991), Aldana *et al.* (2005), Páez (2007), Soto (2009), Jaramillo (2009) and Guerra (2012), have not taken on the case specifically aimed toward management. However, authors like Malaver (2006), Macías (2010), Posada (2011), Ruiz and Naranjo (2012), Toro (2013), Sanabria *et al.* (2014), Malaver and López (2016) have studied the rise and development of investigation in management in Colombia, but not specifically about doctoral programs, about the later, is the work done by Orozco (2016) as the point of view of the field researcher. As such, with the intention of providing some context toward the motivation on which this paper is focused, it is necessary to mention the importance of knowing the reality of doctoral education, not only in terms of state and development of supporting investigation, but also from the characteristics that determine its functionality from the perspective of the students.

On an international level Brewa *et al.* (2011) were working on the motivation of examining the relationships between doctoral studies and the conditions in which this formation is developed, as such, they suggest that not only the use of development opportunities by doctoral students shapes academics, but also the context in which it takes place, plays an important role. In the meantime, Pilbeama *et al.* (2013) highlight how important it is for higher education at a doctoral level to know the networks between students, the nature of its formation and benefits and, then, the authors develop an investigation exercise where they examine through consulting 17 doctoral students about factors, conditions and mechanisms that generate value between the student networks, as well as the structures that allow for or restrict the creation and management of said relationships in the doctoral education.

As such, the motivation for this paper has to do with the development of an approximation to the comprehension of the situation of the doctorate programs in management in the country, and that through and investigation exercise of explorative type, collects information aimed toward a contextualization and characterization in terms of doctoral formation from the perspective of the students. Following this, this paper aims to contribute toward the goal of having a better understanding of the current situation of the programs from the people involved, as well as, according to the results found, general guidelines will be presented that will allow the statement of questions that contribute toward the development of investigations in this field, and regarding the future of these programs, understanding them as spaces where knowledge is built and called upon to contribute in the organizational and corporate development. Summarizing, the present document will contribute to the review of the existing studies regarding doctoral education in management in Colombia, which present principal motivations about investigation in the field of study, and as such,

open the space to question about the reality of the programs in terms of those who are receiving the formation.

The document is organized the following way:

- review of literature where the motivation is contextualized according to previously made studies that have inquired about matters related to doctoral formation and management investigation in Colombia;
- aspects related to the doctorate programs in the management field;
- methodological aspects for the development of an exploratory study about the perception of the students and graduates of doctorate programs;
- main findings and results regarding academic issues, both for students and graduates; and
- finally, the conclusions and discussion of the limitations of the resulting findings.

Doctoral formation in Colombia

It is relevant to expose some historical aspects of doctoral training in Colombia. The first is related to the work of Cárdenas (1991), which formulates proposals for the creation of high-quality doctoral programs in Colombia, as well as in other countries that were at that time in a similar stage of development. What was exposed by the mentioned author was developed through the revision of a compendium of investigation articles in which the emergence of doctoral programs in different countries around the world. For this time, the author proposed the need to design a national strategy that would ensure the availability of scientists for the development of the production sectors and the strengthening of education and investigation. The question posed was related with the type of doctoral education that was required by a country, and as an answer, it was shown that this was not a trivial matter. As such, Cárdenas (1991) showed that the design and the implementation of doctoral formation programs, especially in the conditions of countries like the ones in Latin America, should not display an inferior level to those in developed countries.

On the same path, Bello (2007) exposes that the time in which development of doctoral programs started in Colombia is related to the inherent characteristics of the country. Also, Páez (2007) analyzed why it is necessary to give importance to doctoral formation in the country. For this author, there are several reasons why this type of education is necessary, and he also highlights the fact that a doctoral program offers a defined and structured path of academic formation through investigation and, in consequence, provides the tools required to properly channel investigation efforts. He also remarks that doctoral formations allow for the creation of scientific communities that master methodologies in their respective disciplines. This is how it is determined that these types of scientific communities are necessary insofar as investigation requires a high-level academic formality to achieve development as a discipline, as is the case of management, and in this order, determines the need to prepare intellectuals that take in to account the Colombian reality, and that are capable of contributing with investigation, both for the academic and corporate audience.

After that, Jaramillo (2009) analyzed the most important milestones of the existing relationship between science and technology and postgraduate education, particularly at master's and doctoral level. For this author, postgraduate courses in the country show a tendency toward professional specialization, more so than master's and doctoral degrees. Also, Jaramillo (2009) highlighted that doctoral programs should keep a close relationship with scientific investigation abilities, technological development and innovation, with the purpose of overcoming any weaknesses that can emerge regarding these issues. This way,

the aforementioned author declares that investigation groups are the ones that should provide support on quality levels and excellency to postgraduate programs, aimed toward investigation lines which ultimately result being fundamental for the development of doctoral programs in the country.

Meanwhile, Soto (2009) characterized the reality of doctorate programs in terms of the difficulties and contributions to the development process of the country. In this way, it is highlighted that the situation regarding doctorates with research goals have arrived late to Colombia, the previous by comparing with North America, where a university research model existed since 1945. On the other hand, he remarks that, in Colombia, doctoral formation programs were established toward the last decade of the twentieth century and in virtue of the incidence of knowledge globalization, which created a new concept of university founded in investigation.

Afterward, Guerra (2012) emphasizes that postgraduate programs are mediums for the formation of investigators and investigation development, a situation that is supported in the fact that the main sources for academic investigation in Colombia are in the programs at a master's, doctorate and post-doctorate levels. It is determined that the challenges of postgraduate programs are focused on issues related to the low number of doctorate programs in the country, the lack of international academic publications and the low rate of investment on the government's part toward these types of programs. In consequence, issues like promoting investigation formation in schools, the flexibility of the policies of the national science and technology system and the establishment of clear goals by the Colombian Government that promote investigation are some that are worth highlighting.

Management research in Colombia

According to Malaver (2006) and Macías (2010), investigation in the field of management in Colombia showed important advances, insofar as it went from an incipient state between the 1980s and the 1990s, toward a take-off state during the twenty-first century. As such, there are several works that analyze the steps that have occurred in investigation, among them those developed by Posada, 2011, Ruiz and Naranjo (2012), Sanabria *et al.* (2014) and Malaver and López (2016).

In Malaver's work (2006), the level of advancement in investigation in the period between 2000 and 2006 is analyzed. For this time lapse, the author focused on the study of disciplinary development and investigation, making great emphasis in the capabilities of production and dissemination of knowledge. At the same time, the work shows that, during the said period, there was a growth in terms of investigation, as well as the amount and quality of the production of the groups, highlighting the importance of scientific magazines during this process.

Afterward, Macías (2010) analyzes the "frontier" of knowledge in the field of management through the review of literature. For this, the author considers articles published in magazines with greater visibility within the scientific community in management – *Management* – this with the main goal of calling the academic community toward the construction of the field under higher rigor levels and a better international dynamic (Macías (2010). The author also emphasizes the need of making additional efforts to solidify Colombian investigation in the field of management.

Consequently, the work by Posada (2011) characterizes the states of investigation in terms of the management faculties in Colombia. This work identifies the different aspects that intervene in the processes that generate knowledge within academic units. Then, the author determined that there is a high dependence between the generation of knowledge with the aspects derived from social problems and the economic development of the country.

On the other hand, Sanabria *et al.* (2014) move forward in the review of literature to analyze the building of meaning, achieved in terms of investigation and with the purpose of having a better understanding of the field of knowledge. To achieve this, the authors used qualitative tools to identify, and the analyze, the articles published by researchers on the top academic magazines in the field in Colombia, managing to obtain results that show aspects such as the fact that academics are focused mainly on three main subjects: first, academic programs and education, scientific production and investigation and the issues of management in Management schools. Lastly, Malaver and López (2016) made a reconstruction of investigation in management in Colombia between the years 1965 and 2015.

Doctorate programs in the field of management

According to the information available at the "Sistema Nacional de Información de la Educación Superior de Colombia" *(SNIES)* (National Information System for Higher Education in Colombia) it is possible to identify the current state of doctoral programs in Colombia. In the year 2017, 382 active doctoral programs were identified in the country. Of this total, 241 are offered by official universities (of public type) and 141 by private universities. In Table I, the distribution of the programs in relation to their areas of knowledge is displayed.

From the geographic point of view, according to the SNIES information for the year 2017, 80 per cent of the doctorate programs' offer is focused in Bogotá (103 programs), Antioquia (77), Calle del Cauca (32), Atlántico (30), Caldas (24), Bolívar (16), Santander (12) and Cauca (11). Regarding the Higher Education Institution (IES by its acronym in Spanish), with the highest amount of doctoral programs in Colombia, the Universidad Nacional de Colombia leads with 71 active programs (19 per cent of the offer), followed by the Universidad de Antioquia with 30 programs, then the Universidad Pedagógica y Tecnológica de Colombia with 18, the Universidad del Valle with 17 programs, the Universidad de los Andes with 16 active programs, the Universidad del Norte with 15 and the Universidad de Cartagena with 14 programs.

Regarding doctorate programs in management, by the year 2017, the Ministry of National Education in Colombia (MEN by its acronym in Spanish) has authorized the operation of 11 doctoral programs as shown in Table II. These programs are focused in private universities (64 per cent) and developed in the main cities of the country, such as Bogotá: 45 per cent, Medellín: 18 per cent, Barranquilla: 18 per cent, Cali: 9 per cent and Manizales: 9 per cent. It is important to remark that the average length of these programs is

Table I.
Doctorates by area of knowledge

Areas of knowledge	No. of pages	Total (%)
Agronomy, veterinary and related	16	4.2
Fine arts	3	0.8
Education sciences	43	11.3
Health sciences	57	14.9
Social and human sciences	78	20.4
Economy, management and accounting	23	6.0
Engineering, architecture, urbanism and related	79	20.7
Mathematics and natural sciences	80	20.9
Others	3	0.8
Total	382	100

Source: SNIES (2017), https://snies.mineducacion.gov.co

IES (Higher Education Institution)/city/type	Name of the program	Ranking Post-Sapiens 2017 (*)	
Universidad EAFIT (Medellín – Private)	Doctorate in Management	AA	Q3
Universidad de los Andes (Bogotá – Private)	Doctorate in Management	AAA	Q1
Universidad del Valle (Cali – Official)	Doctorate in Management	AA	Q1
Universidad del Rosario (Bogotá – Private)	Doctorate in Management Sciences	AA	Q3
Universidad Nacional de Colombia (Bogotá – Official)	Doctorate in Engineering, industry and Organizations (**)	N.D.	Q1
Universidad EAN (Bogotá – Private)	Doctorate in Management	AA	Q4
Universidad del Norte (Barranquilla – Private)	Doctorate in Management	AA	Q2
Universidad de Medellín (Medellín – Official)	Doctorate in Management	AA	Q3
Universidad Externado (Bogotá – Private)	Doctorate in Management	A	Q3
Universidad Simón Bolívar (Barranquilla – Private)	Doctorate in Management	A	Q3
Universidad Nacional de Colombia (Manizales – Official)	Doctorate in Management	N.D.	N.D.

Notes: (*) Sapiens Research Ranking – Ranking Post-Sapiens 2017, information available at: www.sapiensresearch.org/postsapiens.php; (**) The basic nucleus of the program is industrial engineering and related fields; however, it is linked to the "Red de Doctorados en Administración, Dirección y Gestión de Colombia" (REDAC) (Colombian Management Doctorates Network)
Source: Information consulted on the National Information System for Higher Education in Colombia (SNIES) and the Ranking Post-Sapiens 2017

Table II.
Active doctorate programs (2017) in the field of management in Colombia

eight semesters, 73 per cent of the programs have yearly admissions and the amount of credits per program is 94. It is also shown in Table II the ranking given by the independent qualifier *Sapiens Research*, which evaluates the different attributes of the doctorate programs in the country, and in different areas, establishing a classification by investigation indicators and high-quality registries (highest: AAA, higher: AA and less high: A) and also a ranking by quartiles (for more information, we suggest consulting: www.srg.com.co/postsapiens-temp/metodologia/).

According to the information presented by each program, it is established that most doctorates are aimed toward people with research interests, that do activities related to teaching and that linked to academic institutions; this last one tied to them being able to dedicate and guarantee the application of the acquired knowledge, which acts in accordance with the essence of the current rules for doctorate studies in the country. Regarding this characteristic of focus toward formation of academics, it is possible to infer that the programs available keep trend with the researching character, and not professional.

What was previously stated is different to path taken by the USA, Europe and even other countries in Latin America, where doctorate programs in the field of business management have different denominations, and their goals may depart from investigation. Regarding the previous, the reported made by the *Association to Advance Collegiate Schools of Business* (AACSB, 2013) recognizes the two most common designations for the doctorate programs in

the field of business: PhD (*Doctor of Philosophy*) and DBA (*Doctor of Business Administration*). In this sense, among traditional studies (PhD) active programs in Colombia are classified; this denomination refers to those programs that are focused on basic investigation and are aimed toward those who are developing an academic career (or wish to). On the other hand, DBA programs (thus far, no programs in the country operate under this type) refer to programs that are generally focused on applied investigation and are aimed toward professionals linked to the corporate sector.

Because of this, it is possible to point out that the current condition regarding doctoral formation levels in the field of management is under growth process and looking to consolidate. The previous cemented by comparing data pertaining to other areas of knowledge, which show better consolidation in terms of the offering of these types of programs. After all, doctorate programs in the field of management, according the information of 2017, only represent a 3 per cent of the offered doctorate programs in Colombia.

Methodology

The methodology used to accomplish the purpose of this paper is supported in the use of *online* surveys, designed and applied by way of the platform *SurveyMonkey*. The previous is justified in terms of the advantages that these types of tools offer, such as low cost, simplicity, speed of implementation and answer and the capacity of consolidating and analyzing answers easily (Van Selm and Jankowski, 2006). Also, according to what is highlighted by Evans and Mathur (2005), by using this type of tool, it is possible to gather better acceptance due to issues related with confidentiality concerns, freedom of answer and time availability. Besides, the authors established that it is important to consider that these types of surveys contribute toward the elimination of the bias of the interviewer and/or possible mistakes that the same may commit. However, among the limitations of the use of said tool for the collection of information is the absence of clear instructions to answer the survey, the lack of technologic ability to use the system and the low rate of answer among the interviewed people (Evans and Mathur, 2005). For the development of the present paper, the necessary testing measurements were taken, to avoid said inconveniences.

Regarding the operative process for the collection of information, after the elaboration, the information was sent to the directors/coordinators of the active doctorate programs in the "Red de Doctorados en Administración, Dirección y Gestión de Colombia" (REDAC) (Colombian Management Doctorates Network), and active on said network in 2016, alongside an explanatory communication about the purpose of the study, and requesting the participation of their students and graduates (if it applied). This way, the directors/coordinators sent the information and survey electronically. The completion was done through an electronic platform made for this exercise. The participants were asked to review and accept the initial informed consent; also, to ensure the confidentiality of the participants, the follow-up options of the platform were deactivated. The collection of information took place on the time period between October 2016 and February 2017.

Regarding the survey, it contained socio/demographic questions, questions about the "Institución de Educación Superior" (IES) (Higher Education Institution) where they are currently studying or from where the student graduated. The interviewed also answered questions about their line of investigative work, the general satisfaction about the aspects of the program and the IES and finally, they were inquired about the academic production during the formative process. When the collection of information was finished, the respective systematization and analysis of the results proceeded.

Main findings

Main descriptors

A total of 39 doctorate students participated on this study; of them, a total of 31 students and five graduates totally completed the provided survey. The participation according to IES and gender they belong to is shown in Table III.

Regarding the general characteristics of the participants, it was shown that in terms of employment status of the students, this aspect is divided between students with scholarships and part-time dedication (8.02 per cent), students with scholarships and full-time dedication (36.09 per cent), employees with part-time employment (11.96 per cent) and employees with full-time employment (43.93 per cent). Additionally, the people that said they are employed (14 students) established they are linked to the academic sector (78.59 per cent) and to the public sector (7.13 per cent). Among the characteristics pertaining to financing, it shows that the students of these programs use their own funds for expenses (51.52 per cent), funds coming from government sources (24.24 per cent), aid from the university where they studied (45.45 per cent) and economic aid from and academic institution different from the place where they study (9.09 per cent).

As such, it shows the low participation of government funding sources; it is possible to deduce that the students and the universities where they develop their formative process are the main sponsors. On the other hand, regarding the formation period, it was found that 44 per cent said they are currently in their formative stage coursing seminaries, 37 per cent are coursing the research stage, 9 per cent are currently coursing the doctoral research stage (internship) and another 9 per cent are currently on what could be considered the final stage of the research project.

Academic findings

Especially in relation to the themes of the field study, it is possible to identify that the areas have more participation by the consulted students are the ones pertaining to organizational, financing and accounting areas and strategic area (Figure 1), but other areas related to management are also present. It is possible that the preferences for these fields over others are because, among other things, of the strength that the universities have developed in their investigation groups, as well as the formation of tutors and the lines of investigation they offer their students.

Regarding publication done before starting the postgraduate study and during the development of the program, meaning, the production/publication of articles in indexed national magazines in the *Publindex* category, in Web of Science (before ISI) or national or international Scopus, books or book chapters, research documents (*working paper*), among others. For this, an average was identified, before starting studies, of 0.52 (σ 0.54) total publications in the total available options. Once started the doctorate program, the publication average drops to 0.40 (σ 0.46) in the total of available options.

Institution	Participant students	Participant graduates	Women (%)	Men (%)
Universidad de los Andes	5	4	22	78
Universidad del Norte	4		75	25
Universidad del Rosario	8	1	22	78
Universidad del Valle	7		14	86
Universidad Nal. de Colombia	7		14	86
Total	31	5	23	77

Table III.
Doctorate students and graduates that participated in the study

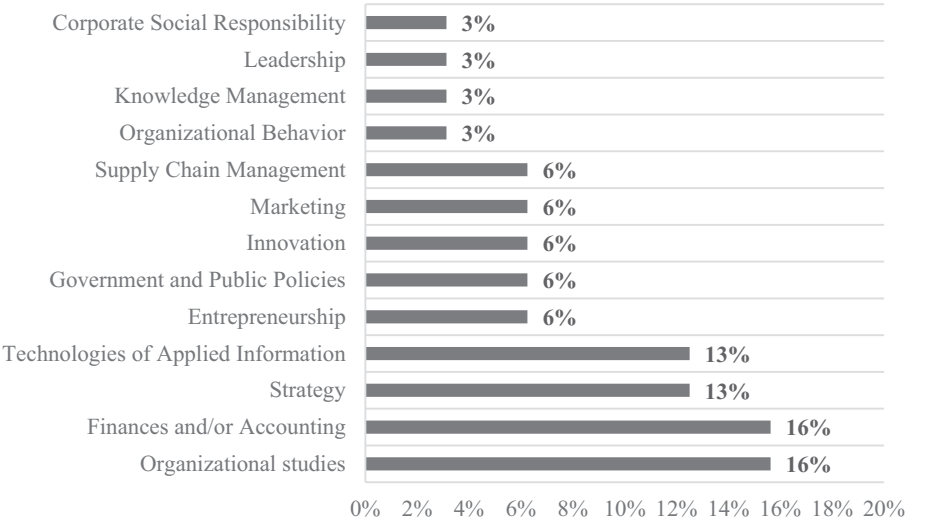

Figure 1.
Under what line of investigation will you frame your doctoral research project?

About the issue of published work, most of the studied doctorate programs include, among their requirements for the development of the program, the publishing of different materials, be it articles, books chapters or participation in conferences or colloquiums on an international level. The previous turns doctorate programs into adequate spaces to increase the index of work published by students, which favors not only the contributions to the field, but also the research groups to which they belong.

Tied to the previous, the participation of doctorate students in academic events, national and international, it is important to highlight most of the participation in international events as speaker [$-x$ 1.68 | σ 1.65] than in national events [$-x$ 1.33 | σ 1.83]. Also, in terms of participation in doctoral colloquiums, students manifested a greater participation in national events [$-x$ 0.73 | σ 1.06] than in similar activities of an international nature [$-x$ 0.45 | σ 0.71]. In this sense, the demand or possibility of participating as speakers in international spaces not only allows for the reinforcement of the foundations of research by doctorate students, but also eases the creation of researcher networks and the linking to discussion scenarios proper to the field of study. The limited participation in national events may also have a relation with the limited number of quality events that are scheduled in the country.

Until now, and regarding academic spaces, it is possible to infer that the academic production developed by the participants is pushing aside the matters that seem attractive, so to speak, to entrepreneurship in terms of reality and organizational impact. Themes like marketing, innovation, social responsibility and leadership are seen, according to the results of this exploration, as the areas chosen the least as fields of study. The previous may be directly related with the subjects that are published most often in indexed magazines, e.g. in Scopus; by researching in the *Scimago Journal* and *Country Rank* (www.scimagojr.com), in the Colombian case, it was found that the research subjects preferred by doctorate students coincide with areas that have the largest amount of publications registered in the reference base. It is possible, in a later study, to endeavor more deeply into this matter.

In general, doctorates require the completion of doctorate research stages or international internships (in some cases, it can develop the doctoral research stage in national universities). In general, these internships tend to be tied to agreements with other universities; however, 36.67 per cent of the participants stated that their institution did not have agreements of the sort, and such, it is up to the student to develop these types of activities by their own means, delaying its development in many cases or even casting doubt over its effectiveness. Finally, 20 per cent of the participants described situations in which the university where they study their doctorate has the agreements, but they go unused, because they are perceived as difficult to access, and that it does not have the proper guidance to use said agreements.

On the other hand, some administrative characteristics regarding academics were evaluated, and it was found that the satisfaction regarding them, on a scale of 1 to 4, reached 3.17 (Figure 2). In general terms, the clarification of the administrative aspects can be placed at a medium level; some administrative difficulties can delay the development of the program, the compliance of its academic objectives, facilitate international insertion and, even worse, impede the research process.

To summarize, regarding academic aspects, the interviewed students seem to be satisfied with the general processes of the program they are registered to. Regarding research themes,

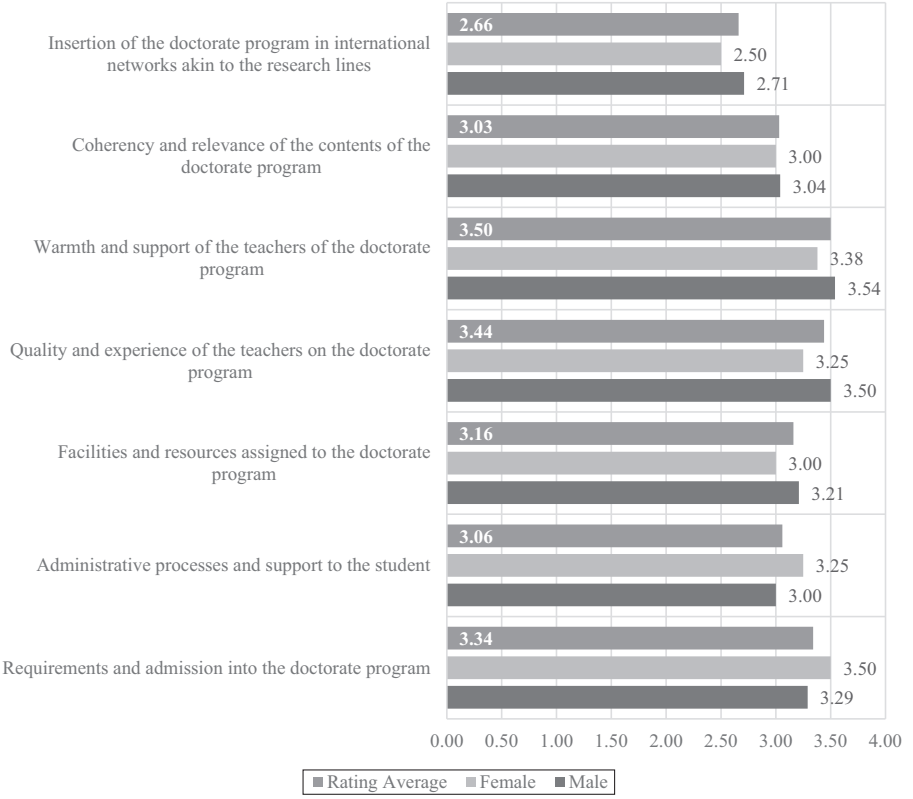

Figure 2.
In general, and until now, how satisfied are you with the following characteristics of your doctorate program?

these are focused on the areas that can be considered traditional in the field of study of management. Certain ambiguity was also detected regarding research international internships and the agreements that should give support to this type of internship. And, regarding administration aspects, there are some areas of improvement that will guarantee all the above.

Graduates main characteristics

About the information provided the group of graduates who participated in the study, it shows that the full number of participants is currently employed on a full-time basis, and in the academic sector. However, regarding the financing of their studies and similar to what was found in the case of the students, the group pointed out that they sought different financing options (Figure 3); even though it seems there are various options to finance the development of a doctorate program, the option of financing by their own means stands out over the others, the same being used by students to decline permanence or relationship clauses the other financing options seem to be tied to.

Regarding the doctoral dissertations of the graduates, these coincide with the ones in the group of students, meaning, the most sought out subjects have been financing and/or accounting and organizational studies. Regarding the satisfaction of the graduate group about certain characteristics of the doctorate program they coursed (Figure 4), the average evaluation of all the factors was 3.23 (σ 0.18). The graduates agreed with the group of students regarding the factor with the lowest rating, as is the case of the insertion of the doctorate program in international networks akin to the lines of investigation [$-x$ 3.00 | σ 1.26]. About this characteristic, an opportunity is opened to dynamize the linkage of the students, not just the teachers, to networks of research and international cooperation.

About the publications developed before, during and after the development of the doctoral education program, it shows a change pattern. Before joining the doctorate formation, the publications in indexed *Publindex* magazines prevailed, as well as the editing of complete books, during the development of the doctorate. The average of worked published in magazines indexed in *Publindex* highly exceeded the other types. However, once the doctorate studies finished, that graduates increased the level of publication in international magazines indexed in Scopus or Web of Science (previously ISI), as well as national magazines indexed on the international databases mentioned

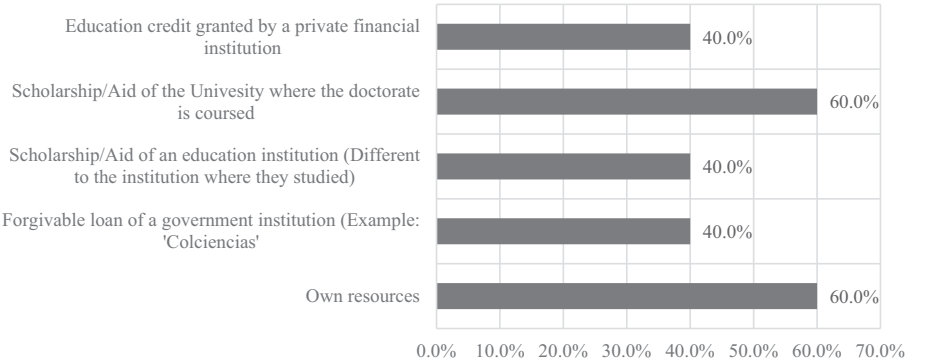

Figure 3.
How did you finance your doctorate studies?

previously. The previous is closely related with two elements: the demands for doctors in terms of publications in the respective universities with whom they are employed and the policy of measurement for groups and researchers that the Colombian case has aimed to recognize, with higher deliberation for the publications in magazines indexed in Web of Science or Scopus.

Regarding the satisfaction with the program coursed, 80 per cent of the graduates stated that it fulfilled all their expectations, and only 20 per cent stated the opposite. And, regarding agreements, 40 per cent of the graduates stated that the program had any kind of agreement for the development of the research doctoral internship with other institutions or research centers versus 60 per cent who stated that it was the student's responsibility to look on their own accord the agreements for the development of the internship. For all the graduates, the budget for the internship was under COL$40m (US$13.500 in the year 2016). Lastly, regarding issues related to the thesis tutor/director, only one of them had to make a change on their mentor, and 100 per cent manifested having had a good relationship with their thesis supervisor.

Summarizing, the reality of graduates versus the students is not that different. The preferred subjects are similar, which shows that doctoral education in Colombia in the field of business management continues the path of the more traditional areas at was suggested previously. It is evident that the interest of those who chose to pursue a doctorate is focused on continuing in the academic environment, given that the types of offer for doctorates in the country is so inclined, meaning, because there is no offer of DBA-type programs, it is to be expected that the graduates hope to remain tied to the academic and research sectors.

Final considerations

The incorporation of science and technology in productive and management processes through doctoral education and border investigation plays a fundamental role in the development of a nation. In the context of Colombia, counting with programs of this type, with high-quality characteristics that educate individuals capable of contributing to the understanding of the different areas of knowledge is turned into a demanding situation, especially in the field of business management.

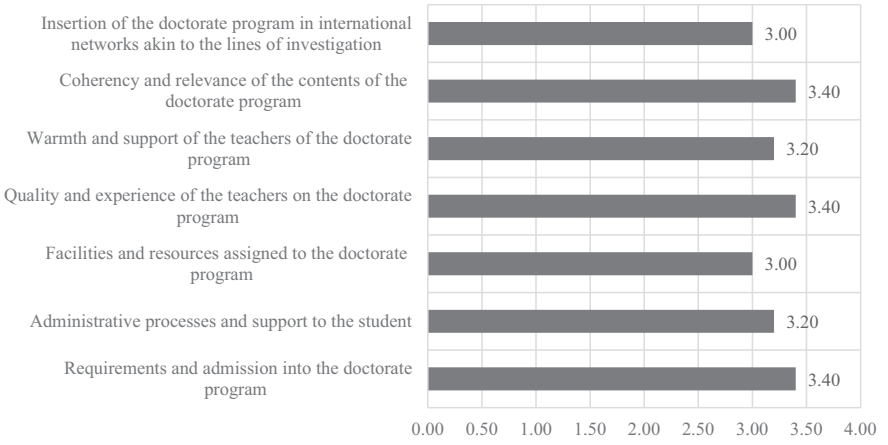

Figure 4.
In general, how satisfied are you with the following characteristics of the doctorate program you coursed?

Furthering the study of organizations (of all kinds) offers a broad space of opportunities to inquire about the reality of its behavior, functioning and its intervention mechanisms. This way, the review of literature and the exploration developed by means of a survey applied to both students and graduates reveal that doctorate programs focus their investigation in the traditional areas of management, and even though they are not foreign to subjects like entrepreneurship and innovation, they also do not seem to be solving management problems or exploring the challenges that entrepreneurs face; their contributions seem to be aimed more toward the theory than problem solving in the productive sectors of the country. The previous is added to a limited multidisciplinary proposal in research projects.

Tied to publications, the question regarding the broached subjects in research projects comes up, and whether they answer to the organizational needs of the country or simply to the need for recognition in the main schools of thought that are circumscribed to the field of business management. Regarding this, it is also pertinent to explore the impact in detail, not just regarding publishing indices, but also regarding the broaching of problematics pertaining to local organizations. Adding to this consideration, it is also worth examining in posterior studies, the need or lack thereof the country has of counting on doctoral programs of DBA type, so that, through these and with a research background, organizations can find solutions to their problems and innovation challenges.

Even though the work has certain limitations related to the number of participants and the possibility of understanding the impact of the investigation in the field of business management, it shows the need to delve further in other spaces concerned with doctoral education. As such, it is highlighted that the main limitation is the perspective of the students, which, without a doubt, evidences the importance of furthering the search for information that involves the people involved in the formative process. It is possible that, in the future, these types of papers could be articulated with existing networks and, with the support of institutions, can endeavor in subjects like teaching methods and quality, and this way, continuing investigations that allow further research into the conditions for the development of the formation seem pertinent, and as such giving relevance to the works referenced in the beginning (Brewa *et al.*, 2011; Pilbeama *et al.*, 2013) and also taking into account other aspects, like the emotional, as established in the motivations of Johansson *et al.* (2014). To finish, it is pertinent to highlight that doctoral education in the field of business management in Colombia is still in an emerging state that requires judicious following, not only by government authorities and those in charge of public policies, but also all of those involved in its consolidation and growth. To summarize, the consolidation of doctorate programs may lead to an improvement in the level of formation of human capital and, as such, would open new opportunities for the development of the country and the region.

Finally, because this is an exploratory and descriptive paper, presenting proposals for the continuation of the generation of research contributions seems pertinent and necessary. In the current state, validation hypothesis regarding the state of doctoral education in Colombia will require an in-depth exercise that allows for the contrast of the state of progress of the doctoral education process in the field of business management, with a vision beyond that state of academics, taking into account the remainder of the management of the program, visibility and regarding all the incidence in practices of the corporate environment, studies that, naturally, will need empiric validation to offer conclusive results.

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Strategic fit: microfoundations of firm's environmental performance

Ajuste estratégico: fundamentos micro del resultado medioambiental de la empresa

Ajuste estratégico: microfundações do desempenho ambiental da empresa

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Abstract

Purpose – Strategic fit is known to be an important antecedent to a firm's performance, but there is little research explaining its influence on firm's environmental performance. This paper aims to propose that strategic fit is likely to affect two firm-level outcomes: dynamic equilibrium and dynamic disequilibrium.

Design/methodology/approach – Prior debate has underlined the role of adaptation vs selection in achieving strategic fit, but we assert that firms vary in their strategic fit. This paper models inter-firm differentials in environmental performance, using survey data from a sample of Chinese small and medium enterprises.

Findings – Transformative leadership, operational agility and knowledge-based identity facilitate compensatory fit, while productivity growth, strategic adaptability and low product-market maturity enable strategic fit.

Theoretical implications – The authors show how low strategic fit may provide selection advantages via compensatory fit. Some firms do seek to achieve greater fit to the embedded contextual contingencies (dynamic equilibrium) at the cost of their energy. However, others respond to the expectations for green performance that are presently orthogonal to the embedded context to realize compensatory fit using the energy of the context (dynamic disequilibrium). This manifests as differential capabilities for adaptation vs selection.

Practical implications – The findings highlight how the firms may use cultural fit pathway for transcending the phenomenological tradeoffs between economic performance-oriented strategic fit and ecological performance-oriented compensatory fit.

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Originality/value – This paper shows how low strategic fit may provide selection advantages via compensatory fit. Some firms do seek to achieve greater fit to the embedded contextual contingencies (dynamic equilibrium) at the cost of their energy. However, others respond to the expectations for green performance that are presently orthogonal to the embedded context, to realize compensatory fit using the energy of the context (dynamic disequilibrium). This manifests as differential capabilities for adaptation vs selection.

Keywords Adaptability, Leadership, Environment, Fit, Performance, Productivity growth, Operational agility, Product-market maturity

Paper type Research paper

Resumen

Objetivo – Es conocido que el ajuste estratégico es un antecedente importante del resultado de la empresa, pero existe poca investigación sobre su impacto en el resultado medioambiental. Proponemos que el ajuste estratégico es probable que influya sobre dos resultados organizativos: equilibrio dinámico y desequilibrio dinámico.

Diseño/metodología/aproximación – El debate previo ha señalado el papel de la adaptación frente a la selección a la hora de lograr el ajuste estratégico, pero sin embargo nosotros aseguramos que las empresas varían en su ajuste estratégico. Modelizamos las diferencias entre empresas en cuanto a su rendimiento medioambiental utilizando datos de una encuesta de empresas pequeñas y medianas empresas chinas.

Resultados – El liderazgo transformacional, agilidad operativa, e identidad basada en el conocimiento facilitan el ajuste compensatorio, mientras que el crecimiento de la productividad, la adaptabilidad estratégica y una baja madurez producto-mercado favorecen el ajuste estratégico.

Implicaciones teóricas – Mostramos como un bajo ajuste estratégico genera ventajas en la selección vía ajuste compensatorio. Algunas empresas buscan un mayor ajuste a las contingencias del entorno (equilibrio dinámico) a costa de su energía. Sin embargo, otras responden a las expectativas sobre rendimiento medioambiental para alcanzar un ajuste compensatorio utilizando la energía del contexto (desequilibrio dinámico). Esto se manifiesta en forma de capacidades distintas para la adaptación frente a la selección.

Implicaciones prácticas – Nuestros resultados subrayan como las empresas pueden usar el ajuste cultura para trascender los contrastes entre el ajuste estratégico orientado a los resultados económicos y el ajuste compensatorio orientado a los resultados medioambientales.

Originalidad/valor – La investigación resalta el reto de integrar las presiones para adaptarse a la lógica ecológica predominante en la industria y los imperativos basados en el valor que apoyan la selección del ecosistema social apropiado para los grupos de interés. Enfatiza que el factor decisivo que influye de manera decisiva en la capacidad de la empresa para manejar las contraprestaciones económicas y ecológicas es la orientación cultural a favor del bienestar de las personas. Mediante un modelo integrador de desarrollo económico y ecológico a nivel nacional una empresa puede reducir los costes derivados del hecho de que algunos países puedan favorecer los intereses económicos a costa de los medioambientales y generar externalidades negativas.

Palavras-chave Resultados medioambientales, Crecimiento de la productividad, Liderazgo transformacional, Agilidad operativa, Adaptabilidad estratégica, Madurez producto-mercado

Resumo

Objetivo – O ajuste estratégico é conhecido por ser um importante antecedente do desempenho da empresa, mas há poucas pesquisas explicando sua influência no desempenho ambiental da empresa. Propomos que o ajuste estratégico provavelmente influenciará dois resultados no nível da empresa: equilíbrio dinâmico e desequilíbrio dinâmico.

Design/metodologia/abordagem – O debate prévio destacou o papel da adaptação versus seleção na obtenção de adequação estratégica, mas afirmamos que as empresas variam em sua adequação estratégica. Nós modelamos diferenciais entre firmas no desempenho ambiental, usando dados de pesquisa de uma amostra de pequenas e médias empresas chinesas.

Resultados – A liderança transformadora, a agilidade operacional e a identidade baseada em conhecimento facilitam o ajuste compensatório, enquanto o crescimento da produtividade, a adaptabilidade estratégica e a baixa maturidade do mercado de produtos permitem um ajuste estratégico.

Implicações Teóricas – Mostramos como o ajuste estratégico baixo pode fornecer vantagens de seleção via ajuste compensatório. Algumas firmas buscam obter maior adequação às contingências contextuais embutidas (equilíbrio dinâmico) ao custo de sua energia. No entanto, outros respondem às expectativas de desempenho verde que atualmente são ortogonais ao contexto embutido, para realizar o ajuste compensatório utilizando a energia do contexto (desequilíbrio dinâmico). Isso se manifesta como capacidades diferenciais de adaptação versus seleção.

Implicações práticas – Nossas descobertas destacam como as empresas podem usar o caminho da adaptação cultural para transcender as compensações fenomenológicas entre o ajuste estratégico orientado para o desempenho econômico e o ajuste compensatório voltado para o desempenho ecológico.

Originalidade/valor – A pesquisa destaca os desafios da cultura de trabalho de integrar as pressões para se adaptar à predominante ecologia industrial versus o imperativo dominante baseado em valores para selecionar o ecossistema social apropriado dos interessados. Isso enfatiza que o fator decisivo na capacidade formativa de uma empresa para promover compromissos econômicos e ecológicos é a orientação cultural para o bem-estar humano em uma plataforma nacional. Ao programar um modelo integrativo de desenvolvimento econômico e ecológico em nível nacional, uma empresa pode auto mitigar os custos da economia política internacional que surgem quando algumas nações trocam o bem-estar ecológico em prol de interesses econômicos e geram externalidades negativas.

Palavras-chave Palavras-chave Desempenho ambiental, Crescimento de produtividade, Liderança transformacional, Agilidade operacional, Adaptabilidade estratégica, Maturidade do Produto-Mercado

1. Introduction

Fleshing out the microfoundations of inter-firm performance differentials is a major area of interest in the field of strategy (Gibbons and Henderson, 2012). Economic theory predicts that inter-firm performance differentials will be eliminated over time by interplay of market forces and survival of the fittest, but empirical evidence has not supported that prediction. Several factors contribute to inter-firm differentials in strategic fit and performance. Strategy scholars attach the greatest importance to the dynamic capability construct, which refers to "the firm's ability to integrate, build and reconfigure internal and external competencies to address the rapidly changing environments" (Teece *et al.*, 1997, p. 516), in explaining inter-firm heterogeneity, and thus differential performance (Zott, 2003). Differential timing and direction of search as firms seek to adapt, and differential cost of deploying dynamic capabilities, generate inter-firm strategic fit and performance differentials (Zott, 2003).

Organizational theory scholars underplay the organizational ability to achieve strategic fit through dynamic capability evolution. They instead emphasize the role of selection forces. Firms pursue different strategies to achieve fit in rapidly changing environments. In doing so, they face two distinct types of risks – risk in the content of change and risk in the process of change (Levinthal and Posen, 2007). Risks in the content of change reflect the problems faced by boundedly rational firms in identifying a suitable destination state. Process risks reflect the embedded nature of core organizational features; change requires significant adjustments across a wide variety of interdependent organizational elements, and this in turn engenders instability. Success in managing change risks is often less a function of a firm's dynamic capability, than of the reliability of the firm's internal and external selection environment. Firm's internal selection environment (e.g. heuristics for allocating resources across different strategies) and external selection environment (e.g. preferential support and loyalty of customers, vendors, partners and financiers) are often not reliable. For instance, selection environments tend to be guided by past performance, which is not necessarily a reliable indicator of the present performance (Levinthal and Posen, 2007).

Besides the evolutionary adaptation (dynamic capability) and selection factors, a third factor – strategic choice – has been advanced by some organizational behavior scholars. Strategic choices are guided by leadership styles. Different styles of leadership tend to be effective for different contexts. Transformation style is often more effective in environments

where the firms face high levels of complexity and turbulence and for small and medium enterprises (SMEs) (Bass *et al.*, 2003; Waldman *et al.*, 2001). In such environments and in such enterprises, organizations tend to be more receptive to change. In contrast, in organizations operating in simple environments, transactional leadership style tends to be more appropriate for the stability and continuity of the existing structure, and to promote efficient growth in productivity (Bass, 1998).

In this paper, we investigate the significance of evolutionary adaptation, strategic choice and selection factors in realizing strategic fit, and thereby in explaining inter-firm differentials in environmental performance, motivated by several reasons. First, these factors contribute to the inter-firm differentials in realizing strategic fit under the ever-changing environment and their impact on organizational performance (Teece *et al.*, 1997). The context of environment performance strategy also requires firms to respond to the changing stakeholder expectations or risk-eroding legitimacy and quality of relationships with diverse stakeholders, including investors, customers and employees (Fang *et al.*, 2010).

Second, selection factors influence the ability of firms to reliably monitor, motivate and manage environmental performance. When the firms operate in a resource-munificent context that supports growth, they might become blindsided and perceive environmental performance to be irrelevant to positive firm performance. They may even perceive environmental performance compliance initiatives to be cost-escalating, discretionary expense. In mature, resource-constrained contexts, they may be more sensitive to pressures on their financial performance because of the low priorities on environmental performance, and be pressured into taking corrective steps. For instance, Menga *et al.* (2014) found that after being exposed as environmental violators, poor environmental performers in China tend to increase soft environmental disclosure in an attempt to project a positive environmental image. Another selection factor is the organizational identity. Salient organizational identity as a knowledge-based player may be an important resource for the firms to resolve apparent trade-offs between environmental and financial performance.

Finally, strategic choice shapes the processes and priorities of firms, and thus allocation of resources – particularly leadership resources – to the cause of environmental performance. Chen, Chang and Lin (2014) found that in Taiwanese small and medium electronic firms, green focused transformational leadership tends to improve the employee green mindfulness and green self-efficacy, which in turn contributes to better environmental performance of the firms.

In this paper, we articulate the view that inter-firm differentials in environmental performance originate in the same set of factors that are known to contribute to inter-firm differentials in competitive performance. This point seems uncontroversial. The bolder and more speculative claim we make is that the capability of firms to achieve strategic fit with their environments may be an important source of heterogeneity that underpins environmental performance. Building on prior research and empirical evidence from a survey of SMEs in China, we postulate that the capability of firms for achieving strategic fit both incrementally to stable environments as well as disruptively to turbulent environments, distract processes and priorities focused on environmental performance. Our findings demonstrate that both productivity growth (incremental adaptation to stable environments) and strategic adaptability (disruptive adaptation to turbulent environments) – which can be classified as two types of equilibrium-seeking strategies – hinder firm's environmental performance. Occasional disruptions of stable environments (using transformational leadership and knowledge sector identification) and stabilization of turbulent environments (using operational agility and developing robust and mature product-market positions) – which can be classified as two types of disequilibrium-seeking

strategies – are the strategies firms may follow to break the apparent trade-offs between environmental performance and competitive performance and to achieve overall positive environmental performance.

2. Literature review

There are two major schools of thought on how firms manage changes and respond to pressures for environmental performance: the adaptation school and the selection school.

2.1 The adaptation school

In the adaptation school, organizations are viewed as striving rationally, or drifting organically, for equilibrium (Demers, 2007). The adaptation school identifies two distinct perspectives on change management. The first is referred to as "strategic choice" perspective (Child, 1972). In this perspective, change is considered as progressive, cumulative and deliberate. This perspective works best in stable contexts, where change occurs in few, if any, dimensions. The second is referred to as "evolutionary" perspective (Nelson and Winter, 1982). This perspective is particularly concerned with dynamic contexts, where change occurs concurrently along many dimensions. Because of this complexity, such change is rather difficult to manage through strategic choice. Accordingly, in such contexts, scholars underplay the deliberate part and put greater emphasis on emergent forces or adaptation through sense-making (Weick, 1969).

Each of the two contexts (stable or dynamic) is further differentiated by the type of specific changes. The type of specific changes can be either incremental (continuous) or radical (discontinuous). Incremental change in the system includes ongoing innovations, refinements, realignments and non-disruptive reorganizations. Radical change is when systems must be completely overhauled because the fundamental way that business is done shifts because of groundbreaking technology, wide-ranging legislation, increasing uncertainty (more surprises and frequent, rapid and unexpected changes) and accelerated change (i.e. the future is less and less connected with the past).

2.1.1 Methods for change management under strategic choice perspective. Under the strategic choice perspective, there are broadly two methods of change management, contingent on the type of specific changes. The first method thrives on equilibrium conditions, while the second method thrives on disequilibrium conditions:

(1) *Change management through productivity growth in a stable context with incremental change.* Highly stable industries with mature characteristics such as the fast food industry do not seek change. In fact, they try to minimize change. When incremental change is implemented, it is often designed by managers or experts and implemented with transactional leadership approaches which tend to be directive, supportive, narrow delegation and achievement-oriented (to reach goals set by management). Efficiency is key, as competition is based on cost and quality and uses extensive operational planning.

(2) *Change management through transformational leadership in a stable context with occasional radical change.* This context calls for transformational theory, especially the targeted variety advocated by Bass (1985) and Tichy and Devanna (1986) with strategy preceding participation. Relatively stable industries often must cope with a major change in a process, product or economic assumption, such as when US universities had to integrate radically new online teaching methodologies while concurrently maintaining face-to-face classes. When these occasional substantial changes are made, they are commissioned by leaders because of the resources at

stake and the cost of mistakes, but there is substantial participation and involvement thereafter because of the extensive organizational learning that must occur. The styles tend to be directive and strategic in making the change, participative in implementing it and inspirational about the change because of its disruptive nature and risk of failure.

2.1.2 Methods for change management under evolutionary perspective. Under the evolutionary perspective as well, there are broadly two methods of change management, contingent on the type of specific changes.

(1) *Change management through operational agility in a dynamic context with incremental changes.* This context calls for complexity theory in which hierarchical leadership takes care of high-level structural issues in the organization as well as operational functions. Adaptation to ongoing changes throughout the organization is delegated downward and little senior-level approval is needed prior to implementation. In these complex contexts, the leader-centric approach becomes ineffective in navigating a labyrinth of intricacies over time. Instead, there is a need to evolve distributed "self-organizing" leadership based on a shared vision. A common tool is the ad hoc or self-managed team to tackle problems, create solutions and spearhead minor initiatives.

(2) *Change management through strategic adaptability in a dynamic context with radical changes*. This context calls for chaos or crisis leadership theory in which leaders are fully in charge and the likely outcome is wholesale organizational change. These dynamic contexts may be a result of either many fundamental product/process shifts, a single shift so major that it affects all areas of business or a crisis that threatens the integrity of the company. Examples include when a new process or product has suddenly made an old way of doing business obsolete; or when the economics of a business drives it to a different country.

While the above four conditions are theoretically discrete, in reality, organizational environments tend to fall on a continuum – some parts of the environment are more stable, while others are more dynamic. Further, some elements experience incremental change, while others experience radical change, at any moment. In more stable parts of the environment, the need for adaptation is rather limited, while in more dynamic parts, the need for adaptation is more salient. When the need for adaptation is rather limited and is continuous or incremental in nature, the leaders tend to focus on productivity growth to drive efficiency. Similarly, when the need for adaptation is rather limited and is punctuated or occasional in nature, the leaders are often able to help organizations respond using a transformational style. On the other hand, when the need for adaptation is high, then operational agility helps organizations to respond to complex but incremental changes, while strategic adaptability aids organizations to adapt to chaotic and radical changes.

2.2 The selection school

Many scholars challenge the underlying assumption of the adaptation school that leaders are able to guide organizational change through growth and development (Starbuck, 1971). Hannan and Freeman (1977) observed that most organizations are too rigid to change because of the pressures of inertia. Moreover, it is very risky for most organizations to adapt to radical changes. As a result, environment selection is often a better explanation than purposive adaptation for the changes observed in populations of organizations. Change is considered difficult and dangerous, whereby organizations are selected by the environment

(Demers, 2007). This alternative view is generally referred to as "adaptation vs selection" debate (Aldrich, 1999). In practice, an organization's performance is usually the joint and dynamic outcome of adaptation and selection effects (Lewin and Volberda, 2011). Empirical research suggests that the power relationship between adaptation and selection tends to vary as a function of the institutional factors (Farjoun, 2010).

According to the neo-institutional theory, organizational responsiveness to the selection pressures from various stakeholders depends on the strength of institutional effects. When the institutional effects are weak, the organizations are less likely to act responsibly with respect to not only environment, but also interests of other stakeholders such as employees, consumers, suppliers and local communities within which they operate (Carroll and Buchholtz, 2000). Conversely, when the institutional effects are strong, the organizations are less likely to adopt pure instrumentality logic and are more likely to develop a holistic view that integrates the lens of appropriateness. In such conditions, they are more likely to pursue and to commit sufficient resources for successful environmental performance.

There are two major types of institutions: environmental and organizational. Based on the strength of these two types of institutions, the firms face different types of selection. In this paper, we consider selection across product-market maturity levels contingent on the strength of environmental institutions, and selection across knowledge-sector identity contingent on the strength of organizational institutions.

2.2.1 Strength of environmental institutions and selection across product-market maturity levels. Environmental institutions comprise formal and informal rules and associated monitoring and sanctioning mechanisms, designed to constrain the instrumentality logic in an organization's behavior. Environmental institutions tend to be weak when the firms operate in the least mature (emerging) product markets. In more mature product markets, environmental institutions tend to strengthen. In emerging product-market domains, the dynamics of externality are fluid – the direction, size and type of the impact on environment are not stabilized and therefore institutionalization is not complete. There is a strong degree of uncertainty in decision-making within a firm: legal rules are unclear, technologies are unproven and means–ends relationships require a considerable degree of guesswork (Macey, 2010). However, in mature product-market domains, institutional arrangements often emerge to fill the incomplete institutionalization for punishing the negative externality and rewarding the positive externality. This may occur through regulatory changes, negotiations with the activist non-government organizations, pressures from various other stakeholders or internal routines. In ossified product-market domains, institutional arrangements emerge to serve as templates for actions that are considered appropriate or legitimate, and "set bounds on rationality by restricting the opportunities and alternatives we perceive and, thereby, increase the probability of certain types of behavior". (North, 1994, p. 94) Concurrently, firms adopt routines, standard operating procedures and other institutions from what are viewed as legitimate models in their regulatory and competitive environments (DiMaggio and Powell, 1983). The executives and employees evolve their own codes for dealing with what they believe to be negative externalities of organizational activities (Simon, 1997).

Thus, when the organizations operate in emerging product-market domains, their routinized decision-making is guided more by the logic of efficiency. But when they operate in mature product-market domains, the logic of legitimacy becomes increasingly more significant. Macey (2010) observes several examples of where the decision-making of the firms became guided by the logic of legitimacy vs that of efficiency. For instance, in one case, firms responded to pollution-concentration standards by building taller smokestacks, dispersing toxic chemicals across greater distances while ignoring production

inefficiencies and lost profits from capture and recycling (Ackerman and Hassler, 1981). In another case, they created "formal safety rules, safety departments, and safety programs" that were necessary to avoid sanction even if there was very little rule enforcement by the regulators (Meyer and Rowan, 1977).

Firms are heterogeneous in their ability to respond to the environmental performance pressures, whether in the emerging or the mature product markets. In emerging product markets, this ability will be contingent on whether the firm has the agility for integrating the environmental performance with operational efficiency. However, in mature product markets, this ability will be contingent more on whether the firm is able to adapt its overall strategic orientation to meet the heightened environmental expectations. Without such strategic adaptability, organizations in its population are more likely to experience internal inertial forces and external risks of natural selection.

2.2.2 Strength of organizational institutions and selection across knowledge-sector identification. Organizational institutions comprise of formal and taken-for-granted cultural frameworks, cognitive schema and principled beliefs, oriented to enable the appropriateness logic in an organization's behavior (Campbell, 2006). Organizational institutions are more likely to be challenged when the organizations identify themselves with the knowledge-sector, as compared to when they do not. When organizations operate in knowledge-based domains, they are more likely to evaluate institutionalized routines through the process of SECI – socialization, externalization, combination and internalization (Nonaka and Takeuchi, 1995). They become socialized with alternative rules and tacit views about existing rules through interactions with broader set of stakeholders and by listening to a broader set of concerns. They also externalize the existing rules through open dialogues (Magnier-Watanabe and Senoo, 2009). This facilitates problem-solving through innovative combination of rules, which the firm can then internalize to achieve greater efficiency. Conversely, when firms operate in traditional domains, they are more likely to take institutional rules for granted, and face institutional and competitive isomorphic pressures that strengthen the routinization and uniformity of cultural understandings (Zucker, 1977).

3. Hypothesis formulation

3.1 Strategic choice hypothesis: productivity growth, transformational leadership and environmental performance

At least since Smith (1776) and Taylor (1911), scholars have noted the dynamics of productivity. When organizations solve problems, they acquire knowledge that can be used to solve similar problems repeatedly in future (Adler *et al.*, 2009). The more successful organizations become in reusing their accumulated knowledge, the more their activities become routinized, i.e. stable, repeated and predictable. Routinization based on the reuse of old knowledge improves efficiency and results in productivity growth, but it also constrains ability to seek and solve new problems. High rates of productivity growth based on doing more of the same make it difficult for the organizations to adapt to changes in their environment. Environmental changes bring new challenges to the organizations and require creation of new knowledge to solve those challenges. Abernathy (1978) referred the trade-off between the efficiency-based productivity and the innovation-based adaptability as the productivity dilemma. He found that in the automobile industry, a firm's economic decline was directly related to its efficiency and productivity efforts. March and Simon (1993) characterized this trade-off in terms of the choice an organization must make between exploitation of existing knowledge and capabilities, and exploration of new knowledge. Exploitation results in efficient performance given the stable conditions in the environment. Exploration enables innovative

adaptation to the changing conditions in the environment. Because of the laws of inertia, firms often have a bias toward exploitation.

Sustainability literature suggests a disproportionate priority on economic efficiency tends to promote unsustainable use of specific materials and requires increasing use of energy to sustain high levels of productivity growth (Stern, 2011). The trade-off between productivity growth and environmental performance is quite evident in China, the fastest-growing economy in the world for the past three decades. The business model of the Chinese firms has been primarily based on the added factor inputs, such as labor, material and capital (Krugman, 1994). This model has shaped historically very high levels of productivity and economic growth, but also meant over-use and over-exploitation of natural resources and destruction of the eco-system. Since 1949, China's economy has grown by 10 times, but the consumption of mineral resources has grown 40 times. In the 1990s, the rate of rise in energy consumption in China was 1.5 times the rate of economic growth. China consumed three times more energy for each dollar of production than the world's average (World Bank, 2014). A major reason for this poor environmental performance of the Chinese firms is a perception that environmental performance is costly (Brock and Evans, 1986). Studies show the efforts by the Chinese government to enforce more stringent environmental performance have a negative influence on the investment and export performance of the Chinese enterprises, because such efforts hinder productivity of exploitative activities (Jaffe *et al.*, 1995).

Green strategies are not necessarily incompatible with high productivity growth. Porter (1991), for instance, observed that a priority on protecting environment can lead to innovation to counteract the cost-escalation. The firm may adopt new technology, find new market opportunities and learn new operational techniques. This, in turn, will break the trade-off between productivity growth and innovative ways of achieving environmental performance and make the firm more competitive in the global market. While in the USA there is evidence for increased adoption of environmental initiatives by leading firms, a significant proportion is just greenwashing – i.e. the firms with poor performance striving to showcase positive performance on environmental management (Delmas and Burbano, 2011). Firms are facing increased demand from many stakeholders for positive environment management, but remain entrenched through inertial internal pressures for exploitation-oriented productivity growth. In the context of lax regulatory environment, these twin pressures encourage firms to persist with their priorities on productivity growth while also striving for positive impression management to maintain legitimacy with environment-conscious stakeholders. Thus, while productivity growth is compatible with the pursuit of green strategies, it may also make firms lax about adaptations for positive environmental performance. Therefore, we hypothesize that:

H1a. Productivity growth is negatively associated with a firm's environmental performance.

While the efficiency imperatives of productivity growth are often associated with transactional leadership, the innovative imperatives of environmental performance tend to be supported by transformational leadership. Contrasting between transformational and transactional leadership, Burns (1978) observed that the former articulates a vision of the future inspiring followers, intellectually stimulates followers and is considerate to individual differences among followers. It is more effective at challenging the institutionalized learning and driving change by creating excitement through use of symbolism and imagery (Bass and Avolio, 1993). Survey-based studies have found that transformational leadership is

associated with greater practice of institutional corporate social responsibility practices (Du *et al.*, 2013). This may be because of two factors.

First, transformational leadership is focused on values, articulating a vision that is both just and in sync with the expectations of various stakeholders, motivating members to transcend their self-interest for the larger vision of the firm (Mendonca, 2001). Qualitative studies show that transformational leadership is more likely to exhibit ethical, or responsible, behaviors, such as protecting and advancing the interests of secondary stakeholders (Angus-Leppan *et al.*, 2010).

Second, transformational leadership is intellectually stimulating and encourages members to challenge old assumptions and reframe complex issues for innovative solutions (Bass, 1997). This encourages greater understanding of the complex interconnections among a firm's behavior, its community and natural environment and its reputation and sustainable performance (Du *et al.*, 2013). In other words, transformational leadership encourages broader scanning of the environment for a broader view of the firm and for more responsible behavior to bridge any negative externalities (Waldman *et al.*, 2006). Therefore we hypothesize:

H1b. Transformational leadership is positively associated with a firm's environmental performance.

3.2 Evolutionary hypothesis: operational agility, strategic adaptability and environmental performance

In contrast to productive organizations, adaptive organizations are more open to innovation and committed to stakeholder responsiveness. Hamel (2013) makes a distinction between two types of adaptability: operational agility and strategic adaptability:

> Operational agility implies an ability to respond quickly to shifts in demand or customer preference within the boundaries of an existing business model [. . .] *Strategic adaptability*, by contrast, refers to a company's capacity to reconfigure its underlying business concept, by dramatically rethinking its core mission, core competencies, core customers, core markets, core value proposition, core eco-system of collaborators, core marketing mix, core technologies, and core organization.

Volkswagen's operational agility is demonstrated by its new MQB manufacturing strategy, which uses modular transverse matrix approach to produce a wide range of vehicles (Audis, Seats, Skodas and VWs) on a small number of platforms. Amazon's strategic adaptability is evidenced by its transformation from a Web-based bookseller, to an online retail platform, to a digital media powerhouse and most recently, to a leader in cloud computing (Hamel, 2013). Operational agility is concerned with adaptation using incremental or minor changes in the behavior of the firm. It allows firms to respond to environmental changes through improvisation, i.e. co-enactment of planning and implementation (Moorman and Miner, 1997). Such responses tend to be timely, rapid and effective (Sethi and Sethi, 1990). Strategic adaptability is concerned with adaptation to revolutionary or fundamental shifts in the behavior of the firm. It enables a firm to create, maintain and realize a configuration for a desired long-term future (Buckley, 1997).

Both features of adaptive organizations – operational agility and strategic adaptability – are associated with the dynamic capability of firms (Teece *et al.*, 1997). Adaptive organizations are able to swiftly explore external opportunities at the operational level and entrepreneurially connect their unique sets of capabilities with external resources at the strategic level. This perspective of adaptability is based on the *plasticity* of organizations, i.e.

"the capacity for an organization to transform its resource and market position to further the pursuit of competitive advantage in a possibly changing environment" (Marino, 2013, p. 1). Adaptation experience supports the development of an organization's dynamic capabilities. It allows the organization to learn new knowledge, which in turn enables it to integrate, extend and reconfigure its resource base (Helfat *et al.*, 2007).

When the firms have the dynamic capability to adapt to the fundamental shifts in the stakeholder expectations by rethinking its core stakeholders, then they may not take the stronger expectations for environmental performance as seriously. They may have an option to pursue alternative business models that target constituents who are not as strong environmental advocates. Conversely, when the firms have the dynamic capability to respond quickly to shifts in stakeholder preferences within the constraints of their current business model, then they are more likely to positively respond to the stakeholder expectations for environmental performance. Therefore, we hypothesize that:

H3. Operational agility is positively associated with a firm's environmental performance.

H4a. Strategic adaptability is negatively associated with a firm's environmental performance.

3.3 Selection through product-market maturity levels and environmental performance

A firm's product-market evolution and maturity at any moment, as indicated by the maturity of its product–portfolio, is linked to the learning that the firm perceives the need for. The product–market tends to follow a three phase cycle (Utterback and Abernathy, 1975). During the first, fluid, phase, the firm is engaged in rapid product innovation, with frequent and substantive changes in the product features. It tends to have diverse, customized designs for the same product, based on the interactions with a variety of channel partners and customer groups. Production processes tend to be inefficient, but flexible. Equipment tends to be general-purpose and labor tends to be highly skilled. The firms are able to adapt to major changes easily at a relatively low cost. The paramount goal is to emerge a product design through timely efforts, before other competitors, that wins customer endorsement and becomes the dominant standard that others must abide by.

In the second, transition phase, firms put diminishing priorities on product innovation. Instead, they seek to undertake a series of process changes, to reinforce or to gain competitive advantage in the dominant successful product design. The paramount goal is to stand out among numerous competitors, by securing a significant market share and production volume, where the firm is a preferred vendor for the customers. Some of the operational processes are automated, creating islands of automation. The firms may adapt to major changes at a moderate cost.

In the third, "specific" phase, firms find limited gains from product, as well as process, innovations. Products are highly standardized and the primary source of competitive advantage improvement is productivity growth through enhanced reliability, quality and reproducibility – i.e. routinization. The firms achieve this routinization by investing in large, efficient, capital-intensive, purpose-built infrastructure, which is mostly automated. The role of labor is primarily to service this infrastructure. The cost of major changes is quite significant. The paramount goal is to survive, as the firms who fail to efficiently routinize or who strive to make imprudent changes erode their advantage and exit.

In summary, adaptive behaviors of firms across the maturity phases of the product market are guided by the selection forces. Firms are more likely to engage in exploratory activities during the fluid phase and in exploitative activities during the specific phase.

During the fluid phase, as the firms are engaged in exploratory activities characterized by a variety of efforts, and play in a fairly small market, their environmental footprint tends to be not only small but also invisible to various constituents. Moreover, the firms enjoy several alternative constituent choices, and can choose to exclude a minority of constituencies who are not only diligent in seeking environmental performance information, but also ready to take an activist role for enforcing environmental performance. In contrast, during the specific phase, as each firm accounts for a fairly large, stable share of a fairly large market, the environmental footprint of each firm is fairly large and visible to various constituencies. The information about the firm's performance on various social and environmental indicators becomes available in a more transparent manner, and there are greater expectations for accountability. It is more difficult and risky for the firms with large shares of large market to try to provide false communication about their environmental performance. Therefore, we hypothesize:

H4b. Product-market maturity is positively associated with firm's environmental performance.

Operational agility efficiently drives incremental adjustments along a repeated exploitative path. In mature product markets, this type of trial-and-error experimentation is distracting and generates diminishing returns (Drnevich and Kriauciunas, 2011), pushing the firms into a deeper and deeper "competency trap" (Levitt and March, 1988). This hinders efforts to recognize and to explore competency enhancing change opportunities, such as those that improve a firm's environmental performance. Conversely, when a firm has early stage product market, operational agility is a positive factor in exploring a range of complex competency-enhancing innovations in firm's product design and other activities, based on the expression of interest from a variety of constituencies. Therefore, product-market maturity is expected to negatively moderate the effectiveness of operational agility:

H5a. Product-market maturity negatively moderates the relationship between operational agility and a firm's environmental performance. The relationship is less positive for the firm's with greater operational agility.

Product-market maturity level influences the "fodder" available for the use of dynamic capability. In this regard, Helfat *et al.* (2007, p. 21) argue that "unlike in standard economic theory, capabilities often have the property that they function less well if they are not used. Capabilities incorporate the knowledge of individuals and teams of how to perform a task or set of tasks. Most knowledge that resides within an organization has the property that it is remembered by doing. Thus to maintain a capability and the knowledge that underpins the capability, an organization may need to use it". Marino (2013) finds that the product market moderates the relationship between adaptive capability and firm's performance. Mature product markets offer more "fodder" for regenerative efforts in terms of a variety of needs

Table I.
Alternative characteristics of an organization at a given moment, based on the type of adaptability and product-market maturity

Mature product market	Adaptive to "disruptive" forces	Insular and not adaptive
Average product market	Knowledgeable, but not adaptive	Adaptive to "complex" forces
	Strategic adaptability	*Operational agility*

for redesign initiatives. Conversely, as Table I shows, when an organization operates in predominantly early stage products, it may be knowledgeable about dynamic processes. Yet, its adaptive process will have a smaller set of potentially relevant alternatives to select from, and therefore firm's environment performance is likely to be suboptimal. Therefore, product-market maturity is expected to positively moderate the effectiveness of strategic adaptability. We thus hypothesize:

H5b. Product-market maturity positively moderates the relationship between strategic adaptability and a firm's environmental performance. The relationship is less negative for the firms with greater strategic adaptability.

3.4 Selection through knowledge-sector identification and environmental performance

The most dynamic firms in the world economy today are not resource-intensive; they are knowledge-intensive, such as software and hardware, biotechnology, communications and finance (Chichilnisky, 2001). These firms identify with the knowledge sector economy, in place of traditional resource-driven identities. Knowledge-based identity, because of its public good nature, makes firms more aware of their interconnectivity with other stakeholders, and more willing to act on creating knowledge and using knowledge individually and collectively for more environmentally sustainable use of privately owned resources (Chichilnisky, 2001) Additionally, the firms in the knowledge sector consume less resources and have lower ecological footprint; thus a firm that identifies with this sector must also seek to decrease environmental damage and improve environmental performance, to gain legitimacy and external endorsement of its identity. A knowledge-based identity is likely to help improve organizational knowledge about the consequences (costs) to the environment of a firm's economic activities (Chichilnisky, 2001). Furthermore, the advantage of the firms having knowledge-based identity resides in brain, rather than in material and machinery, which encourages organizations to embrace values that are sensitive to the impact of their behaviors on the environment and the society (Chichilnisky, 2001). A knowledge-based identity is also likely to encourage firms to pursue a vision based on human creativity and diversity, which in turn might facilitate more cost-effective solutions to the environmental issues. Therefore we hypothesize:

H6.a A firm's knowledge-based identification is positively associated with a firm's environmental performance.

Bass (1985) observes organizational characteristics influence the overall effectiveness of transformational leadership. Knowledge-sector identification tends to instill a bias toward creation of new knowledge, which could include knowledge for improved environmental performance. However, for transformational leadership to foster knowledge creation to realize environmentally-aware present, it is important to offer right internal selection environment. For knowledge-based organizations, the internal selection environment is usually oriented toward keeping the created knowledge proprietary, to motivate creation of new knowledge (Chichilnisky, 2001). Once abstracted into general knowledge, and codified for sharing even within the firm boundaries, it is difficult to limit the diffusion of new knowledge outside the firm boundaries (Boisot, 1998). When the knowledge is kept tacit and concrete to maintain proprietary control, its potential for positive environmental performance is only partly exploited. Thus, transformational leaders, in their attempts to motivate followers to create new knowledge to protect and advance the interests of public,

may inadvertently lower the environmental performance of firms in identifying with the knowledge-sector. A successful approach in such cases is to blend a transactional approach, where firms substitute proprietary and private knowledge with a system of mandatory and negotiable licenses which are traded in the internal and external markets of the organization (Chichilnisky, 2001). In this solution, the knowledge-based firms consider themselves as licensors of the services offered by their products, rather than sellers of the ownership of the products that deliver those services. An example is when the firms sell products that they take back because of environmental concerns at the end of their useful life, for knowledge-based recycling and disposal. Therefore, we hypothesize:

H6b. Knowledge-sector identification negatively moderates the relationship between transformational leadership and a firm's environmental performance. The relationship is less positive for firms higher on transformational leadership.

4. Method

4.1 Survey design

We constructed our measures using scales validated in prior studies. We translated the original scale items into Chinese and then back-translated into English three times by three different bilingual Chinese experts. We piloted both English and Chinese language surveys on 80 senior managers and used the responses to make further modifications in the Chinese language survey.

4.2 Sample and data

We surveyed SMEs firms along the east coast of China through the trainers and administrative officers of local China SMEs administrative organizations. The east coast of China is considered to be "the land of SMEs seeds and buds". In China, firms are considered SMEs if they have fewer than 2,000 employees and less than RMB 300m annual turnover (Li and Rowley, 2008). We followed up on the distributed survey after three days by phone calls. The respondents were given three weeks to return completed surveys in confidential sealed envelopes. At the end of the three weeks, 386 completed surveys were received, giving a response rate of 63.4 per cent.

Of the firms, 96.6 per cent had RMB 300m or less annual turnover. In all, 90 per cent of firms had 500 or fewer employees; 99 per cent had 2,000 or fewer employees. The median age of firms was seven years. While 51 per cent were single-product firms, nearly 6 per cent offered ten or more products. Of the firms, 80 per cent were selling in the domestic market only; but more than 12 per cent generated a fifth or more of their sales from overseas.

Respondents had a median age of 40 years. Of the respondents, 79 per cent were males. About three quarters had a bachelor's degree or higher. About three quarters were c-level executives or owners and another fifth were mid-level managers.

4.3 Dependent variable

Environmental performance (α = 0.87): We used Judge and Douglas (1998) measure, where respondents rated firm's overall environmental performance relative to others in their industry on four five-point objectives over the past 12 months. The four objectives included: complying with environmental regulations, limiting environmental impact beyond compliance, preventing and mitigating environmental crises and educating employees and the public about the environment. Regulatory compliance is a transactional measure of environmental performance – compliance is a formative factor in environmental performance that allows an organization to

avoid the legal penalties. Limiting impact beyond compliance is a transformational measure – a value-based organization uses its values as normative factor in its behaviors. Preventing and mitigating environmental crises is a transformative measure – it reflects operational agility built into the organizational system as a function of the superordinate value-base. Finally, educating employees and the public about the environment is a metaphysical measure – it reflects strategic adaptability of an organization through efforts to develop stakeholder consciousness and responsibility, as a way to manage environmental performance as an ecosystem factor.

4.4 Independent variables

4.4.1 Productivity growth It is a factor score composite of two indices: growth and productivity ($r = 0.41$; $p < 0.01$). Growth index ($\alpha = 0.75$) is the average of the standardized values of reported growth over the past 12 months in (a) employees, (b) sales and (c) profits. Productivity index is logarithmic value of revenue/employees.

4.4.2 Strategic adaptability. It is a factor score composite of two measures: knowledge intensity and adaptability of management system. We used Autio *et al.* (2000) measure of knowledge intensity, asking respondents their degree of agreement on a seven-point scale about three items ($\alpha = 0.69$). A sample item is: There is a strong knowledge component in our products and services. We used Gibson and Birkinshaw (2004) measure of adaptability of management system, asking respondents their degree of agreement on a seven-point scale about three items ($\alpha = 0.81$). A sample item: "Management system in this organization encourages people to challenge outmoded traditions/practices/sacred cows".

4.4.3 Operational agility. We used Pulakos *et al.* (2000) measure for "dealing with changes" ($\alpha = 0.81$), where respondents rated the degree of importance for the firm's leaders on five seven-point items to deal with unpredictable or uncertain operational situations. A sample item: "Readily and easily changing gears in response to unpredictable or unexpected events and circumstances".

4.4.4 Product-market maturity. We used Lumpkin and Dess (2001) measure. Participants reported percentage of firm's revenues accounted by products/services at four lifecycle stages: introduction (I), growth (G), maturity (M) and decline (D). Product-market maturity is a weighted average using the following formula: $1 \times \mathrm{I} + 2 \times \mathrm{G} + 3 \times \mathrm{M} + 4 \times \mathrm{D}$. This is a single continuous stage of product life-cycle measure, where a higher score reflects a firm's average involvement in a later (mature) stage of product life cycle. The sample average is 2.34, indicating a group of firms who are in a maturing growth phase.

4.4.5 Transformational leadership. It is the mean of two measures. The first measure is Waldman *et al.* (2001) charismatic leadership scale ($\alpha = 0.89$), where respondents rate their leaders on seven seven-point items (1 = much worse, 7 = much better). A sample item is: "Compared to other leaders, how well can your leaders provide a vision of what lies ahead?" The second measure is Montoya-Weiss *et al.* (2001) political skill scale ($\alpha = 0.86$), where respondents rate their level of agreement about six seven-point scale items about their ability to connect with people. A sample item: "I usually try to find common ground with others".

4.4.6 Knowledge-sector identification. We asked respondents to answer if their organization identifies itself with the knowledge-sector. About 78 per cent answered in affirmative.

The descriptive statistics are shown in Table II, and the correlations among the dependent and the independent variables are shown in Table III.

Table II.
Correlations among the dependent and the independent variables

	N	Mean	SD	1	2	3	4	5	6	7	8	9	10
Firm age – 1	365	7.28	4.47										
No. of products – 2	314	3.14	6.82	0.04									
No. of employees – 3	378	238	249	0.37**	−0.10								
Ownership – 4	281	59.0	43.5	0.14*	−0.08	0.10							
Environmental performance – 5	379	5.47	0.89	0.10	0.08	−0.01	0.02						
Knowledge identity – 6	380	1.78	0.42	0.06	−0.06	0.04	0.16**	−0.07					
Operational agility – 7	376	5.71	0.76	0.06	−0.04	−0.03	0.05	0.21**	−0.03				
Product-market maturation – 8	370	5.27	0.72	0.07	−0.17**	−0.02	−0.01	−0.23**	−0.25**	0.10			
Transformational leadership – 9	301	2.34	0.48	0.19**	0.10	−0.08	−0.15*	0.51**	−0.06	0.21**	−0.08		
Productivity growth – 10	376	0	1	0.27**	−0.15*	0.06	0.28**	−0.31**	−0.08	0.17**	0.17*	−0.21**	
Strategic adaptability – 11	296	0	1	0.09	0.05	0.02	−0.01	0.30**	−0.06	0.07	0.05	0.32**	−0.13*

Notes: ^<0.10; *$p < 0.05$; **$p < 0.01$

	K-sector identification	Operational agility	Product-market maturity	Transformational leadership	Productivity growth	Strategic adaptability
Environmental performance	−0.08	0.21**	−0.21**	0.54**	−0.31**	0.32**
K−sector identification	1	−0.03	−0.22**	−0.05	−0.09	−0.11^
Operational agility		1	0.10	0.20**	0.22**	0.11^
Product-market maturity	*		1	−0.06	0.15*	0.07
Transformational leadership				1	−0.18**	0.40**
Productivity growth					1	−0.12*

Notes: ^$p < 0.10$; *$p < 0.05$; **$p < 0.01$; valid $N = 257$

Table III.
Correlations among the dependent and the independent variables

5. Findings

We use multiple regression analysis to test our hypotheses. The results are shown in Table IV.

We run three models, each with a different set of adaptation vs selection variables. In model 1, we test the evolutionary hypothesis and the moderating role of product-market maturity. The model explains 26 per cent of inter-firm variance in environmental performance. All the predictions are supported. As hypothesized, strategic adaptability is negatively related with the environmental performance, while operational agility is positively related. Furthermore, product-market maturity is positively related with the environmental performance.

Product-market maturity positively moderates the relationship between strategic adaptability and environmental performance. As shown in Figure 1, for the firms in the most mature (declining) product markets, low levels of strategic adaptability have a smaller positive effect on environmental performance, while high levels of strategic adaptability have a smaller negative effect. Conversely, for the firms in the least mature (emerging) product markets, low levels of strategic adaptability have a larger positive effect on environmental performance, while high levels of strategic adaptability have a larger negative effect.

Additionally, product-market maturity negatively moderates the relationship between operational agility and environmental performance. As shown in Figure 2, for the firms in the most mature (declining) product markets, operational agility has a negative relationship

	Model		
	1	2	3
(Constant)	−1.00 (−0.51)	1.16 (0.78)	−4.91* (−2.01)
Strategic adaptability	−0.63* (−2.41)		−0.45^ (1.75)
Operational agility	1.39** (3.95)		1.14** (3.43)
Product-market maturity	2.08* (2.52)		1.65* (2.16)
Operational agility × product-market maturity	−0.48** (−3.21)		−0.38** (2.77)
Strategic adaptability × product-market maturity	0.37** (3.42)		0.23* (2.16)
Transformational leadership		0.86** (3.07)	1.05** (3.73)
Knowledge−based sector		−0.13 (0.84)	1.40^ (1.71)
Transformational leadership × knowledge−based sector		0.54 (0.67)	0.31* (1.99)
Productivity growth		−0.19** (−4.38)	−0.21** (−4.48)
R square	0.26	0.35	0.45

Notes: ^$p < 0.10$; *$p < 0.05$; **$p < 0.01$; valid $N = 257$

Table IV.
Multiple regression analysis – dependent variable: environmental performance

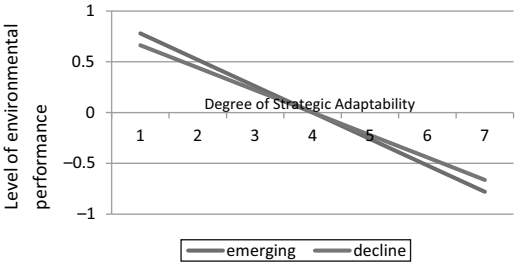

Figure 1.
Product-market maturity moderating the relationship between strategic adaptability and environmental performance

with environmental performance. Conversely, for the firms in least mature (emerging) product markets, operational agility has a positive relationship with environmental performance.

In Model 2, we test the strategic choice hypothesis and the moderating role of knowledge-sector identification. The model explains 35 per cent of the variance in environmental performance. As hypothesized, productivity growth is negatively associated with environmental performance, while transformational leadership is positively associated. However, the effects of neither knowledge-sector identification nor its moderating role are statistically significant.

In Model 3, we test the interactions among evolutionary, strategic choice and selection factors. In this model, we combine the variables in Model 1 and Model 2. The beta estimates of all the variables in Model 1 become smaller, indicating that the sample firms are using strategic choice to guide some of the evolutionary adaptation behaviors and to manage institutional influences on their adaptation. At the same time, beta estimates of both transformational leadership as well as productivity growth become larger. This suggests that both these strategic choice factors play an important role in the adaptability of firms to environmental challenges. Moreover, the coefficient for knowledge-sector identification becomes weakly significant at 0.10 level. The moderating role of knowledge-sector identification on transformational leadership becomes statistically significant at 0.05 level. As shown in Figure 3, for firms identifying with the knowledge-sector, transformational leadership has an added positive impact on environmental performance.

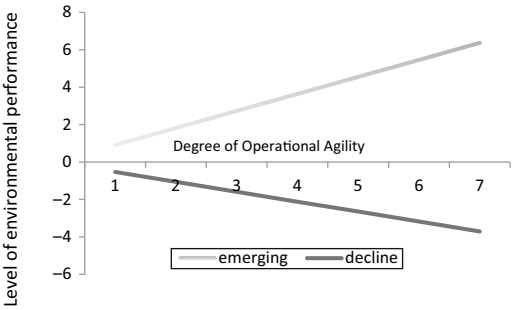

Figure 2.
Product-market maturity moderating the relationship between operational agility and environmental performance

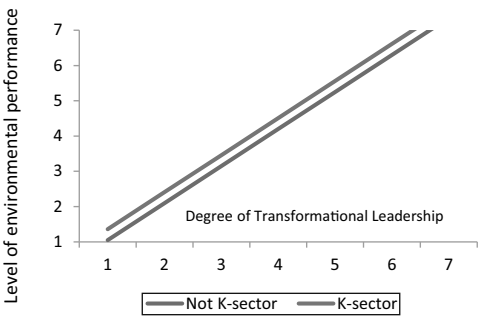

Figure 3.
Knowledge-sector identity supplementing the positive effect of transformational leadership on environmental performance

6. Discussion

Conceptual challenges to the feasibility of organizational alignment with the environment have long contrasted with strategic theories that place primacy on creating a dynamic disequilibrium. Representing one side of the debate has been the strategic fit school of thought, most notably Lawrence and Lorsch's (1967) seminal contingency theory, but there are allied arguments in population ecology (Hannan and Freeman, 1977) and industrial organization (Porter, 1980) theories. Conversely, the entrepreneurial perspective places square emphasis on the other side of the coin: it highlights the benefits of disrupting the static, and of stabilizing the chaos through entrepreneurial innovation and investment into the development of new techniques and technologies (Schumpeter, 1934).

In this paper, we seek a theoretical bridge of this divide by offering a perspective about the role of the strategic fit in shaping the process and outcome of change efforts. We posit that organizations may be heterogeneous in their capability to achieve and sustain strategic fit with their contextual contingencies. This heterogeneity may correlate with differences in productivity growth, strategic adaptability, and maturity of their product-market portfolio.

Furthermore, we postulate two consequences of this heterogeneity. First, organizations that have less strategic fit are more adept at surviving through compensatory fit, in which transformative leadership, operational agility and knowledge-based identity enable the dynamic disequilibrium of strategy formation along dimensions that are orthogonal to immediate, context-embedded contingencies (Gulati and Puranam, 2009). Conversely, strategic fit organizations, though they may be more likely to maintain a state of dynamic equilibrium, are less responsive to the forces that are not strongly correlated with their contextual contingencies.

We have endeavored to illustrate heterogeneous strategic fit by modeling factors accounting for inter-firm differentials in environmental performance, in a sample of Chinese SMEs. A focus on productivity growth is a sign of strategic fit in a stable context with incremental change. Strategic adaptability experience is a sign of strategic fit in a dynamic context with disruptive change. The selection advantage of such dynamic equilibrium is particularly salient under less mature product-market contexts, and where organizational identity is not knowledge-based. In all these scenarios, strategic fit enables firms to achieve and sustain dynamic equilibrium, and survive even with sub-par environmental performance. Conversely, transformative leadership disrupts the contextual stability, and operational agility enables complex connectedness in a dynamic context. The selection advantage of such dynamic disequilibrium behaviors is particularly salient under more mature product-market contexts and with knowledge-based organizational identity. In such scenarios, dynamic disequilibrium behaviors allow firms to achieve superior environmental performance.

6.1 Boundary conditions

In proposing that heterogeneous strategic fit gives rise to two distinct types of selection advantages for firms, it is important to highlight a few boundary conditions of our theory. We suggest that greater strategic fit may strengthen performance along tertiary dimensions, such as environmental performance, when firms are simultaneously working toward dual objectives, one of which is supported by the past operational agility and the other is supported by the current transformational leadership and, therefore, by the persistent knowledge-based identity. Less strategic fit organizations enjoy superior environmental performance when they strive to target nascent product-market opportunities using dual advantages of operational agility and transformational leadership and use their knowledge-based identities to discover and integrate green mindfulness.

Greater strategic fit has precisely the opposite effect. Whereas below-average strategic fit enables a firm to select its activities according to both past and present forces simultaneously (via operational and leadership factors), above-average strategic fit promotes a differentiated approach toward the old and the new. The firm is able to enjoy productivity growth in stable old contexts and to strategically adapt to dynamic new contexts. If social and environmental responsiveness is not as salient as the financial and other forms of performance in either the old or the new contexts, fit firms will lag behind on social and environmental performance outcomes.

6.2 Extensions

The present work explicitly assumes that fit organizations respond to contextually-embedded contingencies. However, the concept of strategic fit as an ongoing process raises the prospect of an interesting reverse-causal story. The contextually-embedded contingencies may serve as a leading indicator of evolving stakeholder expectations for green performance that may, ultimately, manifest in the performance equation of even the fit organizations. For example, the firms that are deeply embedded in the contexts of green mindset are less likely to perceive a trade-off between doing good and doing well. If so, sub-par environmental performance of adaptive organizations may not be an outcome of their high contextual adaptation, but a transitional stage where such organizations are still striving to come to terms with the environmental mindfulness of their stakeholder community. Because the present focus is on strategic fit and its implication for environmental performance, we leave this interesting corollary for future research to develop.

Meyer and Gupta (1994) showed that as different organizations prioritize on a specific measure of performance, inter-firm heterogeneity on that performance measure diminishes over time. This occurs because of both adaptation (learning) as well as selection factors. In addition, institutional factors also encourage isomorphism on the measure held in highest regard (Meyer and Gupta, 1994). Meyer and Gupta (1994) highlight an important "performance paradox": as organizations perform better on the dominant measure, this measure loses its capacity to differentiate among organizations. Therefore, a need emerges for alternative measures. It is possible that the organizations seeking to set themselves apart from their rivals focus on orthogonal measures, so that they are able to maintain at least minimally expected legitimacy on the dominant measure while strategically reallocating resources in new areas that are emerging to be significant.

Eventually, how the leadership of SMEs perceives their overall environment ecosystem may play a deciding role in environmental performance management. According to the recent work of Gupta (2019), an environment ecosystem is comprised six major dimensions-social, human, ecological, economic, national and psychological (SHEENY). The economic dimension is the predominating factor in the modern industrial ecology. As the findings of this investigation demonstrate, a management model focused on systematic strategic adaptation to the predominating competitive industrial ecology puts escalating pressures for polarizing corporate energy into the ecology contaminating path, because of the forced "strategic fit" trade-offs between the competitive performance (and the green natural performance). The social dimension is the dominating factor in the emerging socially minded entrepreneurial economy. Socially-minded entrepreneurial entities are able to not only protect themselves from the formative competitive pressures of the modern industrial ecology, but also form a new normative landscape by targeting stakeholders who are conscious of the ecological dimension, and by educating stakeholders to be psychologically conscious of the ecological dimension. On the other hand, a management model focused on conscious selection of the deciding environmentally conscious community

ecosystem of stakeholder networks as the dominating factor furthers the ecological cost-effectiveness of the entire organization.

By targeting alternative dimensions, such as human well-being, an organization may be able to transcend the need for constant trade-offs between ecological and economic dimensions. For instance, a firm focused on human well-being may decide to prioritize on the economic dimension when working within an economically stressed community, and on the ecological dimension when working in an economically affluent community. Thus, on the overall national criteria, it may be able to promote both economic as well as ecological performance. And on the psychological criteria, it may avoid being an instrument of perpetuating the polarization in economic and ecological performance that already exists as a consequence of the traditional historical path dependencies. By targeting the overall SHEENY criteria in different situations, a firm may sustain sensible strategic management guided by own cultural sense. It may not need to waste energy in being operationally agile or in strategic adaptation – instead it can be operationally robust and strategically alert. We refer this as cultural fit hypothesis.

7. Conclusions

Our objective in this paper is to propose a new perspective on the role of strategic fit on the environmental performance of firms. We substantiate our proposal with empirical analysis using survey data from Chinese SMEs. We wish to emphasize two points in conclusion. First, we should explicitly highlight a fact that is too often neglected in the literature on dynamic capability. Any capability that is adapted to a set of equilibrium conditions is almost certainly less fit when deployed against a different disequilibrium condition. We assert that in certain conditions, low strategic fit facilitates superior response to stakeholder expectations for green performance, whereas greater strategic fit contributes to a state of dynamic equilibrium which may or may not include the green dimension.

Second, our assertions in the paper are rooted in two suppositions: organizations vary in their fit to contextually-embedded contingencies, and this variance may influence the relevance of environmental performance as a selection force. To take the additional step of linking of the differentials in environmental performance to overall performance of firms requires an additional set of assumptions about the alignment of environmental performance and the overall performance of the firm. For instance, in contexts where being green is reinforced constantly through choices of all stakeholders, there should be a close alignment between environmental and overall performance Thus, strategic fit would enable firms to achieve superior environmental performance. On the other hand, when there is a more gradual shift toward green choices by different stakeholders, organizational processes that are not so guided by the logic of fit are more likely to support forward looking behaviors, such as superior environmental management.

Third, a cultural fit perspective may help the firms situationally respond to the economic vs ecological imperatives, with a view to further the overall human well-being. Such a cultural fit perspective can help a firm transcend the trade-off phenomenon, arising from the focus of a firm on either external industrial ecology pressures for prioritizing economic performance as strategic fit vs internal value-based pressures for prioritizing on the ecological performance as compensatory fit. Certainly, more work is required to clarify the conditions of this trans-contingency pathway and therefore to flesh out the performance implications of our thesis.

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