

# Society 5.0: balancing of Industry 4.0, economic advancement and social problems

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## Abstract

**Purpose** – The purpose of this paper is to report about research how Society 5.0 balances Industry 4.0, responsible economic development and resolution of social problems by advancement of corporate social responsibility (CSR) in organizations.

**Design/methodology/approach** – Drawing from organization, sustainable development and social functionalism theories, the authors designed an integral model of CSR in line with goals of a forward-looking and socially responsible society. This study includes analyzing of present governing principles, multidisciplinary and multifunctional consideration and developing of integral framework for CSR in organizations.

**Findings** – This study's findings suggest incorporation of technology in models of CSR, a regionally grounded solving of individuals' social problems and changing of CSR's environmental, social and economic dimensions according to circumstances of Society 5.0.

**Practical implications** – This study has created guidance for improvement of CSR practice in organizations through its responsible operating and behavior grounded on the governing environmental and social circumstances in modern society. It also revealed new possibilities for interest-based usage of human-centered society among individuals and organizations.

**Originality/value** – The reported study proposed an integral model of CSR for solving the main social problems with usage of advanced technologies in responsible economic growth founded on circumstances of Society 5.0, previously not considered in literature.

**Keywords** Corporate social responsibility, Industry 4.0, Socially responsible economic advancement, Social problems, Society 5.0

**Paper type** Conceptual paper

## Introduction

Authors examine impact of Society 5.0 on understanding and practice of corporate social responsibility (CSR) in modern organizations.

Media headlines on “environmental problems,” “risky technological development” and “laches of social development” keep worsening public opinion about practice of responsibility of organizations and their contributions to sustainable development of society (Wang *et al.*, 2016; Kish-Gephart *et al.*, 2019).

Studies about organizational effects on natural environment revealed substantial and growing alteration of humans on Earth (Campbell, 2007; Aguinis, 2011; Elkington, 2004).



Increasing interest in protection of natural environment initiated visions aimed at a more responsible living of humankind, such as responsible development, sustainable development and social responsibility (Dahlsrud, 2008; Rego *et al.*, 2017). In 1960s, environmentalism studies presented CSR (Carroll, 1999; Elkington, 2004). CSR was established as a leading vision for responsible operating and behavior of organization toward natural, social and economic environment in the past decades (Elkington, 2004; Dahlsrud, 2008; Rego *et al.*, 2017).

Leading conceptualizations of CSR as “A company’s sense of responsibility toward the community and environment in which it operates” (Carroll, 1999, p. 269) and “Obligation of organization to serve its own interests and those of society” (Shen and Benson, 2016, p. 1725) show large accordance in content and methodological consideration of organizations’ responsibility (Dahlsrud, 2008; Elkington, 2004; Wang *et al.*, 2016). Conceptualizations of CSR are aimed at improving organizational – and their stakeholders’ – care for nature preservation and assurance of social prosperity (Wang *et al.*, 2016; Kish-Gephart *et al.*, 2019).

Less studied and explained are effects of internal and external situational circumstances on CSR in organization (Waddock and Graves, 1997; Glavas, 2016). Globalized development of society in the past decades resulted in fast economic growth, technological advance and spreading of prosperity around the world; it also modeled new circumstances for responsible advancement of humankind, which need to be included in CSR (Wang *et al.*, 2016; Kish-Gephart *et al.*, 2019). Theorists and practitioners in their research follow the tradition of social functionalism (Myers, 2010; Macionis, 2012), and organizational contingency theories (Feldman, 1976; Dahlsrud, 2008) with presumption that situational circumstances of modern society (Elkington, 2004; Wang *et al.*, 2016) decide on models realization and potential results of CSR in organizations (Potocan *et al.*, 2016; Gelfand *et al.*, 2017).

In the forefront of recent CSR scholars’ research interests are circumstances connected to social problems (Gelfand *et al.*, 2017; Kish-Gephart *et al.*, 2019) and technological development (Palazzeschi *et al.*, 2018; Shiroishi *et al.*, 2019). Social issues related to growing demands for energy and foodstuffs, humankind’s un-rational using of limited natural and other resources, limited capacities and possibilities for society’s development and globalization (Kassin *et al.*, 2017; Higashihara, 2018) importantly determine alternatives for development of a socially responsible forward-looking society (Wang *et al.*, 2016; Kish-Gephart *et al.*, 2019).

In conditions of restricted resources, severe competition and growing globalization, organizations can improve the solving of social problems with usage of advances technologies, which enables connections of people, things and technologies in cyberspace for creation of new values for industry in society (Lee *et al.*, 2015; Palazzeschi *et al.*, 2018; Savaget *et al.*, 2019). Understanding of interdependences of technological and social developments, implementation of advanced technologies, diffusion of available technological solutions and forming of integrated cyberspace enable solving of social problems in ways not previously possible (Lee *et al.*, 2015; Shiroishi *et al.*, 2019).

New development issue of modern society (Aguinis, 2011; Kish-Gephart *et al.*, 2019) led Japan Business Federation (Keidanren) to modeling the Society 5.0 (Keidanren, 2016). Society 5.0 presented a new vision of society:

[. . .] that incorporates several new technologies in all industries and social activities and achieves both economic development—primarily based on Sustainable Development Goals established by the United Nations, and solutions to key social problems in the present society (Keidanren, 2016, p. 3).

Society 5.0, described the present circumstances of society, suggested solutions for achievement of responsible human-centered society (Higashihara, 2018; Nakanishi, 2019)

and offered promising integral framework for potential development of CSR in organizations.

According to calls of scholars for improvement of responsibility (Elkington, 2004; Aguinis, 2011; Rego *et al.*, 2017) and inspired by vision of Society 5.0 (Keidanren, 2016; Nakanishi, 2019), we are expanding previous studies with conceptualization of integral framework of Society 5.0 for consideration of environmental, social and economic dimensions of CSR in organizations.

To give analytical traction to our exposition, we begin by highlighting related gaps in understanding and consideration of CSR that have been emphasized in prior studies.

Our study contributes the following added value. First, we study Society 5.0 through multidisciplinary and multifunctional approach, which includes technological development, leading social problems and sustainable development to establish the bridge between previously divided studies of CSR (Dahlsrud, 2008; Shiroishi *et al.*, 2018). Second, we analyze how circumstances of modern society defined by Society 5.0 govern development of CSR arguments and initiatives of CSR in organizations (Wang *et al.*, 2016; Gelfand *et al.*, 2017). Third, following the studies on present circumstances of society and development trends of CSR, we modeled an integral framework and corresponding model for usage of CSR in forward-looking responsible society (Higashihara, 2018; Nakanishi, 2019). Finally, our study uncovers substantial knowledge gaps for critical analysis, aimed at development of CSR in organizations and suggestions for its future inquiry.

In the following section, we begin by reviewing the theoretical framework of Society 5.0 and CSR as the interesting variables that guided the development of research hypothesis in our study. In the next section, we form an integral framework for further advance of CSR in Society 5.0 through consideration of technological development, innovations and innovativeness. We then analyze directions for future consideration of environmental, social and economic dimensions of CSR. We continue with modeling of an integral model of CSR in Society 5.0. We conclude with a discussion about the findings, limitations and extensions of this research.

## Theoretical framework and hypothesis

### *Society 5.0*

Idea of social responsibility of organizations has become more widespread in 1960s, and since then, studies about responsibility of organizations for environmental, social and economic issues have been growing (Carroll, 1999; Dahlsrud, 2008; Wang *et al.*, 2016).

In 2016, Keidanren (Keidanren, 2016) published declaration “Toward realization of the new economy and society - Reform of the economy and society,” which established Society 5.0 as a new vision for further responsible development of society. Keidanren defined Society 5.0 as “A human-centered society that balances economic advancement with the resolution of social problems by a system that highly integrates cyberspace and physical space” (Keidanren, 2016, p. 5). Although this new vision exposed policies and actions on society’s level, such initiative is founded and decisively dependent on organizations as the most influential institutions of the modern society.

Society 5.0 followed the previous development visions with consideration of responsible economic development (Reinhardt *et al.*, 2008; Crifo and Forget, 2015) and solving of sustainability issues (Lins *et al.*, 2012; Rego *et al.*, 2017). More importantly, Keidanren (2019) completed knowledge of sustainability with humans-centered society (Higashihara, 2018; SCTI, 2019), regionally planned and realized solving of sustainability issues (Metaxas and Tsavdaridou, 2014; Rego *et al.*, 2017) and established prevailing situational circumstances as origins for advancement of sustainability in society (Higashihara, 2018;

Shiroishi *et al.*, 2019). Researchers characterized humans-centered society as providing goods and services that granularly address manifolds latent needs without disparity but balancing economic development with the resolution of social problems of individuals and one advancing fusion of cyberspace and physical space to ensure suitable infrastructures and preconditions for sustainable living of individuals in modern society (Higashihara, 2018; Keidanren, 2019).

The concept Society 5.0 radically changes solving of social sustainability problems with regional orientation of solving and implementation of bottom-up created solutions (Keidanren, 2016; Nakanishi, 2019). That enables organizations to provide goods that people need and at the time they are needed, thereby optimizing the entire process of sustainable living in the local environment (SCTI, 2019). Keidanren (2019) aims at balancing expectations about sustainability in society and lag of organizations' interest in responsible production of sustainable goods in contentment of humans' unsatisfied sustainable needs in local environment (Higashihara, 2018; Shiroishi *et al.*, 2019). More detailed overview of human-centered and regionally oriented implementation of Society 5.0 in organizations is beyond the scope of this paper.

For purpose of this study, we will now outline circumstances of Society 5.0, whose characteristics importantly govern the CSR operating and behavior in organizations (Higashihara, 2018; SCTI, 2019). Researchers of Society 5.0 focused their attention on circumstances related to knowledge and information, humans' work, attributes of work places, solving of social problems and limitations in humans' work abilities (Higashihara, 2018; SCTI, 2019; Nakanishi, 2019).

In the present information society – also named Society 4.0 – knowledge and information are insufficiently shared; members of cross-sector teams did not adopt the same values, and this limited the potential results of cooperation in society (Lee *et al.*, 2015; Palazzeschi *et al.*, 2018). Society 5.0 suggests the use of advanced technologies and products for connection of people and things and sharing of all sorts of knowledge and information in creation of new social and business chains and values in society (Shiroishi *et al.*, 2018; Nakanishi, 2019).

Employees work in conditions characterized by overflow of information, and consequently, finding and analyzing of information is difficult and not appropriately supported by available technological solutions (Palazzeschi *et al.*, 2018; Savaget *et al.*, 2019). Society 5.0 foresees usage of modern information technologies and solutions to free humans from exhausting routine work and improve using of available information (Higashihara, 2018; Shiroishi *et al.*, 2019).

Social problems of the modern society created many constrains among humans, originating in aging society, regional depopulations and stagnation of participation of individuals in social living (Shen and Benson, 2016; Kassim *et al.*, 2017). Society 5.0 applies technological solutions, innovative organizing of social system and modeling of locally centered activities to overcome social issues by proactively working on liberation from various types of social constraints (Higashihara, 2018; Nakanishi, 2019).

Society 5.0 tries to eliminate big lots of work of employees, limitation of employees' physical abilities on job and physical constraints related to extended routine and exhausting work (Keidanren, 2016; SCTI, 2019; Shiroishi *et al.*, 2019). Use of automata, robots, new approaches to organization of work and working place, advanced work conditions and enrichment of work operations enables employees to use their resources and potentials for creative and interesting works (Lee *et al.*, 2015; Wang *et al.*, 2016).

Finally, researchers of Society 5.0 are modeling new cyber-physical environment through implementation of Industry 4.0 and Industry 5.0, which improves connections between people, things, humans' subjects and technologies in advanced cyberspace environment

(Keidanren, 2019; Shiroishi *et al.*, 2018; Nakanishi, 2019). Advanced technological solutions form high-value-added information infrastructures; this enables responsible cooperating of people, things and technologies in the modern society (Ruttan, 1997; Higashihara, 2018; Shiroishi *et al.*, 2019). At the same time, technological development offers useful technological solutions for several products and services, which can match responsible demands in society (Lee *et al.*, 2015; Shiroishi *et al.*, 2018). For instance, new technologies such as Internet of Things, robotics, artificial intelligence and big data in all industries and social activities provide goods and services that address manifold needs in more responsible ways (Foray and Grubler, 1996; Lee *et al.*, 2015; Nakanishi, 2019).

#### *Social responsibility of organizations*

Interest of organizations in their social responsibility beyond making profits for shareholders has become more widespread from 1960s onwards (Dunlap *et al.*, 1993; Aguilera *et al.*, 2007; Wang *et al.*, 2016).

Conceptualizations of CSR in organizations established multidisciplinary and multifunctional meaning of CSR (Aguilera *et al.*, 2007; Rego *et al.*, 2017). The multidisciplinary nature of CSR resulted through interdependent studies of environmentalism, which established the basic theory for building of CSR (Elkington, 2004; Glavas, 2016) management, which conducted solutions for operationalization of CSR in organizations (Aguinis, 2011; Wang *et al.*, 2016), and behavior theories, which reveal mechanisms for impact of stakeholders' behavior on organizational CSR (Wang *et al.*, 2016; Mulej and Dyck, 2015; Gelfand *et al.*, 2017). Results of these studies introduced conceptual and methodological frameworks for addressing the challenges in usage of CSR in organizations (Glavas, 2016; Wang *et al.*, 2016).

Dunlap *et al.* (1993), Carroll (1999) and Elkington (2004) broadened CSR with multifunctional modeling and consideration of organizations' care for environmental, social and economic environment. Environmental care expressed actions and initiatives to preserve the ecological environment for future generations (Elkington, 2004; Rego *et al.*, 2017). Social care draws on the relative importance placed by organizations on the social roles and norms expected by the internal and external societies (Windsor, 2006; Petrenko *et al.*, 2016). Economic care defines relative importance that organizations ascribe to the achievement of the economic results and economic prosperity of themselves, other people, groups, organization and society (Waddock and Graves, 1997; Kitmueller and Shimshack, 2012). These content-related studies established "guidance for conceptual frameworks and methods for addressing the management, organization, and societal challenges in CSR practices" (Wang *et al.*, 2016, p. 535). For example, Carroll and Shabana (2010) explored the arguments why the business community should accept and advance the CSR; Campbell (2007) revealed multidimensional research of CSR for integration of various CSR initiatives and arguments in organizations. Methodological studies revealed the variety of methodological approaches focused on broader understanding of CSR by reviews of CSR in academic literature, constructs of CSR's models in theoretical reasoning and conducting interviews (Carroll and Shabana, 2010; Crifo and Forget, 2015).

To avoid confusion owing to the available conceptualizations of CSR (Carroll, 1999; Dahlsrud, 2008), we followed Aguinis's (2011, p. 855) definition of CSR as "context-specific organizational actions and policies that take into account stakeholders' expectations and the triple bottom line of economic, social, and environmental performance".

More fragmented are results of organizations' conceptualizations of CSR in specific situations and under diverse circumstances (Aguinis, 2011; Gelfand *et al.*, 2017). These indicate differences and contradictories in institutional conditions (Wood, 1991; Hofman



*et al.*, 2017), organizational characteristics (Elkington, 2004; Petrenko *et al.*, 2016), cultural-cognitive preconditions (Glavas, 2016; Nedelko *et al.*, 2017) and used qualitative and quantitative approaches such as ISO 26000 (Mulej, 2011; Balzarova and Castka, 2012; Hahn, 2013) and solutions for implementation of CSR in rapidly changing social environment.

In the past decade, large attention among scholars was paid to studies which discovered correlations between changing of situational circumstances and CSR conceptualization (Wang *et al.*, 2016; Rego *et al.*, 2017). Following these studies (Aguinis, 2011; Elkington, 2004; Kish-Gephart *et al.*, 2019) and theories about cause-and-effects relationships between circumstances and phenomena in social reality (Macionis, 2012; Long, 2013; Glavas, 2016), we research advancement of CSR under circumstances of Society 5.0. We therefore, hypothesize that:

- H1. Prevailing situations and circumstances of Society 5.0 decisively define content-related consideration of CSR in organizations.

### **Integral frameworks for consideration of corporate social responsibility in Society 5.0 reality**

Beyond discussion about responsible economic development (Crifo and Forget, 2015), solving social issues (Glavas, 2016), humans-centered society (SCTI, 2019), regional grounding of sustainable development (Rego *et al.*, 2017) and definition of governing situational circumstances of modern society (Higashihara, 2018), Society 5.0 exposed decisive importance of technological development and innovative changing of society for creation of integral framework of sustainable development (Shiroishi *et al.*, 2018; Nakanishi, 2019). Inclusion of technology, innovations and innovativeness in sustainability enables improvement of organizations' diffusion of available sustainable solutions, creation of infrastructure and capacities for sustainable operating and behavior and supports advancement of priority sustainable areas of Society 5.0 (Keidanren, 2016; SCTI, 2019).

#### *Technological development and corporate social responsibility*

Despite efforts and capacity of organizations regarding their CSR, managers face certain limitations in adaptation of mechanisms and processes by which technological development and corresponding advanced technologies can be conceptualized into CSR in organizations (Cooper and Foster, 1971; Windsor, 2006; Crifo and Forget, 2015).

Technology was traditionally considered separately from social issues in humankind's history (Ruttan, 1997; Lasi *et al.*, 2014; Savaget *et al.*, 2019). Idea about interdependences of technology and social issues appears first in the sociotechnical theory developed in Second World War era (Cooper and Foster, 1971; Zwaan, 1975; Wang *et al.*, 2016), and systems theories developed in 1960s (Mulej, 2011; Glavas, 2016; Kish-Gephart *et al.*, 2019). Recently, broader views of technology indicate several short- and long-term technological alternatives, incremental technological changes and searching for technological solutions which can enable responsible development of society (Rego *et al.*, 2017; Savaget *et al.*, 2019).

The recent technological visions such as the European Industry 4.0 – published in German “High-Tech Strategy” in 2010 (Federal Ministry of Education and Research [BMBF], 2010; European commission [EC], 2017); the USA’s “Industrial Internet” scheme – proposed by General Electric in 2012 (Annunziata and Evans, 2013); and China’s vision of “Made in China 2025” (State council of People’s republic of China [SC], 2015) established modern understanding of relations between technological and humankind’s development. The related studies confirmed the leading role of technology in development from

information society to a super smart society in the frame of the 5th phase of industrial revolution (Lee *et al.*, 2015; Savaget *et al.*, 2019).

Several theorists and practitioners exposed deficiency of information sharing, humans-based collection of information in physical space, storage of data in traditional databases and limited capabilities of humans for analyzing the overflowing information in the present society (Pasmore *et al.*, 1982; Lasi *et al.*, 2014; Brunswicker and Chesbrough, 2018). Other studies reported that people access the partially connected cloud databases in cyberspace via the internet and access, retrieve and analyze data or information congruent with their physical and psychical possibilities (Foray and Grubler, 1996; Palazzeschi *et al.*, 2018). Consequently, people are burdened, and their labor and scope of action are restricted owing to age and varying degrees of their ability (Shen and Benson, 2016; Gelfand *et al.*, 2017).

Society 5.0 concept goes beyond these visions with interdisciplinary consideration of technology in modern society based on proposed “5<sup>th</sup> Science and Technological Basic plan” that complements the previously divided technological and social studies (Keidanren, 2019; SCTI, 2019). Modern technological solutions support and enable further development of responsibility in operating and behavior of society (Brunswicker and Chesbrough, 2018; Savaget *et al.*, 2019). Higashihara (2018) summarized the new understanding of technology with his quotation that “Development of Industry 5.0 incorporates new technologies in all industries and several social activities in solving of problems related to economic development and social issues”.

The newest technological visions (BMBF, 2010; Annunziata and Evans, 2013; SC, 2015) and Society 5.0 (Keidanren, 2016; SCTI, 2019) exposed importance of technology for interdisciplinary consideration of the phenomenon of society. In addition, studies of social-technological theory (Cooper and Foster, 1971; Savaget *et al.*, 2019) and systems theories (Crifo and Forget, 2015; Glavas, 2016) discovered important effects of technology on responsible development of the modern society.

More biased are academics’ presumptions about content-related inclusion of technology in CSR (Windsor, 2006; Wang *et al.*, 2016; Palazzeschi *et al.*, 2018). Individual studies established technology as an additional dimension of CSR and suggested completion of leading CSR models with technological dimensions (Windsor, 2006; Wang *et al.*, 2016). Researches in social sciences mainly considered technologies only as preconditions for organizational development and not as a logical part of CSR (Lee *et al.*, 2015; Shiroishi *et al.*, 2018). For example, researches about impact of new technologies on organizational operating and behavior (Ruttan, 1997; Foray and Grubler, 1996) and needs for technological solutions which can match the newest demands of society (Brunswicker and Chesbrough, 2018; Palazzeschi *et al.*, 2018) still considered technology separately from sustainable development in organizations.

#### *Innovations and innovativeness in Society 5.0*

Society 5.0 established innovations and innovativeness as necessary preconditions and leading accelerators for solving of sustainability problems in society (Keidanren, 2016; SCTI, 2019).

Mainly, activities of organizations are dedicated to technological innovations (Armbruster *et al.*, 2008; Afuah, 2019) which academics conceptualized as “developing of new services and products that fulfill unaddressed needs or enable solving of problems in internal and external environment of organizations” (Agarwal and Prasad, 1998; p. 205) and as “a new or improved product or process whose technological characteristics are significantly different from before” (Organisation for Economic Co-operation and Development [OECD], 2005, p. 5).

Society 5.0 continues this research stream and broadens innovativeness with non-technological innovations, social innovations and innovativeness. It can enable organizations to prepare themselves and their stakeholders for sustainable development to qualify stakeholders for their active participation in it and forming of appropriate behavior for social acceptance and social adoption of the new technological environment (Shiroishi *et al.*, 2018, 2018; SCTI, 2019).

Society 5.0 followed the 3rd edition of the Oslo Manual (OECD, 2005, p. 5) in analyzing of nontechnological innovations as “context-specific organizational actions and policies that take into account stakeholders’ expectations and the triple bottom line of economic, social, and environmental performance.” More about nontechnological innovations can be seen in Damanpour (1991), Brunswicker and Chesbrough (2018) and Afuah (2019). More differences exist between Keidanren (2016) and others leading definition (Damanpour, 1991; Brunswicker and Chesbrough, 2018) of social innovations. Literature reported about several conceptualization of social innovations characterized by definition of the criteria for social objectives, social interaction between participants, definition of social outputs and forming of innovativeness (Hubert, 2010; Brunswicker and Chesbrough, 2018; Afuah, 2019). So did European Union which defined them as innovations which are focusing on social needs that traditionally were not considered and tackled and changing of present social relations through empowerment of individual, groups and nongovernment organizations in society (OECD, 2005; Afuah, 2019; Savaget *et al.*, 2019). Keidanren (2016; p. 8) define social innovations in more sustainable-oriented way as “a new social practices that aim to meet sustainable social needs in a better way than the existing solutions, resulting from working conditions, education, community development or health”.

When engagements for innovations are in forefront of interests among organizations, less attention is dedicated to innovativeness as necessary precondition for diffusion of inventions or innovations (Damanpour, 1991; Afuah, 2019). Attention to innovativeness as the individuals’, organizations’ and societies’ inclination to engage in development and implementation of innovations gained currency in the 1970s (Agarwal and Prasad, 1998; Brunswicker and Chesbrough, 2018; Afuah, 2019). Initial studies were focused on building of fundamental theories and corresponding models for innovative challenges in organizations (Agarwal and Prasad, 1998; Armbruster *et al.*, 2008; Brunswicker and Chesbrough, 2018). Thus, Rogers (1962) presented an analytical model for adoption of innovations, Dahlsrud (2008) defined key dimensions and researched their relations to innovativeness, and Kassin *et al.* (2017) researched mechanism by which organizational behavior impacts innovativeness. Newest studies expanded previous models with situational, behavioral and values variables (Brunswicker and Chesbrough, 2018; Afuah, 2019; Savaget *et al.*, 2019). For example, Kassin *et al.* (2017) researched mechanism by which organizations’ behavior impacts innovativeness, and Afuah (2019) reported about effects of situational variables on innovativeness in organizations.

Society 5.0 concept contributes to study of innovativeness by analyzing of precondition, solutions for acceleration of innovations and goals for realization of invention–innovation–diffusion process (Higashihara, 2018; Nakanishi, 2019). Studies of Shiroishi *et al.* (2018) about security and human well-being and of Shiroishi *et al.* (2019) about artificial intelligence and business polity continue situational and behavior studies of innovativeness in framework of Society 5.0.

In addition, a number of studies about influential factors and components of innovativeness issues in organizations – such as circumstances and conditions, factors, components, parts, internal and external relations and impacts of innovativeness on invention–innovation–diffusion process and results of organizations and society (Lee *et al.*,



2015; Palazzeschi *et al.*, 2018; Savaget *et al.*, 2019) – presents promising directions for future inquiry of innovativeness in Society 5.0.

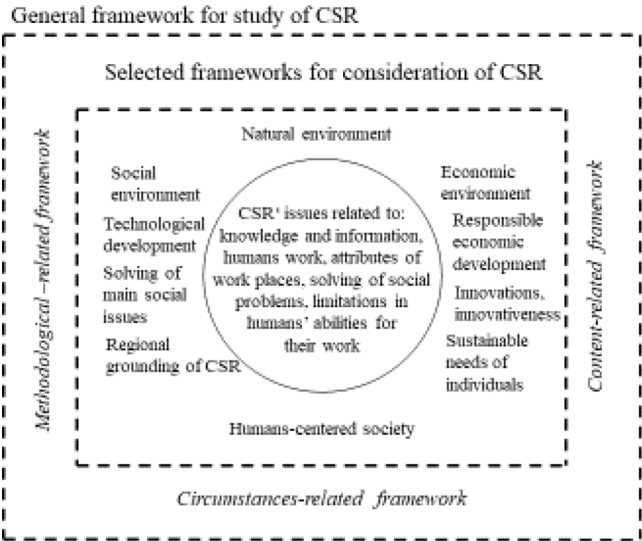
An overview of the theoretical cognitions about research of social phenomena (Whetten, 1989; Aguilera *et al.*, 2007; Glavas, 2016; Gelfand *et al.*, 2017) included suggestions and proposed solutions of Society 5.0 concept for sustainable development (Keidanren, 2016; SCTI, 2019); it also presented governing characteristics of the modern society (Higashihara, 2018; Nakanishi, 2019; Shiroishi *et al.*, 2019), which defined framework for consideration of CSR grounded in circumstances of Society 5.0 (Figure 1).

**Directions for future consideration of corporate social responsibility in Society 5.0**

Origins, orientations and suggested solutions of Society 5.0 (Keidanren, 2016; SCTI, 2019) importantly change understanding and realization of CSR in organization regarding goals, approaches and expected results of sustainable development (Higashihara, 2018; Nakanishi, 2019; Shiroishi *et al.*, 2019). For the purpose of this study, we continue with analyzing of content-related changes among environmental, social and economic dimensions of CSR grounded in Society 5.0.

*Environmental dimension of corporate social responsibility under circumstances of Society 5.0*

Studies on environmental dimension of CSR expose the relative importance that organizations place on plants, animals, ecological environment and the entire Earth (Aupperle *et al.*, 1985; Aguinis, 2011; Windsor, 2006). In modern society awareness about the crucial importance of nature protection is a generally accepted axiom (Shen and Benson, 2016; Rego *et al.*, 2017), which originates in developed human values about protection of nature, legislations about nature and enforcement of sustainable development in society (Glavas, 2016; Petrenko *et al.*, 2016; Nedelko *et al.*, 2017). While inclination to nature protection among society stakeholder constantly grows, organizations’ operating and



**Figure 1.**  
Integral framework  
for CSR under  
circumstances of  
Society 5.0

results still do not match enough societal expectations and demands related to nature (Windsor, 2006; Kish-Gephart *et al.*, 2019).

Society 5.0 supplements environment-related discussion with orientation of organizations for production, which can enable covering of existing environmental demands and tries to achieve a forward-looking expectation about environment (Waddock and Graves, 1997; Gelfand *et al.*, 2017). Keidanren (2016) wants to supplement traditional moral and legal (Carroll and Shabana, 2010; Nedelko *et al.*, 2017) obligations of organizations toward nature with their interests for contentment of market opportunities related with production of goods for natural protection (Aguinis, 2011; Wang *et al.*, 2016). Society 5.0 presumes that reliable production of responsible goods enables long-range profitable results of organizations with their fulfillment of market-based demands related with care for nature (Nakanishi, 2019; Keidanren, 2016). Organization can realize this orientation with responsible production, responsible products and services, usage of leaning technologies and innovative use of advanced technological solutions (Glavas, 2016; Gelfand *et al.*, 2017). For example, Dunlap *et al.* (1993), Aguilera *et al.* (2007) and Aguinis (2011) exposed significant effects of advanced technologies and newest products for ecological activities such as recycling, conservation or managing wastes. In present market situation, each of these solutions enables organizations to improve their competitiveness and business results that consequently enlarge organizations' interest for further sustainable operating and behavior (Foray and Grubler, 1996; Wang *et al.*, 2016).

Beyond the current market-related interests for natural care, there are also society's needs for advanced technologies and goods, which can substitute exploitation of limited natural resources and repair past natural damages (Aupperle *et al.*, 1985; Savaget *et al.*, 2019). A Society 5.0 applies a variety of technological and technical solutions and goods to enable substitution or replacement of natural resources designated to reduction of greenhouse gas emissions, increased responsible production, reduced loss of foodstuffs, sustainable industrialization, if we mentioned just some of them (Pasmore *et al.*, 1982; Savaget *et al.*, 2019).

This type of advancement is not possible without innovative longitudinal visions of organizations and large investment in necessary infrastructure for usage of advanced technologies (Lasi *et al.*, 2014; Lee *et al.*, 2015; Shiroishi *et al.*, 2019). Several cases of new technologies – such as artificial intelligence, data mining and genetic engineering – proved correctness and economic rationality of advanced technologies in solving of resources issues (Kitzmueller and Shimshack, 2012; Palazzeschi *et al.*, 2018; Savaget *et al.*, 2019). In addition, management theory proved that development of responsible new product can generate new market for their trade; this is an additional argument which strengthens organizational interest in responsible operating in the prevailing sustainable orientation of the modern society (Agarwal and Prasad, 1998; Crifo and Forget, 2015; Afuah, 2019).

#### *Social dimension of corporate social responsibility under circumstances of Society 5.0*

Organizations with social orientation express their responses to social roles and norms expected from them by the internal and external societies (Aupperle *et al.*, 1985; Rego *et al.*, 2017). McWilliams and Siegel (2000; p. 605) explained organizational social operating and behavior through their support “to actions that appear to further some social good, beyond the interests of the firm and that which is required by law.” Study of Glavas (2016) and Wang *et al.* (2016) additionally revealed that social actions and behavior of organizations can reduce social, business and legal risks of organizational operating on the base of adjustment of organizations' social characteristics to the expected social roles and norms of societies in which they participate.

Society 5.0 complements social orientation of CSR of organization with content-related and methodological frameworks for creation of innovative solutions and guidance designated for solving of urgent social problems in modern society (Minton and Khale, 2014; Wang *et al.*, 2016; Kassin *et al.*, 2017). The current level of development is characterized by complex social issues of constantly growing economy which cause increasing demands for energy and foodstuffs, longer lifespan and aging of population in societies around the world (Aguilera *et al.*, 2007; Shen and Benson, 2016; Savaget *et al.*, 2019). In addition, globalization opened several development issues related with its progressing, severe international competition, concentration of wealth in parts of the world globe and inequality of regional development, among others (Crifo and Forget, 2015; Glavas, 2016). Society 5.0 suggested integral framework for overcoming of the existing regional, age and gender gaps to enable production of goods tailored to satisfy diverse individual needs and latent needs (Keidanren, 2016; SCTI, 2019).

Content-wise, Society 5.0 broadened consideration of social issues with activities, which can solve the rising social problems and reduce consequences of social problems, such as promotion of social care, prevention programs and providing lively support to social care (Higashihara, 2018; SCTI, 2019). Methodologically, collections of integrated data about social issues, analyzing them with advanced solutions and usage of newest technological solutions for operating social activities created integrated framework, which can enable better governing of social issues in organizations and improvement of social care in society (Keidanren, 2016; Nakanishi, 2019). Guidance for solving of individual social problems is focusing on reduction of the social costs, solving the operational problems in social activities, strengthening competitiveness in social industries, enhancing responsiveness to dynamic demographics trends, dealing with diverse social needs and improving satisfaction of participants in social activities (Keidanren, 2019; SCTI, 2019).

For purpose of this study, we briefly outline only solving of health-care and caregiving social issues, while a detailed presentation of all important social issues in Society 5.0 exceeds the scope of this research (Petrenko *et al.*, 2016; SCTI, 2019). Social systems of health care and caregiving are networks of basic elements – data and information collection, equipment, capacities and participants, their relations in social system and its relations with other systems in society (Higashihara, 2018; Keidanren, 2019). This typical structure remains fixed, but Society 5.0 innovatively redesigns processes, extent of flows and process goals in social systems in human effort for better use of available elements and sources (Keidanren, 2016; SCTI, 2019).

Thus, the newest technological solutions (such as artificial intelligence and big data) enable generation of accurate data on the present situation – including personal real-time physiological data, health-care site information, treatment/infection information and environmental information (Shiroishi *et al.*, 2018). These data can be treated by technological tools for real-time analyzing that enables creation of feedback information and solutions for social issues which can be solved by participants of the system, or they can be automatically solved by automatized or robotized equipment (Keidanren, 2019; Savaget *et al.*, 2019).

Society 5.0 focused its attention on (Keidanren, 2019; Nakanishi, 2019) reduction of humans' burn-out through support actions for comfortable living, extension of healthy life span with health promotions which include early detection of illnesses through real-time health check-ups, reduction of medical costs with optimal treatment through sharing of physiological and medical data and reduction of social costs with reduction of burden through mitigation of the on-site burden of health care and caregiving by automata and robots.

### *Economic dimension of corporate social responsibility under circumstances of Society 5.0*

Society 5.0 grounded new economic consideration of responsible development on society and organizations levels. On societal level, scholars of Society 5.0 followed the prevailing economic system in society (Altvater, 1993; Campbell, 2007; Kitzmueller and Shimshack, 2012).

Academics define economic system as entity of starting points, mechanism of impacts and conditions and expose its effects on economic operating and behavior of organizations as subjects on micro-economic level (Dahlsrud, 2008; Crifo and Forget, 2015). In the 19th and 20th centuries, idea of “market economy” leads humans’ development through “economic system in which the decisions regarding investment, production, and distribution are guided by the price signals created by the forces of supply and demand” (Gregory and Stuart, 2004; p. 21). For instance, Altvater (1993; p. 237) has explained market economy through “three development phases, namely free market, *laissez-faire* system, and interventionism.” Free market and *laissez-faire* systems are based on presumption about restricted states’ activities in providing selected public goods and services and safeguarding private ownership and do not consider responsibility of organizations explicitly (Gregory and Stuart, 2004). Interventionism recognizes responsibility as a decisive goal of organizations through presumptions about government’s active role in correcting market failures and promoting social welfare (Gregory and Stuart, 2004; Crifo and Forget, 2015). Society 5.0 accepts interventionism’s responsibility as the prevailing starting point for establishing the newest “sustainable economic system” and corresponding business models, in consideration of economics orientation of organizations and their relations to other CSR dimensions (Altvater, 1993; Crifo and Forget, 2015; Wang *et al.*, 2016).

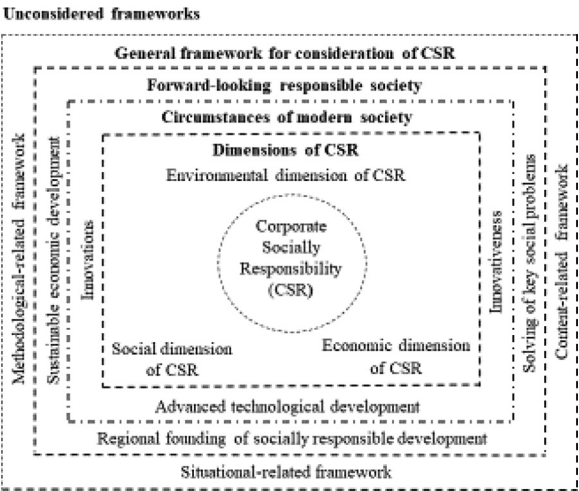
On the organizational level, Society 5.0 follows the idea about “responsible economics of organizations” presented by Waddock and Graves (1997), Aguinis (2011) and Crifo and Forget (2015). In addition, Keidanren (2019) determines “responsible economics” as the main reason for implementation of CSR in organizations. Such understanding of economic dimension of CSR originates in presumptions that CSR’s products and services present unexploited market opportunities which organizations can realize through their CSR operating and behavior as response to market imperfections to satisfy CSR preferences (Crifo and Forget, 2015; SCTI, 2019). Moreover, Society 5.0 established “responsible economics of organizations” as the decisive driver for market-based decision related with CSR in organizations and necessary criteria for evaluation of CSR in organizations and their parts (Higashihara, 2018; SCTI, 2019). Such understanding of economic dimension of CSR initiates changing of the traditional orientation on “profit maximization” to “responsible economics” in support of sustainable economic results of organizations and creation of responsible economics’ justification of natural and social dimensions of CSR (Waddock and Graves, 1997; Windsor, 2006). The monopolies replacing the free market, under the label of no interventionism, are left aside (Windsor, 2006; Wang *et al.*, 2016), unfortunately.

In addition, “responsible economics” enables organizations to balance achievement of economic goals understood as “discretionary and mandatory responsibility of enterprises” (Friedman, 1970, p. 123) and “prediction of strong long-term social benefits of relatively unfettered markets operated by self-interested actors” (Jensen, 2000, p. 41) and appropriate “ethics of organizations related to CSR” (Carroll, 1999; p. 274).

### **Integral model of corporate social responsibility in Society 5.0**

Vision of Society 5.0 offered a new understanding of the role and importance of technological development for solving of current social problems in modern society, initiatives and actions for further development of the known social concepts of sustainable society and expose decisive importance of innovations for humankind’s and society’s survival (Keidanren, 2016; Higashihara, 2018; Keidanren, 2019).

**Figure 2.**  
Integral model of CSR  
founded on  
circumstances of  
Society 5.0



According to vision, policies and actions of Society 5.0 (Keidanren, 2016; Higashihara, 2018) and sustainable development (Aguinis, 2011; Wang *et al.*, 2016) and in tradition of theories about social functionalism and organizational contingency (Myers, 2010; Long, 2013; Kassin *et al.*, 2017), we designed an integral model of CSR founded on circumstances of Society 5.0 (Figure 2).

The suggested model of CSR includes general and specific frameworks for broader or even potentially “holistic consideration.” Model offers possible explanation of effects of modern society’s circumstances on changing of CSR in accordance with several unadjusted issues of the general research framework (Carroll, 1999; Minton and Khale, 2014; Kassin *et al.*, 2017). Literature reveals wide disparities in the research findings about theoretical framework for consideration of social phenomena in responsible development of society (Windsor, 2006; Glavas, 2016; Gelfand *et al.*, 2017).

Several studies were focused on cognition, definition and application of a general research framework and defined the prevailing theoretical perspectives, driving forces, explaining theories and selected important domains for consideration (Dahlsrud, 2008; Potocan and Cruz-Cuhan, 2012; Kish-Gephart *et al.*, 2019). In addition, application of general framework is decisively effected by individuals’ decisions about chosen contents, values and weights of all criteria, which define their content and formulation of different outcomes inside the selected criteria and values for general definitions of the problem (Glavas, 2016; Gelfand *et al.*, 2017). Owing to these subjective factors of decision-makers and other subjective impacts of personal behavior, no general framework for consideration can be fully unified. In our research, we follow tradition of social psychology (Minton and Khale, 2014; Kassin *et al.*, 2017) for creation of research which includes methodological-, content- and situation-related frameworks for consideration of CSR according to previous studies of sustainable development and CSR theory (Dunlap *et al.*, 1993; Campbell, 2007; Wang *et al.*, 2016).

Inside the created general framework, we clarify differences between many insights in CSR with definition of specific framework focused on goals of forward-looking responsible society, circumstances of modern society and content of CSR’s dimensions, which govern CSR in modern organizations. With each specific framework of the model, we presented



contently similar solutions; frameworks follow the natural hierarchy of sequence and interdependence (Mulej and Dyck, 2014; Mulej and Cagran, 2015; Potocan *et al.*, 2016).

A further framework revealed the main goals of forward-looking responsible society which effect the direction of present changing and future development of CSR in organizations. Following goals of Society 5.0 (Keidanren, 2019; SCTI, 2019) and demands of CSR in organizations (Elkington, 2004; Wang *et al.*, 2016; Rego *et al.*, 2017), the model exposed needs for inclusion of technological development in CSR consideration, realization of sustainable goals of economic development and solving of growing social problems in modern society.

The next framework presented circumstances of modern society which governs CSR in organizations and which are prerequisites for further achievement of sustainable and human-oriented society. Model exposed importance of technological, nontechnological innovations, development of innovativeness on all levels of human living and operating and regional focusing of further CSR development (Agarwal and Prasad, 1998; Brunswicker and Chesbrough, 2018). Society 5.0, for the first time, revealed importance of regional orientation of CSR, which enables more applicable CSR solutions, supports more human-oriented development and increases interest of individuals and organizations in applicable solutions of CSR.

The final framework determines content-viewpoint of modern CSR. Our research followed previous cognitions about content characteristics and relations of CSR originated in triple bottom model which includes environmental, social and economic dimensions. We complement previous cognitions with revealing of specific orientations of CSR in modern society related with achievement of comfort, vitality and high-quality lives of humans and innovative approaches to their realization. Provision of goods and services granularly addresses manifold latent needs without disparities, balances the economic advancement with the resolution of social problems and advances fusion of technological and social advances to enable CSR in Society 5.0.

## Conclusion

In 2016, the Keidanren launched the Society 5.0 as a sustainable vision of a new society that incorporates several new technologies in all industries and social activities and achieves both economic development primarily based on sustainable development goals established by the United Nations and solutions to significant social problems in the present society (Keidanren, 2016).

Society 5.0 is based on recognition of leading circumstances of modern society to suggest a new understanding and changing of CSR operating and behavior in organizations.

Society 5.0 considers Industry 4.0 and belonging new technologies for sustainable development of society (Wang *et al.*, 2016; Savaget *et al.*, 2019) which enables solving of key social issues in present society (Zwaan, 1975; Foray and Grubler, 1996; Ruttan, 1997; Windsor, 2006). Scholars used Industry 4.0 for definition of initial technological circumstances in diverse technological situations and heterogeneous solutions of technological development in consideration of humankind's development (Higashihara, 2018).

In addition, Society 5.0 reevaluated interest in socially responsible development among stakeholders of society. Environmentalism theorists defined social responsibility primarily as aspiration for natural and social well-being, but in reality, interest of organizations for socially responsible development decisively depends on their economic interest in contentment of responsible demands of society (Glavas, 2016; Kassin *et al.*, 2017). Thus, Society 5.0 recognized economic interests and goals of organizations as promising initiatives

for further development of CSR in organizations operating in humans-centered society (SCTI, 2019). This pragmatic approach enables acceleration of CSR in current circumstances of market economy and supports CSR's advances in further sustainable economic systems.

Finally, Society 5.0 is created for solving of significant social problems in the present society, caused by longer lifespan, aging societies, concentration of wealth and regional inequality (Nakanishi, 2019; SCTI, 2019). The Keidanren (Keidanren, 2016) exposed organizations' ability for solving important social problem of individuals in local environment as central motive for further development of responsibility. Thus, Society 5.0 defines agenda on crucial social problems in modern society in local environment, possibilities for solving of individual social problems through organizational activities and creation of practical guidance for organizational advancement of social responsibility in organizations.

In practice, Society 5.0 can enable creation of new values through innovations focused on the provision of products and services adopted for diverse individual needs and latent needs. Achievement of promising results of 5.0 depends on infrastructure preconditions, human values and level of knowledge and capacities of society's stakeholders for connections of people, things, humans' subjects and technologies in advanced cyberspace environment (Higashihara, 2018; Nakanishi, 2019; SCTI, 2019). This process can enable creation of new values through innovations focused on the provision of products and services adopted for diverse individual needs and latent needs. In this framework, Society 5.0 recognized innovations, especially social innovations, and innovativeness of all stakeholders in society as necessary preconditions for development of information society into human-centered society based on CSR and socially responsible society composed of individuals and their organizations.

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