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Barriers to occupational health and safety management in small Brazilian enterprises

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Abstract

Paper aims: To determine main barriers to the implementation of occupational health and safety management systems OHSMS in the context of small Brazilian enterprises from the perspectives of owners/managers, labor auditors, and OHS consultants. **Originality:** Survey with three different perspectives on small Brazilian enterprises. **Research method:** Survey conducted with stakeholders who influence the safety culture in small enterprises to identify the main barriers to the implementation of OHSMS. **Main findings:** Owners/managers tend to blame employees and the government for difficulty in implementing OHSMS, and external actors tend to blame management and resource allocation. Opinions converge on inappropriate management behavior, ineffective information and communication and production prioritization. **Implications for theory and practice:** These barriers should be overcome not only to facilitate the implementation of OHSMS but also to improve the conditions for the management of all small business operations.

Keywords

Work accident. Small business. Occupational Safety.

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1. Introduction

In Brazil, approximately 720,000 occupational accidents occur each year, of which 2,800 are fatal (Brasil, 2015), and entail a cost of approximately 2% of GDP (Tacitano et al., 2014). These acidentes lead to critical interruptions of the operations of companies and affect their operations management (Fan et al., 2014) by decreasing the productivity and quality of operations (Abad et al., 2013), damaging public image and internal climate (Fernández-Muñiz et al., 2009), and increasing the high social and economic charges on victims, employers, and State (Shalini, 2009). Studies on Occupational Health and Safety Management Systems (OHSMS) have proposed methods for increasing organizational efficiency together with the confrontation of this reality of many work acidentes to improve the operations of companies and their interaction with the society (Whysall et al., 2006).

The work environment of small enterprises is more dangerous than that of big companies (Hasle & Limborg, 2006; Sørensen et al., 2007). Moreover, interventions to manage risks in small enterprises are ineffective (Champoux & Brun, 2003) because of few available resources and lack of solid management and awareness of work safety (Zhou et al., 2015). In Europe, for example, 82% of all occupational accidents occur in small enterprises (ILO – International Labour Organization, 2003), which have higher rates of work-related accidents than large companies in all industrial sectors (Fabiano et al., 2004). Efforts to prevent accidents and deaths are extremely relevant because of their relationship to the integrity of the human being and the survival rate of these companies. Small enterprises are essential for job creation and economic growth (Cunningham & Sinclair, 2015) because of their cliente centered and focus on local or regional needs and thus play a vital role in communities (Lortie et al., 2016).

Small enterprises are important to the economy and management of risks in their work environments must be improved to control the high rates of work accidents (Correa & Cardoso Junior, 2007), and safety activities and culture must be initiated in these businesses.

Most studies on OHS deal only with the perspective of owners/managers, neglecting the opinion of other stakeholders involved, to determine existing barriers to the management of OHS in small enterprises (Champoux & Brun, 2003; Masi & Cagno, 2015; Cagno et al., 2016; Nowrouzi et al., 2016). In Brazil, some of these barriers have been individually identified through case studies (Vitoreli et al., 2012; Nadae et al., 2013). Thus far, no systematic study of barriers has been conducted in Brazil. In this regard, such barriers must be investigated to understand difficulties in managing the health and safety of its company employees. This research aims to determine main barriers to the implementation of OHSMS in the context of small Brazilian enterprises and from three different perspectives: owners/managers, labor auditors, and OHS consultants.

Understanding barriers to OHSMS implementation is necessary to adapt proposed models for large enterprises to small enterprises, considering their limitations, such as low budget, limited technical knowledge, and shortage of specialized labor (Cagno et al., 2016). Elucidating such barriers provide a basis to propose adequate systems for management of OHS in small enterprises.

This paper is organized as follows. Section 2 presents the literature background of OHSMS in small enterprises. Section 3 introduces the methodology used to collect data and evaluate barriers. Section 4 discusses the results. Section 5 concludes the research.

2. Theoretical background

Research on operations management demonstrates the importance of proper management of human resources in business and accurate operation of OHS (Zanko & Dawson, 2012). In the same way, companies are increasingly being asked by different stakeholders to manage their OHS issues adequately, systematically, and transparently (Lo et al., 2014).

Robson et al. (2007) defines OHSMS as a set of interrelated elements to establish OHS policy and objectives and to achieve these goals by dividing the system into two groups: compulsory and voluntary. In Brazil, compulsory OHSMSs are defined by regulatory standards, which are required by the State through labor tax auditors, who are responsible for verifying their implementation (Costa, 2008). Voluntary OHSMSs can be developed and implemented by each company according to their interest or through the implementation of certified OHSMSs, such as OHSAS 18001:2007. Small enterprises rarely implement any type of OHSMS and are unaware of any certified systems (Santos et al., 2013), particularly compulsory OHSMS; these companies have vision as bureaucratic obligation and perform segmented implementation without reaching the proposed objectives.

One of the main concerns of operations management researchers is the relationship between adopting safe operations and business efficiency. Abad et al. (2013) studied the relationship between the adoption of certified OHSMS and the productivity of the workforce of Spanish companies; results indicated this management system led to a low rate of work accidents, as predicted, and exerted significant positive effect on labor productivity. Lo et al. (2014) investigated the impact of adopting OHSMS on operational performance and reported that the OHSAS 18001 certification positively influenced the operational performance of safety, sales, labor productivity and profitability; hence, safety management increases the operational performance in both economic and safety components.

2.1. OHSMS in small enterprises

Research on OHS had advanced but literature has focused only large companies in developed countries. In this regard, scholars must investigate small enterprises (Legg et al., 2015) in underdeveloped or developing countries (Zhou et al., 2015) because of their more dangerous environments and less effective OHSMS than large companies (Sørensen et al., 2007).

Small enterprises have limited access to human, economic and technological resources; therefore, tools in literature are difficult to be applied mainly by their owners, who are responsible for their management, consider proper the OHS conditions of their companies (Champoux & Brun, 2003). Employees are subject to great occupational risks, which are defficult to control, when the owners apply management styles that are patriarchal, egocentric, action oriented, and reticent to external regulations and interventions (Hasle & Limborg, 2006).

In general, small enterprises are characterized by personal and informal management by the owner, independence, limited market share, high resource constraints, operation under extreme financial pressure, high start costs,

low profitability, and high potential to failure - short life cycle (Legg et al., 2015). One of the reasons for not implementing OHSMS in small enterprises is the very high investment required; thus, the system is perceived by the owners to have superfluous cost with unattractive benefits (Santos et al., 2013).

The commitment of the owner and the participation of employees are key features for OHSMS implementation; thus, initiatives should be simple, short, clear, related to tangible tasks, and easily adaptable to existing organizational structures because of low qualification and constraints in budget, personnel and time (Nielsen et al., 2015). The presence of intermediaries that lead to OHS culture and the importance of OHSMS are crucial to companies; in this regard, intermediaries become leaders in the implementation of this management system (Cunningham & Sinclair, 2015).

Labor auditors are the most important suppliers of OHS information, and considered an essential intermediary and an initiator of the OHS culture (Olsen & Hasle, 2015). In addition, clients, health and safety professionals (safety engineers, consultants, and others), insurance companies, suppliers, trade associations, chambers of commerce and vocational training institutions are important stakeholders involved in OHS management in small enterprises (Legg et al., 2015).

Scholars have shown great interest in barriers encountered by small enterprises in OHSMS implementation. Masi & Cagno (2015) proposed a framework of 27 barriers to OHSMS intervention in small companies and implemented it to owners/managers of small European manufacturers; the top 10 barriers include the follwing: regulation (rigorous legislation and bureaucracy); resources (inadequate dedication of time and inadequate dedication of financial resources); and information (missing or ineffective communication, missing or ineffective information, lack of knowledge of critical situations of the company by employees, lack of technical support from the authorities, and lack of guidelines). Cagno et al. (2016) found that external consultant support, availability of knowledge of effective interventions, collaborations with business associations and collaboration with other stakeholders are essential for OHSMS implementation.

Safety performance of small enterprises is positively correlated with OHS training provided to employees; moreover, this performance is significantly correlated with the effect of employee participation in OHS decisions and their organizational commitment (Hadjimanolis et al., 2015). In the presence of external safety inspections and improvement of unsafe behavior that rectifies the performance of OHS, other important training variables are documented, workplace is organized, injuries are recorded, workers recognize unsafe conditions, and injured workers have their functions modified (Nowrouzi et al., 2016).

Several studies conducted in Brazil reported barriers encountered by small companies in the implementation of OHSMS. In the metallurgical industry, the support of senior management and the human resource department, and the active participation of employees are decisive; the main difficulties in this management originate from communication failures and lack of OHS indicators and strategic vision for safety (Oliveira et al., 2010). The main impediments for OHSMS implementation are lack of a consistent policies of support for companies, effective participation of other stakeholders, effective cooperation among entrepreneurs, and concern about OHS (Nadae et al., 2013), in addition to lack of experience with management systems, limited number of employees and insufficient financial resources (Vitoreli et al., 2012).

Management systems require the attention and monitoring of their managers, regardless of the company activity branch, and are audited to detect nonconformities, renew certifications, and fulfill goals and objectives (Almeida & Nunes, 2014). In the construction sector, main barriers are lack of knowledge about legislation, safety conditions considered as employees' responsibility, difficulties in complying with strict and complex legislation, and lack of public policies aimed at OHS conditions (Gomes et al., 2016). Table 1 presents a framework with 27 barriers proposed by Masi and Cagno (2015) and verified in Brazilian studies; these barriers will be the structors for this research.

3. Methodology

This survey raises the opinion not only of owners but also of professionals responsible for workplace inspection; in the case of Brazil, these professionals are labor tax auditors (inspection agencies) and OHS consulting services (health and safety professionals), who are typically formally responsible for management of OHS in small enterprises. Data were initially collected through telephone approach. A message was sent by electronic mail to prospective survey participants to direct them to online questionnaire.

Data were collected through a Likert scale questionnaire, which is widely used to measure attitudes, opinions, and preferences (Göb et al., 2007). To be suitable to Brazilian setting, the questionnaire adapted the 27 barriers proposed by Masi & Cagno (2015). The questionnaire used with a Likert scale of five points, where 1 represents no influence of barrier on OHSMS implementation and 5 represents extreme influence. This adaptation was

Table 1. Framework of barriers observed by Brazilian researches.

Barriers observed in Brazil	Reference	Masi & Cagno (2015)
Difficulty in complying with the legislation because they are very strict.	Gomes et al. (2016)	Stringent legal requirements
Difficulty in complying with the legislation for demanding various documents.	Gomes et al. (2016)	Bureaucracy
Lack of consistent business support policy; Lack of public policies focused on OHS conditions in small buildings.	Nadae et al. (2013) Gomes et al. (2016)	Lack of technical support by control authorities
Lack of effective cooperation between entrepreneurs.	Nadae et al. (2013)	Behavior of trade unions
-	-	Difficulties in the interaction with external agencies
Lack of effective participation of other stakeholders.	Nadae et al. (2013)	Lack of guidelines
Lack of effective participation of other stakeholders.	Nadae et al. (2013)	Lack of technical support by consultants
Lack of support from senior management and the area of human resources.	Oliveira et al. (2010)	Systematically wrong behavior of management
Little experience with management systems.	Vitoreli et al. (2012)	Management not adequately skilled
No audits for the detection of nonconformities.	Almeida & Nunes (2014)	Lack of knowledge of the criticalities of the company by management
Lack of follow-up of the managers.	Almeida & Nunes (2014)	Lack of knowledge of the effect of the interventions
Lack of strategic vision for OHS; Little concern about OHS; Safety conditions would be the employees' responsibility;	Oliveira et al. (2010) Nadae et al. (2013) Gomes et al. (2016)	Inadequate OHS policy
Active participation of employees.	Oliveira et al. (2010)	Personnel inadequately involved in OHS activities
-	-	Inadequate dedication of time
Lack of financial resources.	Vitoreli et al. (2012)	Inadequate dedication of economic resources
-	-	Lack of organizational coherence and flexibility
Communication failures.	Oliveira et al. (2010)	Absent or ineffective communication
Lack of performance indicators in OHS; Little knowledge about legislation;	Oliveira et al. (2010) Gomes et al. (2016)	Absent or ineffective information
Non-definition of OHS as one of the organization's strategic objectives.	Oliveira et al. (2010)	Prioritization of production over safety
-	-	Difficulty in planning the OHS activities
-	-	Difficulty in obtaining authorizations by management
Active participation of employees.	Oliveira et al. (2010)	Systematically wrong behavior of personnel
-	-	Personnel not adequately skilled
-	-	Lack of knowledge of the criticalities of the company by workers
Employees without commitment;	Oliveira et al. (2010)	Lack of awareness of OHS relevance by workers
Lack of available employees;	Vitoreli et al. (2012)	Lack of technical resources
Lack of performance indicators in OHS;	Oliveira et al. (2010)	Absent or ineffective information collection system

Framework relates the barriers observed in Brazilian researches with the proposed by Masi & Cagno (2015).

applied to avoid the creation of a new questionnaire, which completely differs from existing one and complicates the validation and comparison of the results with current literature (Guldenmund, 2007). In addition to their perception of barriers, respondents were characterized by asking about their level of education, area of expertise, time of experience, and number of employees and activity area of the company.

The survey was carried out in the region of Bauru, São Paulo state in the first half of 2017. The region was chosen due to the technical conditions for research execution and the economic importance of this region, mainly in the industrial and agricultural area, to the state and to the country (Ross, 2009). A total of 180 small enterprises, 68 labor auditors, and 15 OHS consultants were contacted to participate. Only 38 owners, 15 auditors, and 3 consultants responded, representing a response rate of 20%.

Data were analyzed separately for the internal stakeholders of small enterprises (managing owners) and for the external stakeholders (auditors and consultants). For the two groups, the mean and the standard deviation of the scores for each barriers were determined. Ten barriers with the highest average were selected for each group. The results of the two analyses were compared with each other and with those of other surveys.

4. Results and discussion

According to Table 2, the owners who participated in the study have high level of education; this characteristic converges with the results obtained by Sebrae (Serviço Brasileiro de Apoio às Micro e Pequenas Empresas, 2015), who verified a significant increase in the education level of Brazilian entrepreneurs of small businesses. Bonafede et al. (2016) found that in Italy, most employers of small enterprises had a low level of education; this situation makes it difficult to implement OHSMS. Olsen & Hasle (2015) pointed out that low education level is a barrier to participation of awareness actions on OHS.

According to Table 3, the survey was mainly carried out by enterprises from the footwear and metallurgy sectors. The footwear, metallurgical, and construction industries are sectors with high rates of work accidents (Zhou et al., 2015) and have been the subject of OHS management studies in Brazil (Oliveira et al., 2010; Vitoreli et al., 2012; Almeida & Nunes, 2014; Nadae et al., 2013; Gomes et al., 2016). The studied enterprises have an average of 28 employees. Bonafede et al. (2016) reported that microenterprises with up to 10 employees show little interest in participation in research on this subject because they are not aware of the importance of OHS area or they neglect it. The companies operated for an average of 17 years and thus have a good understanding of the market and the difficulties in operations management.

The external stakeholders of the companies have an average of 8 years of experience, and the area of expertise of these professionals was quite varied (Table 4). The diferences in the areas of their study are due to the multidisciplinary characteristics of Brazilian labor inspection. The unique characteristic on this country should be studied to obtain better conclusions about its effects.

Table 2. Educational level of owners.

Elementary school	High school	University graduate	Postgraduate
5.3%	36.8%	44.7%	13.2%

Table 3. Activity area of the company.

Food	Footwear	Construction	Metallurgy	Others
2.6%	52.6%	7.9%	28.9%	7.9%

Table 4. Labor auditors and OHS consultants area of expertise.

Law	Engineer	Medical area	Others
47.6%	19.1%	23.8%	9.5%

4.1. Barriers to OHS management analysis

Table 5 shows the two groups of stakeholders and the averages and standard deviation (in parenthesis) of each barrier. Each barrier has an identifier that will facilitate the discussion of the results (B1 represents barrier 1, B2 represents the barrier 2, and so on).

4.2. Internal stakeholders

For the owners group, the 10 barriers high mean are: (B15) Systematically wrong behavior of personnel; (B21) Stringent legal requirements; (B6) Personnel inadequately involved in OHS activities; (B22) Bureaucracy; (B20) Absent or ineffective information collection system; (B1) Systematically wrong behavior of management; (B18) Lack of awareness of OHS relevance by workers; (B11) Absent or ineffective information; (B10) Absent or ineffective communication; and (B12) Prioritization of production over safety.

Most of the main barriers, in the view of the owners, are related to the behavior of employees; for example, the owners considered the systematically inadequate behavior (B15), the inadequate involvement in OHS activities

Table 5. Mean and standard deviation of responses.

Barriers	Owners	Auditors and Consultants
B1 - Systematically wrong behavior of management	3.47 (1.18)	4.29 (0.96)
B2 - Management not adequately skilled	3.24 (1.28)	3.81 (1.08)
B3 - Lack of knowledge of the criticalities of the company by management	3.34 (1.17)	4.00 (1.22)
B4 - Lack of knowledge of the effect of the interventions	3.18 (1.04)	4.00 (1.05)
B5 - Inadequate OHS policy	3.26 (1.20)	4.00 (1.00)
B6 - Personnel inadequately involved in OHS activities	3.55 (1.18)	3.95 (0.92)
B7 - Inadequate dedication of time	3.08 (1.05)	3.90 (0.94)
B8 - Inadequate dedication of economic resources	3.24 (1.02)	4.05 (1.07)
B9 - Lack of organizational coherence and flexibility	3.16 (1.08)	4.19 (0.81)
B10 - Absent or ineffective communication	3.42 (1.22)	4.00 (0.84)
B11 - Absent or ineffective information	3.42 (1.20)	4.09 (1.09)
B12 - Prioritization of production over safety	3.39 (1.28)	4.33 (0.91)
B13 - Difficulty in planning the OHS activities	3.18 (1.16)	3.95 (0.92)
B14 - Difficulty in obtaining authorizations by management	3.34 (1.32)	4.29 (1.10)
B15 - Systematically wrong behavior of personnel	3.68 (0.96)	3.86 (0.96)
B16 - Personnel not adequately skilled	3.29 (1.06)	3.81 (1.03)
B17 - Lack of knowledge of the criticalities of the company by workers	3.29 (1.04)	3.76 (1.04)
B18 - Lack of awareness of OHS relevance by workers	3.42 (1.18)	3.76 (1.04)
B19 - Lack of technical resources	3.34 (1.10)	4.19 (0.93)
B20 - Absent or ineffective information collection system	3.47 (1.06)	3.52 (1.03)
B21 - Stringent legal requirements	3.63 (1.05)	3.24 (1.34)
B22 - Bureaucracy	3.50 (0.98)	3.38 (1.32)
B23 - Lack of technical support by control authorities	3.26 (1.15)	3.19 (1.17)
B24 - Behavior of trade unions	2.89 (1.20)	2.95 (1.40)
B25 - Difficulties in the interaction with external agencies	3.03 (1.03)	3.09 (1.04)
B26 - Lack of guidelines	3.24 (1.12)	3.33 (1.28)
B27 - Lack of technical support by consultants	3.34 (1.34)	3.62 (1.16)

Mean and standard deviation (in parenthesis) of the scores obtained for each barrier in the survey with the owners/managers of small enterprises and with the OHS consultants and the labor tax auditors.

(B6), and the lack of awareness of the relevance of OHS by their employees (B18) as relevant barriers that make OHSMS implementation difficult. According to Oliveira et al. (2010), employees do not respect rules, especially regarding the use of safety equipment and procedures, despite that their active participation is needed in the OHSMS success. Nowrouzi et al. (2016) found that in OHSMS, employees should recognize unsafe conditions and communicate them for effective management.

Nielsen et al. (2015) indicated that management support and employee participation are the main characteristics of an effective problem-solving process; in this regard, engagement of employees is essential to change the safety culture of companies. The need to raise employees' resistance to change awareness and low professional qualification are barriers observed; however, small enterprise owners commonly attribute difficulties in managing OHS exclusively to their employees (Hasle et al., 2009). The systematically inadequate behavior (B15) and inadequate involvement of employees in OHS activities (B6) obtained the first and third highest averages in the context of owners. This finding confirms that owners typically hold employees accountable for the company's OHS (Hasle & Limborg, 2006) and for their own safety (Champoux & Brun, 2003).

The two other OHSMS barriers commonly observed are related to government requirements and are highly relevant for owners. Rigorous legislation (B21) and bureaucracy (B22) obtained the second and fourth highest averages. Gomes et al. (2016) reported that the high level of requirement by the legislation and the large amount of documents are barriers to OHS management. Regulatory bodies in the OHS area usually consult large companies only when drafting regulations, norms, and laws, neglecting the opinion of small enterprises; as such, these regulations do not meet the needs of small companies (Masi & Cagno, 2015).

If missing or ineffective information barrier is considered important for the three stakeholders surveyed, then lack of and ineffective information collection systems (B20) are an important barrier to owners. Oliveira et al. (2010) verified that the lack of OHS performance indicators is a barrier in the metallurgical sector; the lack of adequate mechanisms for the collection of OHS data makes it difficult to manage this operation in small companies (Cagno et al., 2016).

4.3. External stakeholders

For auditors and consultants, the top 10 principal barriers are: (B12) Prioritization of production over safety; (B1) Systematically wrong behavior of management; (B14) Difficulty in obtaining authorizations by management; (B9) Lack of organizational coherence and flexibility; (B19) Lack of technical resources; (B11) Absent or ineffective information; (B8) Inadequate dedication of economic resources; (B10) Absent or ineffective communication; (B5) Inadequate OHS policy; and (B4) Lack of knowledge of the effect of the interventions.

For the owners, the main barriers to OHSMS implementation are employee behavior and the way the government deals with this issue; by contrast, external stakeholders understand that the main barriers are related to the OHS management of small businesses. Hence, the difficulty in obtaining authorizations (B14), lack of organizational coherence and flexibility (B9), and lack of knowledge by management of the OHS interventions effects (B4) are the main barriers to OHS management based ont the opinions of the auditors and consultants.

Difficulty in obtaining authorizations by management has not been investigated in any study conducted in Brazil and thus should be the focus in future research. Cagno et al. (2016) reported that this parameter is one of the main barriers to OHS management in Europe. Thus far, the lack of organizational coherence and flexibility has not been studied yet in Brazilian context. However, Nowrouzi et al. (2016) found that OHS management is difficult when the workplace is not organized. In the construction sector, Almeida & Nunes (2014) reported that the barriers are lack of knowledge of the effects of OHS interventions, lack of follow-up by managers of these interventions, and unsafe behavior in the workplace.

External stakeholders understand that factors related to the allocation of technical and financial resources, in addition to management-related factors, are relevant barriers to OHSMS. Cagno et al. (2016) and Nowrouzi et al. (2016) pointed out that lack of technical resources or a specific technical team for OHS area is an important OHSMS barrier because of the lack of tools to support OHS interventions or the lack of documented training for employees. Other studies indicated that lack of financial resources is the main barrier to OHS management due to financial constraints, misallocation of scarce existing resources and high cost of OHSMS (Masi & Cagno 2015). This barrier is also considered highly relevant for all intermediaries involved in the management (Cunningham & Sinclair, 2015) and a special challenge due to budget constraint (Champoux & Brun, 2003; Zhou et al., 2015) or difficulty in making the owner manager aware of the need to direct resources to OHS (Nielsen et al., 2015).

Another highly relevant barrier to external stakeholders is inadequate OHS policy (B5), which has a strong relationship to management and resource barriers. This finding was also observed by Oliveira et al. (2010), who reported that focusing only on compliance with legislation, not defining the OHS area as one of the strategic objectives of the company, and the absence of strategic vision for OHS are barriers to its management.

4.4. Intersection of perspectives

The results of the two groups were compared. The intersection of the results indicates that among the top 10 barriers with the highest mean, the four barriers were repeatedly observed: (B1) Systematically wrong behavior of management; (B11) Absent or ineffective information; (B10) Absent or ineffective communication; and (B12) Prioritization of production over safety.

Systematically inadequate OHS behavior by management obtained the sixth highest average for owners and the second highest averages for consultants and auditors. Oliveira et al. (2010) verified lack of systemic vision in the OHSMS implantation and the low commitment of top administration in this implantation as barriers. Inadequate management behavior reflects on employee behavior and lack of adequate OHS sector management mainly due to lack of leaders in this fields (Cunningham & Sinclair, 2015); moreover, the owner/manager, who is the main manager of the small business, is the dominant stakeholder in relation to any management systems (Hasle & Limborg, 2006).

The absence of information or its ineffectiveness obtained the eighth highest average for owners and the sixth for consultants and auditors. Oliveira et al. (2010) verified lack of OHS performance indicators and company data as barriers. Gomes et al. (2016) observed lack of knowledge about the legislation as limiter for OHS management. Masi & Cagno (2015) and Nowrouzi et al. (2016) also reported that this parameter is a top barrier. Hadjimanolis et al. (2015) proved the positive relationship of safety information to OHS performance; the main causes of this barrier are the isolation of the owner/manager and lack of knowledge of the risks of the company (Champoux & Brun, 2003).

In addition to the absence of information, the absence or ineffectiveness of communication obtained the ninth highest mean for owners and the eighth for consultants and auditors. Oliveira et al. (2010) verified lack of communication between management and employees as barrier. Masi & Cagno (2015) and Cagno et al. (2016) also identified this parameter as one of the main barriers to OHSMS.

Another relevant barrier by the three stakeholders is the prioritization of production over safety, which obtained the 10th largest mean for owners and the first for consultants and auditors. Sinclair & Cunningham (2014) also found that the non-definition of OHS as one of the strategic objectives of the organization hinders the existence of OHSMS in small companies and the employees' perception of the company's stance on OHS (Hadjimanolis et al., 2015).

Table 6 shows a framework comparing the diferent perspectives of the main barriers to OHSMS implementation in small enterprises according to the perspectiver of the two groups of stakeholders. The proposed framework presents a clear difference of the perspective between the surveyed groups. The internal stakeholders understand employee behavior and government requirements as the main barriers; meanwhile, external stakeholders understand lack of resources and OHS management as the main barriers. Both groups agree on the lack of information and communication and the management behavior as significant barriers.

Table 6. Framework comparing main barriers according the stakeholder.

Internal stakeholders	Intersection of perspectives	External stakeholders
Employees behavior (B6, B15 and B18) Government requirements (B21 and B22)	Management behavior (B1 and B12) Lack of information and communication (B10 and B11)	OHS management (B4, B5, B9 and B14) Technical and financial resources allocation (B8 and B19)

Absentee and ineffective information collection systems (B20) is a important barrier just to internal stakeholders, but is related to lack of information and communication.

5. Conclusion

Occupational health and safety conditions in Brazilian enterprises can be characterized by the high rates of work-related accidents reported in official statistics. These conditions undermine corporate performance, destruct company images, and incur high social and financial costs. These indices are only a reflection of the poor OHS management and the lack of public policies aimed at this sector; this situation is even worse in small enterprises mainly due to their financial, technical, and personal constraints.

Improved OHS management is necessary to address the poor workplace conditions of small enterprises, but its effective implementation faces several barriers. These barriers should be identified to be overcome. Owner/managers tend to blame employees and government for difficulty in implementing OHSMS and perceive systematically inadequate behavior of employees, strict legislation, bureaucracy, inadequate employee involvement in OHS activities, and lack of awareness of OHS relevance by employees as main barriers. External stakeholders tend to blame management and resource allocation for this difficulty; their perceived main barriers are difficulty in obtaining authorizations, lack of organizational coherence and flexibility, lack of technical resources, inadequate dedication of financial resources, inadequate OHS policy, and lack of knowledge about the effects of OHS interventions by management.

The two ways of identifying difficulties in OHSMS implementation in small Brazilian enterprises are already predicted by previous research or by the position occupied by each of the stakeholders in OHS management. However, the important result of this study is the points of convergence of the opinions because this intersection presents the barriers that are consensus and should have high priority in the interventions to implement any OHSMS in small enterprises. The main barriers perceived by the three stakeholders are systematically inadequate OHS behavior by management, absent or ineffective information, absent or ineffective communication, and prioritization of production over safety. Although these barriers have been observed in several studies, they must be further investigated. Management behavior and prioritization of production, even without safety assurance, reflect the lack of information of owners about OHS. Therefore, raising awareness policies, improvement of government auditing, and increasing the qualification of OHS consultants to carry the information to these companies are necessary attitudes to confront the three barriers. Once OHS information is spread, communication between employers and employees and between enterprises and external stakeholders would be greatly facilitated, allowing the elimination of the other important barriers to OHSMS implementation.

The main barriers identified in this study should be overcome while seeking to address all other barriers presented. Resolving such barriers will not only facilitate the implementation of OHSMS but will also improve the working environment conditions and the management of other operation issues, such as quality and environment to optimize the results for small Brazilian businesses. These barriers should be considered when adapting models in literature for large enterprises to propose adequate systems for management of OHS in small enterprises.

The main limitations of this research are as follows: limited territorial coverage, which is mainly due to budget constraints; prioritization of economic sectors with high rates of industrial accidents, such as in construction, metallurgy, and footwear industries, failing to address the trade and services sectors; and the limited sample size of survey respondents due to budget and time constraints.

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