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The maturity of using the organization's relational intelligence in the processes of building relational capital: a smart organization example

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Abstract *The Smart World is a specific operational environment that encompasses, with its sophisticated techno-technological, ecological, social, and organizational requirements, various entities, systems, and things, including socially and environmentally aware people and their cognitive thinking. This dynamic technological, social, and cultural development and the solutions implemented in the companies that it drives are resulting in changing management paradigms, new business models, and the development of new types of organizations. One of these is the SMART organization, which can provide a real benchmark for the development processes of other organizations. The basis of its effective functioning is relational intelligence, which contributes to building and utilizing the right relational capital of the organization. Given the above, the aim of the study was to identify the essence of the areas and forms of impact of relational intelligence (RI) on selected elements of relational capital (RC), as well as to attempt to assess the maturity of the application of RI in the practice of enterprises using the example of the SMART organization.*
In order to realize the set objectives, a survey was conducted among smart enterprises operating in Poland (N=327). The research revealed the types of relationships established by smart organizations, assessed their relational capital, and looked at the role of relational intelligence in the process of building RC.
The author's model of relational intelligence is proposed; it explores how relational intelligence (based on emotional and ethical capacities) can guide leadership behavior in interactions, helping leaders deal with complex ethical and cultural dilemmas and make balanced and responsible decisions.
The authors conclude that relational intelligence can support global leaders in addressing leadership challenges, leading them to interact appropriately across boundaries and build sustainable and trusting relationships with different stakeholders. The research findings collected have helped to take a first step towards a better understanding of the importance and maturity of the RI of smart organizations in their relationships with different types of stakeholders in this group of companies. The visualization of this data on the Relational Intelligence Maturity Map indicates, on the one hand, the basis for the success of the studied group of companies (relationships with high and fairly high levels of IRI activation) and, on the other hand, serves as an inspiration for other organizations in terms of what kind of relationships to develop, as well as why, where, and how to activate their RI more strongly in order to strengthen their RC.

Keywords organizational intelligence, relational intelligence, smart organization, Smart World

INTRODUCTION

Smart World is a specific operating environment that encompasses with its sophisticated techno-technological, ecological, social, and organizational requirements various entities, systems, and things, including physical objects, cyber services, socially and environmentally aware people, and their cognitive thinking. This hyperspace, due to making our lives more and more effective, efficient, convenient, responsible, and conscious, is today becoming the basic architecture of a system of effective market activities (Adamik et al., 2023). However, it is significantly changing the way individuals behave, think, work, and develop not only as individuals but also as individual organizations, industries, entire economies, and societies (Qin et al., 2016; Benešová & Tupa, 2017; Mazali, 2017). The dynamic technological, social, and cultural developments, and the solutions implemented in companies in connection with them, result in changing management paradigms, new business models and the development of new types of organizations. One of these is the SMART organization, which in a Smart World can provide a benchmark for the development processes of other organizations.

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By its very nature, an intelligent organization is based on knowledge and new technologies, engages in diverse inter-organizational networks, adapts dynamically to new forms and organizational practices, and learns and makes effective use of its resource potential and ability to create and exploit opportunities offered by the environment. The cornerstone of its effective functioning is its accumulated relational capital (RC). This capital can be accumulated efficiently if the organization has the appropriate organizational intelligence (OI), which is the ability to perceive, understand, interpret, and act effectively, and to respond to complex situations, events, and market signals (Adamik, 2021). OI consists of different sub-intelligences. In smart organizations, one type of intelligence, relational intelligence (RI), seems to play a special role. This type of intelligence supports the accumulation of individual RC elements in various ways through the organization's ability to effectively and fully engage in collaborative relationships and to communicate and interact with stakeholders from different environments (Pless & Maak, 2005). Unfortunately, it is still relatively under-recognized, under-researched, and under-utilized, which has been identified as a significant research gap. Against this background, the aim of the study was to identify the nature, areas, and forms of RI's impact on selected elements of RC, and to attempt to assess the maturity of RI's application in business practice, using SMART organizations as an example. In order to achieve the above objectives, the first stage of the analysis involved a review of the literature on managing organizations in the Smart World environment, with a focus on the specifics of the operation of smart organizations. The basis for the analysis was the recognition of the growing importance of organizational intelligence (OI) in its functioning, as well as one of its elements: relational intelligence (RI). In the next step of the research, by recognizing the specificity and importance of RI, its influence on the processes of building RC in contemporary organizations was highlighted. In order to identify and assess the nature of this influence, an original methodology was proposed and based on it, empirical research was conducted in a group of smart organizations. The results of the research allowed the identification of the means and maturity of conscious use of RI in the processes of building RC in the studied companies. The data collected in the final step of the research process served as a basis for recommendations and potential inspiration for both academics and business practitioners interested in supporting the development of organizations and their RC in the Smart World.

BACKGROUND

The nature and key success factors of a smart organization

The smart organization is one of the more interesting types of so-called future organizations. It is often confused with the so-called smart factory, and this is a big mistake. A smart factory, by its very nature, is a self-controlling and self-adapting socio-technical system that deliberately assists human resources and machines in performing their production tasks, relying on elements of the cyber-physical system and the Internet of Things. With these, it carries out its activities efficiently, such as the control of the production process or the maintenance of machines and equipment. Besides, it integrates them at all levels of production resources by means of sensors, actuators, machines, equipment, robots, and conveyors, for instance. This guarantees good quality products at optimal operating costs (Kalsoom et al., 2021). Today, the smart factory is moving from the formula of classic automation to the level of a connected and resilient system. In doing so, it establishes a constant stream of data from connected production systems and operations in order to learn and acclimatize to changing requirements. It assimilates data regarding human, physical, and operational resources to digitize operations, production, inventory tracking, and other activities in connected production systems. The main objective of smart factories is therefore the use of appropriate engineering procedures and intelligent production systems by production facilities (Kalsoom et al., 2021).

The smart organization is a much broader phenomenon (Adamik et al., 2023). It is the so-called intelligent organization, which is a higher form of learning organization (Mikuła & Ziębicki, 2000; Thannhuber, 2005). This organization operates in the "knowledge environment" it has created, the so-called infosphere, which goes beyond its purely technical activities. It is not only a collection of ICT hardware and software, but also of human capital, relationships, structured data, and information that people have direct access to in their working environment and can use efficiently (Carley, 2001; Adamczewski, 2016). In this way, its intelligent way of operating stems from the way it acquires, develops, and uses knowledge in the broadest sense. Knowledge, in turn, is an integrated resource for it, combining efficiently the knowledge of the human resources functioning within it as well as organizational knowledge in terms of effective environmental sustainability and the use of the available support of the available technological platform. The productivity growth of smart organizations is a consequence of the available knowledge and the resulting organizational changes that enable the creation and exploitation of various types of innovation, including technological innovation. Technologies themselves are only part of this process. Nowadays, being smart increasingly obliges one to be more (Adamik, 2021) than just oriented towards the creation and implementation of proactive and innovative

technological solutions. These solutions must shape increasingly qualitatively better and at the same time more humane and environmentally sustainable social and economic operating conditions. They are to create a consciously integrated cyber-physical-social hyperspace using comprehensive interconnectedness, physical perceptual intelligence, cyber-interactions, social correlation, and cognitive thinking in all aspects of everyday life (Berawi, 2018; Iapichino et al., 2018; Jermsittiparsert, 2020). This requires the resource potential of multiple partners working together efficiently. Consequently, smart organizations are also sustainable, socially responsible, and at the same time open to extensive cooperation. Therefore, smart growth will only be achieved by those organizations that consciously adopt new forms of working together with new technologies (Al-Kasasbeh et al., 2016; Iapichino et al., 2018; Mohamed, 2018).

The basis for the effectiveness of a smart organization is the potential hidden in its human capital. It is their knowledge, experience, intuition, and attitudes that generate relationships and the resulting opportunities to activate further elements of the competitive potential of these organizations. They are the generators of organizational intelligence (Adamik, 2021), giving rise to the key contemporary skills of perceiving relationships and analogies between different situations and imagining new ones (Mikuła, 2007). They make the smart organization essentially adaptive: dynamically adapting to new organizational forms and practices, as well as entrepreneurial ones, as it efficiently seeks to make effective use of the capabilities available to it to create and exploit market opportunities. As a result, it is characterized by variable operating boundaries and an agile organizational structure (Calin et al., 2015). Thanks to them, it is both flexible and critical, and is able to realize its goals not only through conscious generation, but also through proper selection of information available not only from its own experience but also that of others, as well as effectively translating it into professional knowledge and the ability to effectively modify its organizational behavior (including personnel or communication processes, implementation of appropriate internal structures, creation of conditions for dissemination and use of accumulated knowledge, selection and development of resources, creation of new technological solutions, products, services, etc.). Hence, smart organizations are innovative, competitive organizations efficiently moving in the environment of extensive ICT networks (and their favorite technological platform is most often the internet). They effectively implement numerous operational processes in a virtual manner, but also partner organizations; they enable relational organizations to efficiently coordinate and integrate in a balanced way with many, often very diverse, business partners (Filos, 2006; Adamczewski, 2016).

Viewed in this way, the smart organization is increasingly recognized as a metaphor for a never-ending process of organizational improvement in structure and modus operandi, implemented through the methodical acquisition and application of knowledge in order to survive and continue to grow in a sustainable manner (Ma et al., 2005; Adamik, 2020). At the same time, it is also an example of business networking, whose openness to collaboration is considered one of the most important business skills of Industry 4.0 (Adamik & Sikora-Fernandez, 2021). By attempting a certain systematization and prioritization of the key characteristics for the development of smart organizations (Figure 1), one can see the **strategic role of relational aspects in their development**. It seems that they are stimulators and catalysts for the development of many other strategic characteristics of the competitive potential of these organizations, thanks to **relational capabilities (the basis of Relational Capital).** Smart organizations are not only more adaptive and entrepreneurial than other organizations, but also more flexible and critical, and thus also sustainable and competitive.

Relationships between relational intelligence and the relational capital of the organization

A study of the literature shows that organizational intelligence (OI) in the SMART WORLD, is increasingly responsible for the quality of the relational capital (RC) developed by an organization. In a special way, this fact applies to smart organizations. It supports the processes of its proper selection, development, and exploitation. Organizational intelligence is nowadays regarded as a set of individual characteristics of an organization giving it the capacity to perceive facts and the ability to create its own knowledge resources necessary for the realization of its goals in its own way (Bratianu et al., 2006). It is also related to the ability to perceive, understand, and interpret complex situations, events, and market signals, and to act and respond effectively to them. It therefore often refers not only to an organization's ability to gather knowledge related to its business purpose, but also to interpret that knowledge, develop it, use it, share it, as well as to reflect on it, learn from it, and act effectively. It can therefore be shaped in many areas of the organization, at different levels of the organization, for different purposes and in different ways. Organizational intelligence, by its very nature, is therefore a rather elaborate construct and consists of many different components (Adamik et al., 2023; Adamik, 2021). Among other things, it helps organizations to understand the relationships that guide their activities by identifying and understanding the needs of communities that are important to the organization, helps to organize staff workflows, prepare communication patterns and mechanisms for collaboration with different types of partners, both internal and external. One type of organizational intelligence, **relational intelligence** (RI) (Pless & Maak, 2005) seems to play a special role in the processes discussed in this paper. It is defined in the literature as the

ability of an entity to engage effectively and respectfully in relationships, including the ability to collaborate, communicate, and interact with people and stakeholders from different backgrounds, industries, sectors, countries, and cultures and with different interests, located both inside and outside of the organization, as well as collaborating at a distance. It is a specific combination of emotional and ethical skills that allows you to understand and critically reflect on your own and others' emotions, values, interests, and requirements in order to efficiently use the information gained to guide people's actions. The capabilities of the smart organization in the above regard determine significantly the relational capital it has developed; the quality of relational capital is indicative of the relational intelligence as well as the intelligence level of the organization in general.

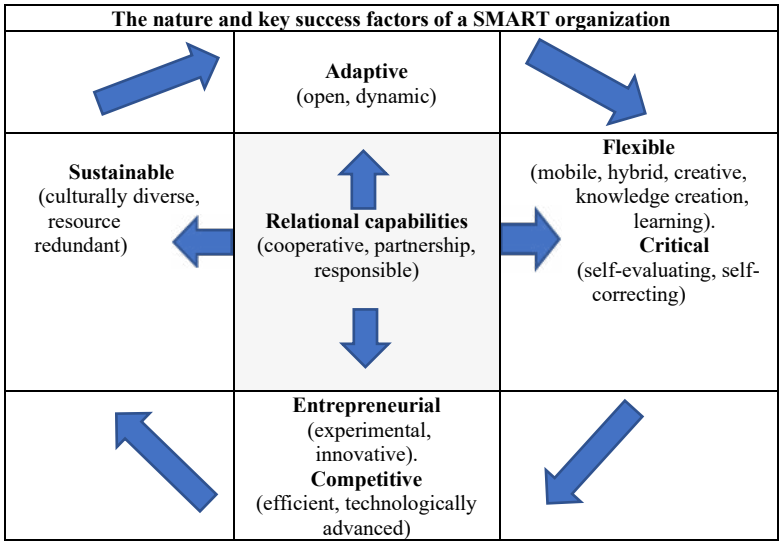


Figure 1. The nature and key success factors of a SMART organization.
Source: own study.

Relational capital as a result of effective use of the organization's relational intelligence: Proposal of evaluation methodology

Relational capital (RC) is the totality of a company's relationships and connections with its stakeholders (Walecka, 2019; Walecka & Zelek, 2017; Walecka & Zelek, 2018). These include both relationships with external stakeholders – contractual (customers, co-operators, suppliers and competitors) and institutional (social and governmental institutions, environmental organizations, media, consumer groups, local communities). It is also the relationship with subsidiary stakeholders (the company's employees, managers, and owners/shareholders of the company). It is the result of the interdependence and interaction of relationship stakeholders. The building of sustainable relationships, and thus the creation of an enterprise's RC, requires that they are based on mutual honesty and responsibility. However, having RC does not condition the continuous generation of future income for the organization. The essence of RC lies in the continuous initiation and creation of more and more contacts that form a network. Indeed, the relational network is evolutionary in nature, forcing the organization to manage (Walecka, 2018; Costabile, 2001) and permanently evaluate these relationships, as well as to search for new valuable partners. By carrying out this assessment, we provide the organization with important information that reduces the uncertainty of the operation (Hubbard, 2011).

The literature points to a number of ways to measure an organization's RC (Barão 2012; García-Merino et al., 2014). The most common ways are based on the measurement of intellectual capital (Nurhayati, 2023; Nakonieczny, 2018): methods based on market capitalization, scorecard-based methods, allowing the identification and measurement of individual intangible assets through non-monetary indicators, direct intellectual capital measurement methods, allowing the monetary value of individual intellectual capital elements to be estimated, and methods based on return on assets (ROA).

However, these methods cannot be translated into measuring RC "directly". Therefore, business practice indicates that companies use quantitative measures (number of actors, frequency of transactions) and qualitative measures (degree of trust, degree of emotional involvement in a given business relationship or informal contacts) or value measures (indicating the level of costs and profits obtained from a given relationship) (Danielak, 2012) or their compilation (Walecka, 2019).

Such an approach (measuring both quantitative and qualitative relations with stakeholders of smart organizations) is also adopted by the authors of the study. In their opinion, it is not only the number of relations between the company and its environment that is important (it is important to constantly establish new relations, to search for those valuable to the smart organization). but also their quality. This quality can be measured using the Quality of Relational Capital: QRC tool on a 7-point Likert scale (Czuba et al., 2012; Walecka, 2021). According to this tool, RC quality can be considered in six dimensions: QRC1—obtaining important market information from the group, QRC 2— significant influence of the group on our product offering, QRC 3—significant influence of the group on the quality of the company's processes, QRC 4—long-term nature of the cooperation, QRC 5—trust in the group, and QRC 6—benefits of the cooperation.

Referring to the ways of measuring the quality of relational capital (QRC) and determining it (RI), it seems that RI can be determined by the following five factors: the way in which the collaborative relationship is realized, the values important to the parties in the course of the collaborative relationship, the requirements placed on the parties, the way in which the partners communicate, the management system of the collaborative relationships developed.

The way in which RI affects the quality of an organization's RC and a proposal to operationalize the assessment of their relationship is presented in Table 1.

As can be seen from Table 1, the manifestations and maturity level of RI in areas such as collaboration, values, requirements, communication, and relationship management shape the quality (RC) of a smart organization. The more developed they are, the stronger manifestations of the organization's relational intelligence are found in its daily functioning, the greater the influence of RI on the RC building process. It will give rise to a higher level of homogeneity of the organization's relationship with its partners, the ability of the organization to have more symmetrical collaborative relationships, the ability of the organization to work together in a better symbiosis with its partners, greater communication capacity (entropy), and a better institutionalization of the collaborative principles developed with its partners. These are important benefits that are worth consciously working to obtain. This is because in the long term they result in the strengthening of specific elements of the organization's RC. The sustainability of relationships with partners, the level of their trust in the organization, the volume of jointly developed benefits and gathered information, as well as the quality and efficiency of the processes carried out in cooperation, are all gained. Unfortunately, organizations handle the formation of RC with different stakeholder groups differently. The different maturity of their RI towards different stakeholder groups seems to be responsible for this. In view of the objectives of this study, it seemed important to find out how smart organizations use their RI (which areas and forms of RI) with the different stakeholder groups. It seemed important to find out which partners they are better able to interact with and how they do so. Their experiences and good practices can inspire other types of organizations as to the directions and forms of working on the development of their RI for the strengthening and development of their RC.

METHOD

In order to realize the research objectives, a survey was conducted among smart companies operating in Poland based on pillars included in Table 1.

This research assumes the following steps:

- establish the importance of the different stakeholder groups in shaping the relational potential of smart companies,
- quantitative and qualitative analysis of the organization's RC,
- evaluation of the companies' RI in terms of the basic criteria of its relational maturity,
- create an RI maturity map of companies with their key stakeholders.

The survey was part of a broader research process, to which micro, small, medium, and large companies were subjected. The sample was random, and stratified random sampling was used for its selection. A diagnostic survey method was chosen as the research method, which used the distributed questionnaire technique (PAPI). The research tool was an original survey questionnaire. The respondents were representatives of top management, including company owners. The sample was assumed to be representative in terms of employment size. From the total number of surveyed companies (N=600), companies were selected for further analysis, which, according to the characteristics adopted by the authors (discussed in the theoretical part of the study) were classified into the group of smart organizations. Thus, 327 enterprises were singled out. The companies surveyed are those representing a variety of industries (engaged in both manufacturing and trade and services, with no shortage of companies that have defined their business profile as other) operating mainly as individuals and limited liability companies, operating as stand-alone companies (not affiliated to capital groups), and representing indigenous capital.

Table 1. Relational intelligence (RI) versus quality of relational capital (QRC) of an organization

Areas of IR construction	The way RI affects the quality of relationships and RC		Manifestations of RI in individual RC areas			Criteria for assessing RI maturity in the RC construction process	Factors/ measures Quality rating (QRC)
Cooperation	**Nature**: Direct/indirect; informal/formal;	**Persistence and frequency of relationship:** Short/long-term; ongoing/cyclical/ one-off;	**Degree of transparency of terms and conditions of cooperation.** legibility/ethics/ respect vs. formalization, bureaucratization, lack of transparency of activities	**Mode of interaction:** voluntary/imposed; planned/accidental;	**High architectural breadth** (number of partners). well matched to the scale and pace of the company's development, long-term cooperative relationships supplemented by relationships with further new partners as required, close, direct relationships of a voluntary nature preferred, most often initiated by partners, not third parties, high contact intensity, high relationship satisfaction.	**Degree of homogeneity** Indicates the number of the organization's partners and its ability to arrive at common solutions with them and to undertake different types of activities together (how similar the partners are in their ways of thinking and acting, how well the organization has selected its partners in terms of how they work together)	**Long-term nature of cooperation**
Values	**Openness to cooperation**	**Matching partners**	**Understanding interests**	**Understanding emotions**	**High willingness to cooperate and share knowledge** with various types of partners, both domestic and foreign, also from different industries, symmetry of benefits, conscious selection of partners in terms of organizational culture, resources, market behavior, organizational processes, personality of managers, tradition of cooperation, convergence of goals, proactive customer orientation.	**Capacity for symmetry -** presents how equally the organization and partners are able to share both costs, benefits as well as responsibilities and power (how well the organization has chosen its partners based on its values)	**Confidence in the group**
Requirements	**Critical reflection on requirements**	**Understanding the requirements**	**Flexibility of action**	**Commitment**	**High openness** to bilateral exchange of information, sharing of benefits and losses, changing forms of action according to needs, joint use of available resources, continuous improvement of competences; openness to challenges and market opportunities, implementation of modern technologies, technical culture of employees	**Capacity for symbiosis -** presents how much the organization and its partners are able to become dependent on each other to achieve a common goal (how well the organization has chosen its partners for their ability to commit and achieve their goals)	**Benefits of cooperation**
Communication	**Nature of communication:** high quality, multilateral	**Communication channels:** Modern, supported by IR 4.0 technologies, IoT-based, IoS-based	**Frequency of communication:** high	**Transparency of communication**: clear communication, transparent, understandable to the partners	**High openness** to informal, close personal relationships, open communication channels, rapid information flow, modern information flow systems	**Entropy capability** - presents how effectively the organization and its partners are able to communicate with each other; (how aptly it has selected them in terms of communication methods)	**Obtaining important information from stakeholders**
Relationship management	**Relations (value of the relationship, sustainability, relationship satisfaction)**	**Human resources (quantity, quality)**	**Assets (availability, profitability, modernity)**	**Processes (flexibility, competitiveness)**	**Good ability to select the right partners** (individuals and organizations). establish and maintain relationships with them in order to organize organizational processes efficiently (good relationship management and accompanying resources).	**Capacity for institutionalization** -demonstrates the extent to which the organization and its partners are able to jointly develop a satisfactory and mutually respected coherent system of rules for the management of the implemented relationships, e.g., planning, remuneration or production (how well they have selected them with a view to efficient coordination/ management of these relationships).	**Significant impact on the quality of processes**

Source: own study.

RESULTS

The first stage of the research sought to establish the importance of the different stakeholder groups in shaping the relational potential of smart companies**.** It turns out that the importance of the different stakeholder groups for the surveyed companies varies. The results of the study showed that customers (M = 5.92) and owners/shareholders (M = 5.76) are considered to be the most important group, with opinions in this respect being fairly homogeneous—as evidenced by the STD standard deviation value (Table 2).

Table 2. Importance of different stakeholder groups to the company.

Specification		Statistics			Percentage of high responses (5-7)		
					total	including	
		M	Me	STD		6	7
internal	Employees	5.34	5.00	1.40	85.0	30.3	19.4
	Management	5.19	6.00	1.62	74.4	29.0	21.2
	Owners/shareholders	**5.76**	6.00	1.28	88.0	34.3	31.8
external	Customers	**5.92**	6.00	1.09	90.4	33.2	36.2
	Suppliers	5.35	5.00	1.24	81.2	32.1	16.7
	Cooperating parties	4.37	4.00	1.39	45.7	20.1	2.4
	Competitors	4.71	5.00	1.23	67.3	23.7	2.4
	Social and governmental institutions	4.10	4.00	1.61	37.6	13.1	5.8
	Labor market institutions	3.99	4.00	1.53	38.1	10.8	3.5
	Financial institutions	4.26	5.00	1.59	51.7	19.3	3.7
	R&D sector	3.76	4.00	1.51	30.5	9.1	1.7
	Industry/city organizations	3.71	4.00	1.61	31.4	9.8	2.3
	Local communities	3.92	4.00	1.64	35.2	12.5	4.6
	Media	3.69	4.00	1.62	31.1	9.2	2.2

M - mean, Me - median, STD - standard deviation.

Respondents rated the importance of each stakeholder group on a 7-point Likert scale (1 - very low rating - 7 - very high rating). Source: own study.

As can be seen from the median value, half of the people surveyed rate the importance of customers and internal relationship capital builders (especially managers and owners/shareholders of the company) very highly (at least 6 on a scale of 1-7). High importance is also given to suppliers (M = 5.35 - half of the people rated their importance at least 5), employees (M = 5.34), competitors (M = 4.71), and financial institutions (M = 4.26). Respondents attributed the least importance to the media, industry/city organizations, the R&D sector, as well as local communities and labor market institutions (average below 4, with a moderate degree of variation). Adequate to the above results, one would expect activity in the use of RI by the surveyed companies. The next stage of the research sought to establish how respondents build their relationships with different types of external stakeholders. The results of the research showed that the formal relationships of the companies surveyed are particularly with financial institutions (75.8% of indications) and suppliers (70%), to a slightly lesser extent, labor market institutions (65%) and social and governmental institutions (56%). Respondents are least likely to formalize their relationships with the media and R&D organizations. Relationships with customers and cooperating entities are both formal and informal (Table 3).
Regarding the durability of relations with external stakeholders, established by the surveyed smart companies, long-term cooperation concerns above all industry/city associations (63%), financial institutions (59%), cooperative entities (52%), suppliers (51%), and customers (48%). The most frequent incidental relations concern the cooperation of the surveyed companies with the media (42.8%), labor market institutions (25.1%), R&D institutions (22.4%), competitors (22%), and social and governmental institutions (21.8%).

Table 3. Form of relationship with the organization's various external stakeholders.

Stakeholders	CHARACTERISTICS OF SMART ORGANIZATIONS' RELATIONSHIPS WITH THEIR STAKEHOLDERS					
	N=327					
	Formal (%)	Informal (%)	Long-term (%)	Medium-term (%)	Short-term (%)	Incidental (%)
Customers	49	51	**48**	**26**	**10.7**	15.3
Suppliers	**70**	30	**51**	26.2	12.8	10
Cooperating parties	49	51	**52**	22.3	8	17.7
Competitors	36.7	63.3	17.4	**45.3**	**15.3**	**22**
Social and governmental institutions	42.8	57.2	25.1	29.1	24	21.8
Labor market institutions	65.1	34.9	18	26.9	30	**25.1**
Financial institutions	**76.4**	23.6	**59**	25.3	9.7	6
R&D sector	28.1	**71.9**	7.6	22.9	47.1	**22.4**
Industry / city organizations	38.5	61.5	**63**	13.8	7.3	15.9
Local communities	41	59	41.9	33.9	4.6	19.6
Media	22.6	**77.4**	15	17.1	25.1	**42.8**

Source: own study.

Analyzing the ways in which relationships are established with individual stakeholder groups, it can be seen that the following are true of the smart companies surveyed (Table 3):
- relationships with clients, thanks to the relatively frequent practice of informal relations and skillful combination of these with aspects of formalization, are most often maintained in the long to medium term;
- relationships with suppliers are usually maintained on a long-term basis due to the efficient formalization of their activities;
- relations with cooperating entities are realized by combining elements of formal and informal aspects; if they decide to do so, they tend to be of a long-term cooperation nature;
- they build relations with competitors most often in an informal way, depending on their needs, for a horizon that is most often medium-term;
- they enter into relations with social and governmental institutions both formally and informally, for a very different time horizon; similarly (although more of a formal character) they form relations with labor market institutions;
- relations with financial institutions are most often formal, and for a very different time horizon;
- they establish relations with the R&D sector in a short-term manner, relying decisively on informal relations;
- relationships with industry/city stakeholders' organizations are established on a long-term, on a mostly formal basis;
- relations with local communities are mostly established on a long-term basis, both informally and formally;
- relations with the media are incidental and implemented in a decidedly informal manner.

In terms of their ability to establish and maintain (sustainability of relationships) informal relationships, it is possible to perceive "very high" relational intelligence in the respondents' dealings with customers. The ability to establish and develop formal relationships with suppliers and financial institutions, on the other hand, indicates their "high" relational intelligence of the scopes of cooperation with these stakeholder groups. Due to the medium-term or less frequent informal contacts of the respondents with their competitors, it seems that only an "average" level of relational intelligence of the surveyed smart companies can be spoken of in terms of these contacts. At the same time, the results similarly testify to the very high, high, and medium homogeneity (fit) of the surveyed with the above-mentioned partner groups.

Considering the relationships established with internal stakeholders, they are both formal and informal, rather long- and medium-term (Table 4). Relationships with employees tend to be formal, long- to medium-term in nature, relationships with managers tend to be established for the medium term, both formally and informally, relationships with owners/shareholders of the company are definitely formal, long-term in nature.

Table 4. Forms of relationship with different internal stakeholders of the organization.

Stakeholders	CHARACTERISTICS OF SMART ORGANIZATIONS' RELATIONSHIPS WITH THEIR INTERNAL STAKEHOLDERS					
	N=327					
	Formal (%)	Informal (%)	Long-term (%)	Medium-term (%)	Short-term (%)	Incidental (%)
Employees	**64.5**	35.8	44.6	39.8	10.7	4.9
Management	52	48	30.9	47.7	13.8	7.6
Owners/shareholders	**80.5**	19.5	73.4	24.5	2.1	0

Source: own study

The second stage of the research analyzed the RC of the surveyed smart organizations qualitatively and quantitatively. In the quantitative approach, respondents were asked about the number of entities from each group with which the company has a relationship. Considering the entire population N=327 (in which micro-enterprises predominate), the average number of employees with whom relationships are maintained is 5.6, with an average of 4.1 among micro-enterprises, 19.8 for small, 87.3 for medium, and 317.6 for large. Half of the companies maintain relationships with no less than 4 employees, no less than one manager and owner/shareholder. Among external stakeholders, customers are the most important (Me - 60), followed by suppliers (half of the companies have no less than 4) and competitors (no less than 3). The median level of 1 applies to financial institutions. Importantly, for all other stakeholders analyzed, the median is 0, indicating the absence of such relationships for a significant proportion of entities (at least half) (Table 5).

Table 5. Size of the relational network of the surveyed companies.

Specification	INDICATORS FOR ASSESSING THE SIZE OF THE RELATIONAL NETWORK OF THE SMART COMPANIES SURVEYED						
	Total (N=327)						
	M	Me	STD	S	No network (%)	has net-works	max
Employees	5.6	4.0	14.2	23.5	**3.5**	**96.5**	**1000**
Management	0.8	1.0	1.6	63.2	34.56	65.44	230
Owners/shareholders	1.2	1.0	1.1	10.6	**4**	**96**	15
Customers	115.4	60.0	204.8	20.0	**7.6**	**92.4**	**10000**
Suppliers	6.0	4.0	11.1	9.7	**8.6**	**91.4**	300
Cooperating parties	1.0	0.0	2.2	13.6	53.2	46.8	90
Competitors	7.0	3.0	12.9	4.9	25.4	74.6	200
Social and governmental institutions	1.0	0.0	2.0	4.4	56.6	43.4	20
Financial institutions	1.2	1.0	1.3	11.0	22.3	77.7	63
R&D sector	0.4	0.0	0.8	3.4	67.3	32.7	10
Industry/city organizations	0.6	0.0	1.1	15.0	65.1	34.9	100
Local communities	7.6	0.0	56.5	24.0	60.2	**39.8**	**3000**
Media	0.6	0.0	1.2	2.1	67.9	32.1	6

M - mean, Me - median, STD - standard deviation, S - coefficient of skewness, max - maximum.

Source: own study.

Most respondents perceive their RC to have developed relational networks with employees (96.5%), owners/shareholders (96%), customers (92.4%), and suppliers (91.4%). The largest of these relate to relationships with customers (115.4 entities on average). The least numerous among respondents are relationship networks with the media (only 32.1% of respondents have them). Acknowledging relationship networks, consciously building them, and efficiently developing them means that the RI of the surveyed entities in dealing with these stakeholder groups is actively used, systematically increasing the homogeneity of the parties during joint activities. As far as the evaluation of the RC of the respondents from the point of view of its quality is concerned, the basic statistics of the indicators concerning it are presented in Table 6. As indicated in the theoretical part of

the study, the quality of the RC was calculated using the QRC methodology, modified for our own purposes, which consisted in respondents responding to 6 opinions on a 7-point Likert scale (where 1 means complete disagreement and 7 complete agreement with a given opinion). Respondents were asked to respond to 6 opinions: QRC1—receiving important market information from the group, QRC 2—significant influence of the group on our product offering, QRC 3—significant influence of the group on the quality of the company's processes, QRC 4—long-term nature of the cooperation, QRC 5—trust in the group, and QRC 6— benefits of the cooperation.

The overall RC quality score is derived from the sum of the ratings of 13 types of partners (employees, managers, owners/shareholders, customers, suppliers, cooperating entities, competitors, social and government institutions, labor market institutions, financial institutions, the R&D sector, industry/city associations, local communities, and media) in the above 6 categories on a 7-point scale. This indicator can therefore take values ranging from 78 to 546, with higher levels indicating a higher quality RC of the organization.

Table 6. Basic statistics of RC quality indicators for each stakeholder group

		RC QUALITY INDICATORS OF THE SURVEYED SMART ORGANIZATIONS WITH THEIR STAKEHOLDERS			
Specification		**M**	**Me**	**STD**	**S**
QRC	**RC Quality**	**358.84**	**366.00**	**63.95**	**-0.20**
QRC1	Employees	**32.16**	33.00	6.49	-1.30
QRC2	Management	30.44	33.00	9.59	-1.28
QRC3	Owners/shareholders	**34.77**	36.00	6.20	-0.70
	TOTAL RC OF SUB-PARTNERS	**97.37**			
QRC4	Customers	**33.84**	34.00	5.94	-0.67
QRC5	Suppliers	**32.00**	33.00	6.61	-0.95
QRC6	Cooperating parties	26.44	26.00	8.59	-0.62
QRC7	Competitors	25.52	25.00	7.37	-0.38
	TOTAL RC OF CONTRACT PARTNERS	**117.8**			
QRC8	Social and governmental institutions	24.13	24.00	8.23	-0.45
QRC9	Financial institutions	**27.59**	30.00	9.49	-0.83
QRC10	R&D sector	22.32	24.00	8.28	-0.49
QRC11	Industry/city organizations	23.30	24.00	8.29	-0.60
QRC12	Local communities	24.66	24.00	8.39	-0.25
QRC13	Media	21.67	24.00	8.45	-0.41
	TOTAL RC OF INSTITUTIONAL PARTNERS	**143.67**			

M - mean, Me - median, STD - standard deviation, S - skewness coefficient.
Source: own study.

As can be seen from Table 6, the overall assessment of the RC quality of the surveyed companies is at an average of high (average at 358.84 out of a maximum of 546)[1]. This assessment consists of evaluations of relationships with three stakeholder groups. The quality of relationships with subsidiary stakeholders is most strongly shaped by relationships with the company's owners/shareholders and employees. The quality of relationships with contractual stakeholders is determined most strongly by relationships with customers and suppliers, and in terms of relationships with institutional stakeholders, those with financial institutions are of the highest importance.

The third stage of the analyses focused on an in-depth assessment of the RI of the surveyed smart companies by observing the basic criteria for identifying its maturity (signaled in Table 1). This meant assessing the level of the organization's ability to generate homogeneity, symmetry, entropy symbiosis, and satisfactory institutionalization for the parties in the established

1 The overall assessment of the quality of the organization's RC is assessed as the sum of the sub-assessments (a value of 0.863 for the Cronbach's alpha coefficient, as well as a Spearman-Brown coefficient of 0.676 and a Guttman coefficient of 0.662 confirm the high reliability of the overall relational capital quality index). It can take values from 78 to 546, and a higher level indicates a higher quality of the organization's relational capital. On average, the score reaches around 358, and in half of the companies it is no lower than 366.

collaborative relationships. This was based on analyses of selected RI measures of companies. As included in Table 1, these measures corresponded to the individual dimensions of RC quality (rating on a scale of 1–7): homogeneity—the long-term nature of the cooperation (QRC 4), symmetry—trust in the partner (QRC 5), symbiosis—benefits of cooperation (QRC 6), entropy—obtaining important information from the partner (QRC 1), and institutionalization—significant influence of the partner on the quality of the company's processes (QRC 3).

Considering the above (Table 7), it should be noted that the surveyed organizations are characterized by an average high level of RI (average score of 4.79 for all 3 stakeholder groups). Importantly, they shape it primarily through their relationships with subsidiary stakeholders (5.42). This group is primarily capable of symbiosis and symmetry. The organization's RI in its relationships with contractual stakeholders is at 4.9. These relationships are most often characterized by symbiosis and homogeneity. The organization's approach to institutional stakeholders is decidedly different. Here, all indicators are at a level close to 4.0, with the highest indication again obtained in relation to symbiosis. The RCs of the respondents are most frequently and strongly built up by their RI regarding relationships with owners/shareholders and customers. These relationships show the highest levels of evaluation in all the criteria mentioned earlier. It is the relationships that yield the highest levels of homogeneity, symmetry, entropy symbiosis and satisfactory institutionalization of parties. A slightly weaker influence on the development of the RC of the respondents is the RI concerning the contacts of the surveyed companies with employees and suppliers. Symmetry, symbiosis, and institutionalization are exceptionally proficient in building the respondents' relationships with their employees. Homogeneity and entropy, on the other hand, are effectively enhanced by the RI of the respondents' relationships with their suppliers.

In order to attempt to assess the level of RI maturity of the surveyed smart companies in their relationships with individual stakeholder groups, and thus the impact of these relationships on the way they build and the quality of their RC, the following rating scale was adopted: 1 – very low, 2 – low, 3 – rather low, 4 – medium, 5 – rather high, 6 – high, 7 – very high. The above approach made it possible to create a kind of **RI maturity map** of the surveyed smart companies with their key stakeholders (Table 8).

Most valuable for the successful construction of RC in the surveyed smart companies are their relationships with subsidiary partners, especially owners/shareholders. This is where RI is most required on the one hand, but also where it must be perceived in practice. Its high maturity in building these relationships is the basis for the development of the smart company. This was also diagnosed in the surveyed companies. The ability to select the right stakeholders opens up many new opportunities for them, both in terms of investment and personnel, organization, information, and strategy. Smart organizations need to change systematically, so understanding, trust and support from this level is nowadays a significant key to market success. It gives full relational advantages of homogeneity, symmetry, symbiosis, entropy, and institutionalization. The second stakeholder group in the relationship with which the respondents show exceptionally high RI is customers. In particular, they benefit from the homogeneity, symmetry, and symbiosis of RC smart companies. Indeed, understanding of needs, proper dialogue, including ethics, respect and partnership are important conditions for a long-term market presence. Another group of stakeholders with whom a high relational intelligence was recorded is employees. In the smart organizations surveyed, this is particularly evident in the high symbiosis resulting from close, trusting relationships with loyal employees who are satisfied with their working conditions. This signals the maturity of the relationship between them. RI's ratings with the other stakeholder groups are slightly lower, but not by much. At a "rather high" level is the RI of the respondents in relations with managers and suppliers. In relations with other stakeholder groups, smart organizations are characterized by a medium level of RI. To a large extent, the dissimilarity of the requirements of the individual groups seems to be responsible for this fact, which raises problems with their constant monitoring, effective communication, or full openness.

In summary, for the surveyed companies, the most characteristic attitude, indicative of their RI, is the capacity for symbiosis with their partners (high level in relations with 3, and rather high level with 2 stakeholder groups). This ability benefits not only the surveyed organizations but also their business partners. It is very skillfully used in both substancer and contractual RC formation (customer and supplier relationships). Thanks to it, when pursuing their objectives, the surveyed companies are able to fully engage with these stakeholder groups to act openly and honestly. Other important attitudes for smart organizations are the manifestations of RI building homogeneity and symmetry of their relationships with partners (in relationships with two groups they are at a high level, in relationships with three they are at a "rather high" level, in 8 at a medium level). Respondents are slightly weaker in exploiting RI shaping the entropy and institutionalization of the relationships they establish (high levels of this with one group of partners, "rather high", with four and medium with 8 groups). Interestingly, the organization's capacity for entropy is most often characterized in relation to competitors and financial institutions, while institutionalization is most often characterized in relation to cooperative entities and social and governmental institutions. It seems, therefore, that the surveyed organizations have had to work out with the above stakeholder groups the principles of both proper communication and cooperation, without which they would not be able to realize their market objectives.

Table 7. Assessment of relational intelligence of surveyed organizations in relation to different stakeholder groups

Stakeholders	MANIFESTATIONS OF THE RELATIONAL INTELLIGENCE OF THE SURVEYED SMART ORGANIZATIONS IN THEIR RELATIONSHIPS WITH THEIR STAKEHOLDERS														
	Homogeneity			Symmetry			Symbiosis			Entropy			Institutionalization		
	M	Me	STD	M	Me	STD	M	Me	STD	M	Me	STD	M	Me	STD
Employees	5.36	5.00	1.25	5.50	**6.00**	1.24	**5.61**	6.00	1.18	**5.10**	5.00	1.42	**5.33**	5.00	1.39
Management	5.08	5.00	1.67	5.19	**6.00**	1.75	5.15	6.00	1.69	4.97	5.00	1.59	5.03	5.00	1.69
Owners/shareholders	**5.81**	6.00	1.16	5.84	**6.00**	1.13	**5.86**	6.00	1.16	**5.73**	6,00	1.17	**5.74**	6.00	1.21
Customers	**5.72**	6.00	1.16	5.68	**6.00**	1.13	**5.74**	6.00	1.11	**5.43**	5.00	1.14	**5.50**	6.00	1.33
Suppliers	**5.40**	6.00	1.24	5.42	**6.00**	1.35	**5.47**	6.00	1.22	**5.18**	5.00	1.25	5.21	5.00	1.27
Cooperating parties	4.42	4.00	1.59	4.38	4.00	1.52	4.42	4.00	1.54	4.35	4.00	1.45	4.47	4.00	1.54
Competitors	4.21	4.00	1.53	4.15	4.00	1.37	4.16	4.00	1.43	4.34	5.00	1.35	4.30	4.00	1.41
Social and governmental institutions	4.42	4.00	1.59	4.38	4.00	1.52	4.42	4.00	1.54	4.35	4.00	1.45	4.47	4.00	1.54
Financial institutions	4.21	4.00	1.53	4.15	4.00	1.37	4.16	4.00	1.43	4.34	5.00	1.35	4.30	4.00	1.41
R&D sector	3.70	4.00	1.40	3.69	4.00	1.39	3.76	4.00	1.44	3.74	4.00	1.42	3.71	4.00	1.50
Industry/city organizations	3.90	4.00	1.42	3.87	4.00	1.47	3.98	4.00	1.44	3.86	4.00	1.41	3.86	4.00	1.51
Local communities	4.15	4.00	1.43	4.12	4.00	1.50	4.16	4.00	1.50	4.10	4.00	1.42	4.03	4.00	1.56
Media	3.68	4.00	1.56	3.65	4.00	1.49	3.69	4.00	1.43	3.59	4.00	1.46	3.53	4.00	1.52

M - mean, Me - median, STD - standard deviation.
Source: own study.

Table 8. Maturity map of relational intelligence of surveyed smart organizations in relationships with their key stakeholders

Stakeholders	MANIFESTATIONS OF RI ORGANIZATION SMART[2]				
	Homogeneity	Symmetry	Symbiosis	Entropy	Institutionalization
Employees	rather high	rather high	**high**	rather high	rather high
Management	rather high	rather high	**rather high**	rather high	rather high
Owners/shareholders	high	high	**high**	high	high
Customers	high	high	**high**	rather high	rather high
Suppliers	rather high	rather high	**rather high**	rather high	rather high
Cooperating parties	medium	medium	medium	medium	**medium**
Competitors	medium	medium	medium	**medium**	medium
Social and governmental institutions	medium	medium	medium	medium	**medium**
Financial institutions	medium	medium	medium	**medium**	medium
R&D sector	medium	medium	**medium**	medium	medium
Industry/city organizations	medium	medium	**medium**	medium	medium
Local communities	medium	medium	**medium**	medium	medium
Media	medium	medium	**medium**	medium	medium

Source: Own study.

2 In the table, the organizational characteristic with the highest score for each relational capital component is bolded.

DISCUSSION

A literature review reveals that no prior research of comparable scope and specificity has been carried out. To date, studies have focused primarily on smart organizations (e.g., Treviño-Elizondo et al., 2023; Carbonara et al., 2022), various facets of organizational relational capital (e.g., Mikalef et al., 2023; Kim & Park, 2022) and organizational intelligence (e.g., Hanifah & Halim, 2022; Madhavaram et al., 2023). The analysis was conducted separately. The authors' research is innovative and sheds light on the sources of smart organization success, the formation of relational capital, and the significance of relational intelligence in modern-day organizational functioning. Besides, the research results collected have made it possible to take a first step towards a better understanding of the relevance and maturity of RI of smart organizations in their relationships with the different types of stakeholders. The results of the research carried out confirm the importance of RI in the process of building an organization's RC, especially those of a smart nature. They also allow us to recognize the key areas of its influence on the RC of an organization (e.g., cooperation, values, requirements, communication, relationship management, see Table 1) and to establish the way in which it supports the relationships built by enterprises: the ability to shape high homogeneity, symmetry, symbiosis, entropy, and institutionalization of the business builds circular cooperative relationships. The most characteristic attitude for the surveyed companies, indicative of their RI, is the capacity for symbiosis with their partners. This ability benefits not only the surveyed organizations, but also their business partners. It is very skillfully used in both subsidiary and contractual RC formation (customer and supplier relationships). Thanks to it, when pursuing their objectives, the surveyed companies are able to fully engage with these stakeholder groups, to act openly and honestly.

The visualization of data on the Relational Intelligence Maturity Map (Table 7) indicates, on the one hand, the basis for the success of the surveyed group of companies (relationships with high and rather high levels of RI activation). And, on the other hand, can serve as inspiration for other organizations concerning what type of relationships to develop, as well as why, where, and how to activate their RI more strongly in order to strengthen their RC. This is because it is well known that not every relationship is worth maintaining, not every Relationship is equally valuable, and not every relationship requires the same amount of investment. In caring for the well-being of the organization, executives should therefore focus on making the most of their RI and building and nurturing those most valuable relationships, whether with internal or external stakeholders. The validity of the above conclusions is also confirmed by the findings of other researchers of the issue (Pless and Maak, 2017; Daniels, 2020; Adamik & Flaszewska, 2015; Mohelska & Sokolova, 2018; Oubrich et al., 2018).

Recommendations for business practitioners include:

- monitoring the quality and delivery mechanisms of stakeholder relationships,
- systematically assessing and prioritizing the importance of relationships with individual stakeholders,
- being willing to invest in tools, such as new technologies, to enhance the efficiency of building and operating relationships with various partners.

This is because the level of relational intelligence exhibited in these procedures significantly impacts the standard of relational capital amassed by organizations.

The research conducted has several key strengths, including a structured multifaceted analysis based on a set of key areas of the organization's relational capital. Additionally, a clear way of operationalizing the processes of assessing the organization's IR maturity is proposed, indicating the factors that can be assessed and suggesting ways to assess them. Furthermore, a simple way of visualizing (mapping) the collected research results is presented.

The authors are aware of research limitations, such as the research sample being restricted to a set of Polish smart organizations, the selection of respondents based on a subjectively established list of smart organization characteristics through the expert method, and the survey of respondents via a questionnaire beset with the conventional flaws of survey research.

CONCLUSIONS

The topic addressed in the study appears to be very topical and its importance is steadily growing. The ever-increasing demands of the SMART WORLD environment are also, or perhaps especially, on the organizations operating within it. Not only is it necessary to have an ever-increasing level of knowledge in various areas, but also to be able to demonstrate a wide range of very different capabilities. In order to accumulate the right mix of these, it is necessary to have relationships with various types of partners and a high degree of RI, not only in their accurate selection, but also in the ways in which relationships with them are established, maintained, and developed. By their very nature, smart organizations seem to have an exceptionally high capacity in this respect, hence they can be taken as an interesting benchmark in this respect.

It appears that constructing relational capital within SMART organizations differs considerably from the process observed in traditional organizations. Smart World technology solutions are not only changing the ways in which relationships with stakeholders are established, maintained, and managed, but are also influencing the organization's goals, organizational culture, and operating strategies in various areas. It is noticeable that in traditionally managed organizations, the processes of building relational capital focus on building mainly relationships to achieve business goals. In smart organizations, on the other hand, the aim is to achieve sustainable success, which means a stronger balancing of financial performance with social and environmental performance. Differences are also apparent in terms of organizational culture. SMART organizations focus more strongly than traditional ones on emphasizing the importance of moral values, integrity, and social responsibility. Modern relationship capital is therefore more strongly based on trust and ethics. In addition, smart organizations, compared to classic ones, are generally more open to long-term relationships, oriented towards transparent communication, and are characterized by greater responsibility for their environmental impacts.

Building a smart organization's relational capital seems to be particularly difficult in relationships carried out over long distances, with partners from different backgrounds (different industries, sectors, countries, from different cultures). This is when new SMART WORLD technologies come to the rescue, based on various types of networks, programmes, applications, platforms, and in recent years on artificial intelligence, which significantly facilitate and accelerate RC building (such as in terms of data analysis and CRM, personalization of activities, forecasting and optimization, or in terms of automation of service activities). Introducing them into an organization can significantly support the organization's stakeholder relationship management processes. The key to success, however, is an informed and appropriate mix of technology and other supporting resources for the company.

The research initiated above should be continued, especially in terms of concretizing in more detail what methods or tools are used to support RI in its various areas and collaborative relationships with the different stakeholder groups of contemporary organizations. A broader operationalization of activities in this area and, consequently, more targeted advice is likely not only to stabilize the processes of building RC, but also to make it more dynamic for many organizations. While the SMART WORLD era provides a range of technological solutions, including the use of artificial intelligence and modern communication channels such as messaging, social media platforms, programs, and applications on different networks, these can successfully support this area (Aslam et al., 2020; Bag et al., 2021; Bali et al., 2021); Hudson et al. (2019) emphasize that a successful relationship always depends on having the right person involved, whether it be the owner, shareholder, customer, employee, or manager. To ensure quality relationships, it is crucial to consider the importance of each stakeholder (Bergant, 2021; Dobrowolska & Knop, 2020; Shiroishi et al., 2018; Ravina-Ripoll et al., 2019; Ghislieri, 2013; Fink et al., 2013).

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