BEYOND BUDGETING – A FAIR ALTERNATIVE FOR MANAGEMENT CONTROL?
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EXAMINING THE RELATIONSHIPS BETWEEN BEYOND BUDGETING AND ORGANIZATIONAL JUSTICE PERCEPTIONS

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Abstract:

Since the seminal work of Chris Argyris research has realized that the design of Management Control Systems (MCS) has a significant impact on the social framework of an organization. This influence has been discussed in literature for decades. But there has been no holistic alternative for budget related MCS until the development of Beyond Budgeting (BB). Even though BB proponents claim that BB empowers organizations to become more adaptable, efficient and fair and is able to reduce unethical behaviors, BB has not been adopted by a considerable amount of organizations. One reason for this conservative attitude of organizations might be the lack of a framework that makes it possible to assess the possible advantages of BB for a specific organization. Current research suggests evaluating MCS in terms of their impact on organizational justice perceptions. Building on these new empirical findings, our paper tries to contribute to a better understanding of the potential advantages and disadvantages of BB by assessing the impact of BB characteristics on organizational justice perceptions. After identifying BB core characteristics, these characteristics are assessed regarding their impact on organizational justice perceptions. Partial least squares regression is applied to evaluate the relationship between BB core characteristics and organizational justice perceptions. Our results suggest that applying BB might enhance informational and interpersonal justice perceptions and therefore be beneficial for knowledge-based organizations.

Key words: Management control systems; Beyond Budgeting; Fairness; Organizational justice; Autonomy; Social support

1. Introduction

Beyond Budgeting (BB) is a holistic alternative MCS, designed for knowledge-based organizations. It aims to create a more adaptive organization that is able to respond quickly to fast-changing market requirements and to achieve the full values and potentials of the organization's intellectual capital. This includes a new understanding of leadership towards a radical decentralization of the organization but also a set of tools for new processes which supports these changes and engenders a new culture of self-direction and responsibility (Hope and Fraser, 1997, pp. 20 ff., 2003, p. xix; Bogsnes, 2013, p. 20; Bunce *et al.*, 2001, p. 62; Pfläging, 2003, pp. 84 f.). BB is not a MCS related tool like BSC or activity based costing, but rather a frame that houses and connects these innovations into a new organizational culture (Ax and Bjørnenak, 2007, p. 373; Becker *et al.*, 2010, p. 47). The accounting tools and techniques used by BB (e.g. BSC or activity based costing) are not new but BB introduces a new kind of usage and development of those tools, apart from command and control and Theory X (Bourmistrov and Kaarbøe, 2013, p. 208). The purpose of BB is not the abolishment of budgets but to build a human and agile organization that is able to continuously outperform its peers. In this context the abolishment of budgets in the sense of fixed performance contracts is just a **means to an end**. BB proponents criticize fixed performance contracts as they engender wrong behaviors and destroy organizational trust. But trust is seriously needed to empower and motivate knowledge workers and ultimately outperform competitors. Thus, fixed performance contracts can be regarded as a barrier for sustainable management and high performance (Bogsnes, 2013, 20 ff; Hope *et al.*, 2011, pp. 54 f.).

Argyris (1953) already found that MCS with a high emphasis on motivational control led to a situation where employees were not able to trust each other. This lack of trust evoked a departmentalized view of those organizations that were examined by Argyris. He observed that these organizations were not able to act as a living organism but more as a sum of various unconnected parts. Further, it has been criticized that budgetary control based MCS evoke a hierarchically centered command and control management that may have a negative effect on organizations (Hope and Fraser, 2003, p. 16; Kaplan and Norton, 1992). Recent research also suggests that these MCS leave managers in comfort zones instead of providing inspiration or motivation to stretch (Bourmistrov and Kaarbøe, 2013). Despite this criticism of budgetary based MCS and fixed performance contracts, budgetary control is quite prevalent in organizations. With almost no exceptions, budgetary control constitutes the basis of Management Control Systems (MCS) in organizations all over the world. And there seems to be no considerable will to fundamentally change this system (Hansen *et al.*, 2003; Libby and Lindsay, 2010).

Notwithstanding the potential shortcomings of budgetary control based MCS, there are some undeniable benefits for organizations. Budgetary control offers proven structures and procedures and therefore grants control and stability to organizations (Rodríguez Rivero, 2013, p. 81; Libby and Lindsay, 2010, p. 60). Leaving the security of these proven structures behind means a considerable challenge for organizations. This challenge not only concerns new procedures, structures and tools but also new mindsets of managers

and employees. Even though most organizations might profit from offering their knowledge workers more autonomy and room for self-realization, that kind of cultural change might be a real barrier for most organizations as it requires trust, time and perseverance (Bogsnes, 2009; Heupel and Schmitz, 2015). Moreover, trust can only be established by the organization itself, it is not purchasable by engaging consultancies (Becker et al., 2010). The requirement for more autonomy for experts on the one hand and the necessity of securing stability and control on the other ultimately lead to a "control dilemma" that prevents organizations from achieving dynamic development (Hope et al., 2011, p. 19).

McGregor (1960) already described this tension between the need for control and the need for more autonomy and employee participation. He concluded that command and control centered MCS might be detrimental for knowledge-based industries. He developed a new management philosophy – Theory Y – that should allow for more intrinsic motivation and self-realization for knowledge workers. Building on McGregor, (1960) and Maslow, (1948), Hopwood, (1974) proposed not exclusively relying on hierarchical control but developing an optimized interplay of hierarchical control, social control and self-control. Norton and Kaplan (1992) developed the Balanced Score Card (BSC) to connect organizational goals as well as strategic and operational planning and ultimately overcome command and control centered management. However, all these new developments remain isolated solutions that often fail to take effect due to the lack of an MCS housing them (Bogsnes, 2009).

Table 1 summarizes the discussion of budgetary control based MCS and their impacts on organizations towards the development of BB:

Table 1: Budget related problem statements and the development of BB

Author (in chronological order)	Problem statement	Offered solution
Argyris (1953)	Budgeting is a powerful tool, but it causes dysfunctional effects in organizations.	No solution for this dilemma.
McGregor (1960)	Budgeting engenders a Theory X based management, which might harm modern knowledge-based organizations.	Theory Y school of thought as a first starting point to solve budget related problems.
(Hopwood, 1974)	Budgetary control emphasizes hierarchical control but does not include social and self-control mechanisms that might work more efficiently. An optimized interplay of these different control layers is crucial.	An optimized interplay of these different control layers is crucial.
Kaplan and Norton (1992)	Budgeting has engendered a hierarchically centered system of command and control that is not perceived to be efficient.	BSC as a tool to overcome the command and control management style and integrate the whole organization into strategic thoughts.
Hope and Fraser, (2003)	Budgeting drives unethical behaviors and destroys intrinsic motivation.	Development of Beyond Budgeting based on inductive research. BB is based on a management philosophy and houses different alternative tools that are able to replace budgeting. BB claims to significantly reduce unethical behaviors.

Bogsnes (2013)	Managers have Theory Y visions but use Theory X based systems (budgeting)	BB as an MCS that is rooted in Theory Y philosophy. BB fulfills all budgeting purposes more accurately by unbundling them and applying alternative tools. BB mechanisms build trust within the organization. Trust is more efficient than many control mechanisms.

Even though BB proponents claim that a BB based MCS engenders knowledge-based high performance organizations that are built on trust and fairness and therefore able to outperform those organizations based on budget related MCS, there does not seem to be widespread use of BB within organizations (Becker *et al.*, 2010; Heupel and Schmitz, 2015).

One reason for this cautious attitude of organizations towards BB might be that there is no framework that enables the assessment of the potential advantages of BB implementation. This lack of an evaluation framework seems to be crucial as a fundamental change of the MCS requires considerable efforts within an organization (Bogsnes, 2009). The current attempts to assess the advantageousness of BB are based on the complexity of the organization itself and on the uncertainty / dynamic within the organizational environment (Horváth, 2003; Sandalgaard, 2013; Weber and Linder, 2008). These attempts suggest that BB is not suitable for complex organizations as its focus on simplicity and efficiency might make it difficult to cover all the procedures and numerous details that are part of complex, large organizations. Further, they propose applying BB in situations where the organizational environment is dominated by uncertainties that make it difficult to plan and forecast the business development. In such situations, they regard BB as advanced, as it relies on internal markets and fast decision making which grants organizations a better adaptability to fast-changing market situations. However, (Becker *et al.*, 2010), who examined the development and dissemination of BB, show that most appliers of BB are large and complex organizations. Well documented case studies of BB organizations also show that BB has been practiced in some cases for decades (Kroner, 2011; Olesen, 2013; Pfläging, 2003; Wallander, 1999). This fact also may suggest that BB performed well under different degrees of environmental uncertainties during these periods of long-time usage. To summarize, there seems to be no framework that allows organizations and research to assess the advantages and disadvantages of BB under different organizational circumstances.

When searching for a framework that helps to assess the advantages and disadvantages of BB, more recent research, focusing on the relationship between MCS characteristics and organizational justice perceptions, may be of interest. These studies suggest that some MCS characteristics have a significant impact on organizational justice perceptions (Langevin and Mendoza, 2013; Lau and Tan, 2005, 2006; Ritter *et al.*, 2014; Maiga and Jacobs, 2007; Burney *et al.*, 2009; Hartmann and Slapničar, 2009). Organizational justice perceptions are of high interest in the context of the evaluation of BB, as they have been found to have a positive impact on various positive organizational outcomes like performance (Cohen-Charash and Spector, 2001), trust (Cohen-Charash and Spector, 2001; Colquitt *et al.*, 2001; DeConinck, 2010; Li and Cropanzano, 2009; Pillai *et al.*, 2001), organizational citizenship behavior (DeConinck, 2010) and employees'

satisfaction (Li and Cropanzano, 2009). Taking this potential benefit of an increase in the perception of organizational justice into account, it can be concluded that BB should be evaluated by the degree to which its characteristics enhance organizational justice perceptions.

2. The concept of organizational justice

To understand the role of organizational justice as a potential mediator between the design of BB characteristics and organizational outcomes such as trust or desired behavior, it is important to attain a precise understanding of the definition and concept of organizational justice. A common definition of justice is *"the extent to which norms of propriety or entitlement are fulfilled"* (Lind and Tyler, 1988, p. 3). Within an organizational context, scholars have developed the concept of organizational justice which has become one of the most popular areas of organizational behavior research (Colquitt *et al.*, 2005). Organizational justice is concerned with employees' perception of fairness in their working relationships. Employees are subject to decisions nearly every day of their working lives. As these decisions affect employees, not only in an economic but also in a socioemotional dimension, they are always subject to critical review by employees asking whether decisions made by their supervisor or the executive management are "fair" (Colquitt, 2001, p. 386). Research into organizational justice has shown that it is an essential key factor for encouraging positive attitudes and behaviors within an organization (DeConinck, 2010, p. 1350).

Organizational justice involves four dimensions: distributive, procedural, interpersonal justice and informational justice (Langevin and Mendoza, 2013, 211 f; Colquitt, 2001, p. 396).

Distributive justice is rooted in the concept of "fair share". In an organizational context, a fair share is an employee's anticipation regarding his or her allocated benefits in relation to what other employees should receive in his or her opinion. Distributive justice occurs when employees perceive the allocation of scarce resources such as pay, rewards, and promotions to be fair in relation to their work input (Deutsch, 1975, 141ff; Langevin and Mendoza, 2013, p. 211; Lind and Tyler, 1988, 10f; Maiga and Jacobs, 2007, p. 40), or in other words, if employees "get what they deserve" in their own opinion and in relation to their colleagues (Maiga and Jacobs, 2007, p. 40).

Procedural justice can be defined as *"an individual's perception of the fairness of procedural components of the social system that regulate the allocation process"*. The concept focuses on the individual's cognitive map of events that precede the distribution of rewards, and the evaluation of those events(Leventhal, 1980, p. 35). The concept of procedural justice can be traced back to the work of Thibaut and Walker (1975). Their observation of court room settings revealed two criteria that must be fulfilled in order to achieve procedural justice. Firstly, an individual should have *process control*. This means that it must be possible to voice own views and arguments during the process. The second prerequisite for procedural justice is *decision control*, the ability to influence the result of a procedure (Thibaut and Walker, 1975, pp. 118 f.). Leventhal (1980) developed these criteria further and formulated six criteria of perceived procedural justice (Leventhal, 1980,

pp. 40 ff.): Procedures should be consistent, free of bias, accurate, correctable, representative and must comply with conceptions of morality.

There are two different perspectives in research offering explanations as to why employees value procedural fairness (Langevin and Mendoza, 2013, p. 212). From the **instrumental perspective** of justice employees do not focus exclusively on their short-term results. Employees care about procedural fairness because it ensures that their long-term results are predictable and beneficial for them. From this point of view, employees are fundamentally concerned about their own benefits (Greenberg, 1990, p. 408; Lind and Tyler, 1988, p. 222). This instrumental view centers on material outcomes e.g. personal bonuses or resource allocation (Langevin and Mendoza, 2013, p. 212). From the viewpoint of the relational model or **group value model**, employees are concerned about procedural fairness because they want to be treated fairly by the group as it indicates their personal standing and value within the group. This model centers on psychological results e.g. self-confidence resulting from a high standing in the group and recognition from the group. The group value mode is based on the irrefutable fact that **every human being naturally strives to be a valued part of his/her group** (Lind and Tyler, 1988, 231 ff; Tyler, 1989, p. 837; Tyler and Blader, 2003, p. 352).

Another dimension of organizational justice is **interactional justice** which was introduced by Bies and Moag, (1986, pp. 43 ff.)**.** Bies and Moag found that even when people perceive a decision-making process and its outcome to be fair, they may perceive their treatment during these procedures as unfair. Employees not only demand a fair process and fair outcomes of this process but also a fair and respectful interpersonal treatment and fair communication (Bies and Moag, 1986, p. 46). ''By interactional justice we mean that people are sensitive to the quality of interpersonal treatment they receive during the enactment of organizational procedures'' (Bies and Moag, 1986, p. 44). While some researchers use interactional justice as the third dimension of organizational justice (Langevin and Mendoza, 2013, p. 212; Shapiro and Brett Jeanne M., 1993, p. 1167), others conceptualize only two dimensions (distributive and procedural justice) while subsuming interactional justice as a component of procedural justice (Brockner and Wiesenfeld, 1996, p. 189; Greenberg, 1990, 411ff; Maiga and Jacobs, 2007, p. 41). Some researchers divide interactional justice into two dimensions – **interpersonal justice** and **informational justice** – since   Greenberg showed that these dimensions have impacts independently from one another (Greenberg, 1993, 87ff; Langevin and Mendoza, 2013, p. 212). **Informational justice** focuses on the justifications and information provided truthfully to people. The open sharing of information promotes informational justice. **Interpersonal justice** deals with treating people with respect and dignity (Colquitt, 2001, p. 386; Greenberg, 1993, 84f; Langevin and Mendoza, 2013, p. 212).

Research has shown that even though the different dimensions of organizational justice interact with each other, they are still distinct (Brockner and Wiesenfeld, 1996, p. 206; Cropanzano and Folger, 1991, p. 136; Ambrose and Arnaud, 2005, 69 ff; Bies, Robert, J., 2005, pp. 94 ff.). In contrast to the presented model of organizational justice including different dimensions, some researchers question the advantage of examining different dimensions of organizational justice, proposing a shift towards an overall justice judgment (Ambrose and Arnaud, 2005, p. 79; Lind, 2001, pp. 65 ff.). For example, Lind

argues that individuals form an overall impression of their fair treatment within the organization by combining the different dimensions of justice (Lind, 2001, p. 72). The discussion is still ongoing in the current literature (Langevin and Mendoza, 2013, p. 212). However, there is some empirical support that organizational justice may be most suitably conceptualized into four different dimensions (distributive, procedural, interpersonal and informational) (Colquitt, 2001, p. 396). For this paper, it is important to understand how BB can affect the different dimensions of organizational justice. As all four dimensions of organizational justice must be included to obtain a holistic picture of these causal relationships, this paper will apply a four-dimensional conception of justice.

3.   Organizational justice as a new reference frame for the evaluation of BB

Now that an exact understanding of organizational justice and its four dimensions has been outlined, the question of how BB characteristics may influence organizational justice perceptions will be investigated. Therefore, BB core characteristics are identified from BB textbooks and their potential influence on organizational justice perceptions is hypothesized.

BB literature suggests providing well educated knowledge workers with a high degree of autonomy, especially when it comes to client related decisions but also regarding the determination of their own goals (Bogsnes, 2009, 2013). Autonomy shall be defined as the extent of freedom, discretion and independency to which an employee is allowed to make work related decisions, schedule work and select work methods. It includes three different dimensions of work related freedom in (1) scheduling of work (2) selection of work methods (3) making decisions (Breaugh, 1985, p. 556; Morgeson and Humphrey, 2006, p. 1323). Work autonomy therefore goes beyond participation in job related decisions as it includes an active design and personal involvement. Moreover, while participation gives employees the chance to present own ideas and co-design work related issues, work autonomy included into a job profile gives an employee ownership of work related issues (Dysvik and Kuvaas, 2011, p. 370). Nearly every decision concerning daily work situations is made by front-line teams that work directly with internal or external customers. Front-line teams are regarded as largely independent enterprises which act for the most part in a self-reliant way. This has a high impact on the team staff as a lot of functions (e.g. customer segmentation, pricing and marketing) are performed at the team level instead of being centralized departments. Therefore, a high amount of autonomy regarding daily work can be regarded as a core characteristic of BB that shapes the organization applying BB (Hope *et al.*, 2011). Thus, it can be assumed that a high amount of work autonomy is one core characteristic of BB.

In the context of evaluating BB characteristics in terms of their impact on organizational justice, it is therefore of great interest to hypothesize and assess the impact of work **autonomy** on organizational justice perceptions.

Another aspect that may be crucial for the implementation and execution of BB is social support. In a working context, social support can be regarded as th*e "degree to*

which a job provides opportunities for advice and assistance from others". Including *the "notion of supervisor and coworker social support" and the "construct of friendship opportunities at work"* (Morgeson and Humphrey, 2006, p. 1324). One aspect of BB is to create a culture of "love and care" (Hope et al., 2011). BB organizations even encourage their employees to build informational networks and friendships in order to engender a fast and respectful exchange of ideas and knowledge (Cäker and Siverbo, 2014). BB organizations also try to connect employees' and organizational interests as far as possible and rely on a respectful and appreciative contact between colleagues and between different hierarchical layers. BB organizations also try to make everyone in the organization care about the well-being of others (Bogsnes, 2009). Social support can therefore be regarded as another core characteristic of BB.

Now that two characteristics of BB have been formulated, it is possible to hypothesize their impact on organizational justice perceptions. Given the fact that the identified core characteristics of BB might affect especially the personal and the informational side of organizational justice, this paper focuses on those two of the four dimensions of organizational justice: interpersonal and informational.

Autonomy's impact on organizational justice:

The dimension of interpersonal justice regards the way people within an organization treat each other whenever they are interacting. High levels of interpersonal justice can develop when employees and managers treat each other with respect and dignity (Colquitt, 2001, p. 386; Greenberg, 1993, 84f; Langevin and Mendoza, 2013, p. 212) . The high degree of autonomy in BB organizations encourage employees to cooperate with each other within a professional and respectful environment (Bogsnes, 2009). This seems reasonable as employees in decentralized working settings rely on their colleagues' voluntary support to perform their work tasks. Morgeson and Humphrey (2006) indicate that autonomy encourages employees to care for each other and treat their colleagues with respect. Moreover, (Humphrey *et al.*, 2007) found a positive correlation between autonomy and employees' satisfaction with their workmates and supervisors (Humphrey *et al.*, 2007, p. 1343). Their results also suggest that within a work setting of high independence and freedom, employees treat each other with respect and dignity in order to provide an optimal basis for cooperation. Thus, it can be assumed that work autonomy also increases perceptions of interpersonal justice.

H1a: Work autonomy increases perceptions of interpersonal justice.

Within autonomous working groups, there is a lack of fixed instruction for most tasks, as the organization wants employees to find the best possible way to run their business. Employees in such settings might therefore have a greater motivation to look for the best way of running their business. This makes it beneficial to share information with each other (Cabrera *et al.*, 2006, p. 250). Pee and Lee found a positive significant relation between autonomy and employees' motivation to share their knowledge. They suggest that increasing autonomy within an organization increases employees' willingness to share information with each other (Pee and Lee, 2015, p. 688). Cabrera et al. found a significant positive relation between work autonomy and information sharing within the organization

(Cabrera *et al.*, 2006, p. 258). As the assurance of work autonomy seems to increase the sharing of information within an organization, it seems reasonable that this willingness to share information might also enhance perceptions of informational justice within an organization.

H1b: Work autonomy increases perceptions of informational justice

Social support's impact on organizational justice

Research suggests that social support within an organization enhances the ability of employees to deal with stressful situations (Morgeson and Humphrey, 2006, p. 1324). Within their study, Johnson and Hall (1988, pp. 1338 f.) found that employees who received social support within their working environment felt they had more work control and experienced less work related stress. Supporting each other is one key feature of BB related organizational culture. Moreover, BB organizations provide a culture where all members of the organization care for each other (Cäker and Siverbo, 2014; Bogsnes, 2009). Thus, social support as defined by Morgeson and Humphreys seems to be not only strongly pronounced within BB organizations but also seen as a key factor for its success. It might be suggested that social support has a positive impact on interpersonal justice as interpersonal justice is concerned with the way that employees and supervisors treat each other. Employees receiving a high amount of social support will probably feel they are valued and respected team members. And supporting others socially might also improve daily work interactions. Thus, it can be suggested that social support has a positive impact on interpersonal justice.

H2a: Social support increases perceptions of interpersonal justice.

Given that social support within BB organizations also includes the development of personal informal networks and friendships in order to share information and knowledge (Cäker and Siverbo, 2014; Hope *et al.*, 2011), it can also be assumed that BB's social support shapes the way information is shared within the organization. It can be suggested that sharing information and knowledge within informal networks among colleagues might enhance the amount of information truthfully provided to each employee. This increase of information shared between employees in a truthful manner might also enhance informational justice perceptions.

H2a: Social support increases perceptions of interpersonal justice.

Figure 1 displays the relationships between BB core characteristics and organizational justice perceptions as formulated in hypotheses H1a – H2b. These formulated hypotheses shall be tested in order to gain a better understanding of the interplay between the hypothesized constructs.
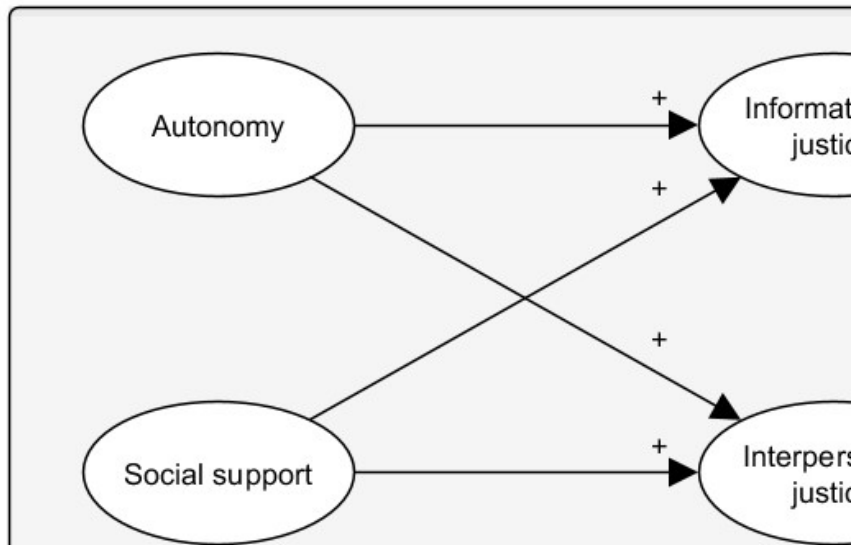
Figure 1: Hypothesized relationships between BB core characteristics and organizational justice

4. Method

Structural equation modelling (SEM) is applied to translate the hypothesized relationships into mathematical equations. SEM enables a statistic assessment of each hypothesized relation, as it represents a comprehensive and sophisticated statistical method for the testing and evaluation of relationships among different constructs and indicators. SEM is widely accepted as an advanced research tool and has become a standard tool for an exact evaluation of postulated relationships (Bliemel *et al.*, 2005, p. 9; Hoyle, 1995, p. 1; Weiber and Mühlhaus, 2014, p. 3). For the calculation of equations and the estimation of the model parameters the partial least squares (PLS) algorithm is applied. PLS represents a variance-based method for the estimation of model parameters. Compared with covariance-based solutions, PLS is superior for explorative researching settings. One reason for this superiority in explorative research settings is that PLS has more statistical power than covariance-based methods and is therefore more likely to detect effects that also exist within the population (Hair *et al.*, 2017). Given that no study could be identified that examines the relationship between autonomy in a work context and the four different dimensions of organizational justice, this study is more explorative in nature and PLS appears to be more suitable for the specific research situation of this paper.

5. Sample and measurement

The goal of this paper is to examine the impact of BB core characteristics (autonomy and social support) on interpersonal and informational justice perceptions of employees in order to provide a new framework for the evaluation of BB. To apply SEM and assess the relationships between the different constructs it is necessary to gather data.

To gather primary data, an online questionnaire is used. An email cover letter including the web survey link is sent out to CEOs of German cooperative banks combined with the request to distribute the letter including the web link to their employees. The online questionnaire was launched between 08.05.2017 and 11.01.2018. A total of 990 participants filled out the questionnaire. Following the recommendation of Hair *et al.* (2017), all cases in which more than 15 % of the questions were unanswered as well as cases with suspicious answers (e.g. where only the most extreme categories – 1 and 7 – were used) were excluded. Finally, a total of 738 usable answers were retained for the study.

The measurement of *autonomy* is based on the work design questionnaire developed by Morgeson and Humphrey (2006). This measure originally provides 9 items to measure work autonomy. To capture autonomy as described by BB literature (Hope and Fraser, 2003; Bogsnes, 2009; Pfläging, 2003; Hope *et al.*, 2011), the four most representative items were selected from the original measure.

Social support was also measured based on the work design questionnaire of Morgeson and Humphrey (2006). The original measure provides six items, from which the four items that best represent social support as described by BB literature were selected.

The four items for the measurement of interpersonal justice and the five items for the measurement of informational justice were adapted from (Colquitt, 2001).

All items were measured on a 7-point Likert scale. Overall, research suggests that a 7-point scale obtains the most reliable and valid results (Preston and Colman, pp. 2000, 12 f.) and also helps to obtain more variance in responses (Sarstedt and Mooi, 2014, p. 69).

Building on the conception of Jarvis *et al.* (2003, p. 201) all measurement models can be regarded as reflective measurement models.

6. Results

Before the outer model (structural model) is evaluated, it is useful to assess the inner model (measurement models of the constructs) (Hair *et al.*, 2017). Following the conception of Hair et al., Cronbach's alpha is used to evaluate the internal consistency reliability of each construct. To assess convergent validity, outer loadings are computed in order to assess the indicator reliability of each item. Additionally, the average variance extracted is applied to test the convergent validity on the construct level. Table 2 summarizes the outlined quality criteria for the different constructs and indicators:

Table 2: Assessment of the inner model

Construct / Indicator	Indicator reliability	Cronbach's alpha	AVE
Autonomy (AT)		0.879	0.734
AT1	0.823		
AT2	0.856		
AT3	0.854		
AT4	0.892		
Interpersonal Justice (IPJ)		0.944	0.856
IPJ1	0.926		
IPJ2	0.933		
IPJ3	0.944		
IP4	0.896		
Informational justice (IFJ)		0,932	0.785
IFJ1	0.892		
IFJ2	0.891		
IFJ3	0.894		
IFJ4	0.876		
IFJ5	0.878		
Social support (SU)		0.834	0.669
SU1	0.712		
SU2	0.814		
SU3	0.874		
SU4	0.862		

All four constructs obtain Cronbach's alpha values above the recommended threshold of 0.7 (Ohlwein, 1999) which implies that internal consistency reliability is given. Also, all outer loadings are above the threshold of 0.7 (Hair *et al.*, 2017) and all constructs obtain AVE values above 0.5 (Ringle and Spreen, 2007). Thus, it can be assumed that convergent validity has been established.

To ensure that discriminant validity is given as well, the heterotrait-monotrait ratio (HTMT) is computed. From a technical viewpoint, HTMT tries to estimate the true value of the correlation between two constructs as it would be if these constructs were perfectly measured. A HTMT value close to one would suggest that the specific construct is not distinct (Hair *et al.*, 2017, p. 118). Henseler *et al.* (2015, p. 124) suggest that HTMT is more suitable for assessing discriminant validity than alternative concepts (e.g. cross loadings). Table 3 shows the HTMT values for the different combination of constructs:

Table 3: HTMT values

	Autonomy	Informational justice	Interpersonal justice
Autonomy			
Informational justice	0.516		
Interpersonal justice	0.509	0.788	
Social support	0.555	0.502	0.610

The recommended threshold for HTMT includes all values below 0.85 (Henseler *et al.*, 2015). As all HTMT values are below the threshold of 0.85, discriminant validity has been established.

Summarizing the results of the quality assessment of the inner model, it can be assumed that all measurement models are reliable and valid and therefore suitable for the measurement of the constructs. This is a necessary condition for the estimation of the outer model, as this computation is based on the inner model.

Next, the outer model is evaluated using different quality criteria. First, path coefficients are used to describe the extent of correlation between the constructs. Path coefficients can have values between +1 and -1. Positive values imply a positive correlation and negative values imply a negative correlation between two constructs (Hair *et al.*, 2017). Values above +0.2 / below -0.2 are regarded as being significant (Chin, 1998a; Weiber and Mühlhaus, 2014). Additionally, R^2 values are applied to evaluate how well the model explains the endogenous constructs. R^2 expresses the proportion of variance of an endogenous construct that is explained through its predictor constructs. It is therefore regarded as an indicator of the model's predictive power and the central measure of PLS based SEM (Chin, 2010, p. 674; Hair *et al.*, 2017, p. 198; Henseler *et al.*, 2009, p. 303).

Table 4: Path coefficients

	Informational justice	Interpersonal justice
Autonomy	0.334*	0.264*
Social support	0.287*	0.422*
*Significant at 0.01 (bootstrapping confidence interval 99%)		

As Table 4 illustrates, autonomy has a strong impact on informational justice (0.334) and on interpersonal justice (0.264). Also, the impact of social support on informational justice (0.287) and on interpersonal justice (0.422) can be regarded as

relevant. As the significance of these effects cannot be tested by means of PLS, bootstrapping confidence intervals are calculated to determine the significance of the path coefficients at a predetermined significance level of 1% (99% confidence interval)[1]. The bootstrapping confidence intervals reveal that all four path coefficients are significance at a significance level of 1%.

Next, the R^2 values are calculated to gain a better understanding of how much variance in the informational justice and interpersonal constructs is explained by the exogenous variables (autonomy and social support). Table 5 presents the calculated R^2 values:

Table 5: R^2 and Q^2 values

|	R^2	Q^2
Informational justice	0.288*	0.210
Interpersonal justice	0.357*	0.284
*Significant at 0.01 (bootstrapping confidence interval 99%)		

Chin proposes interpreting R^2 values of ≥ 0.67, ≥ 0.33 and ≥ 0.19 as "substantial", "moderate" and "weak" as a basic rule of thumb (Chin, 1998b, p. 323). Following Chin's recommendation, the model's explanation for informational justice (0.288) may regarded as weak while the explanation for interpersonal justice (0.357) through the model may be regarded as moderate. However, as various studies suggest that there are many MCS related impact factors that influence organizational justice perceptions (e.g. Burney *et al.*, 2009; Hartmann and Slapničar, 2009; Langevin and Mendoza, 2013; Maiga and Jacobs, 2007; Ritter *et al.*, 2014), the contribution of the exogenous variables in this model can also be regarded as meaningful. Again, the significance level is tested by applying bootstrapping confidence intervals of 99%, which reveals that both R^2 values are significant at a level of 1%. Figure 2 displays the path coefficients and R^2 values of the structural model.

Additionally, Table 5 displays the Q^2 values which were calculated with the help of blindfolding[2]. In the context of PLS-SEM, the Q^2 criterion indicates if a model can accurately predict data that is not used for the estimation of the model parameters and therefore has "predictive relevance". A Q^2 value above 0 can be regarded as the threshold for the model's predictive relevance (Hair *et al.*, 2017). As shown in Table 5, all Q^2 values are clearly above 0, indicating that the model is able to accurately predict outside of the sample values.

Finally, the f^2 values are calculated to determine the effect size of the specific exogenous variables. The effective size expresses the specific impact of a predictor variable on the endogenous variable. Cohen (1988, p. 413) proposes that f^2 values ≥ 0.02 should be regarded as implying a weak impact, whereas f^2 values ≥ 0.15 are regarded as having a moderate and f^2 values ≥ 0.35 as having a substantial impact on the endogenous construct.

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[1] 5.000 bootstrapping samples and the bias-corrected and accelerated method were used to calculate confidence intervals. For a detailed presentation of significance testing with bootstrapping confidence intervals see Hair *et al.* (2017).
[2] The omitting distance was 7. For a detailed discussion of the blindfolding procedure see Hair *et al.* (2017).
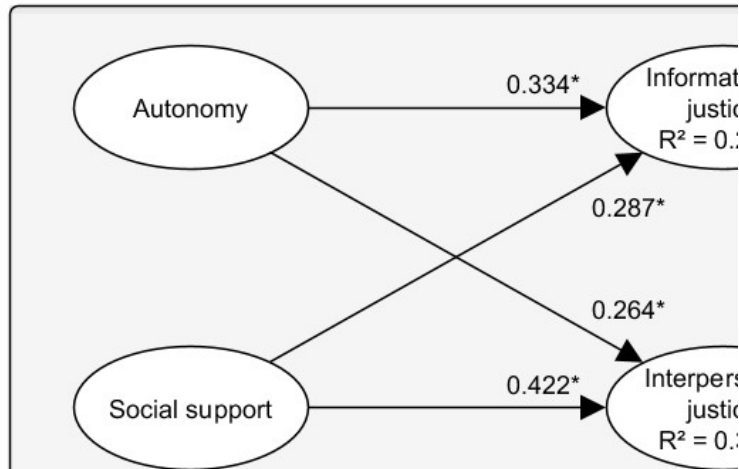
Figure 2: Path coefficients and R² results

Table 6: f² values

	Informational justice	Interpersonal justice
Autonomy	0.119	0.082
Social support	0.088	0.211

Table 6 shows a moderate effect of social support on interpersonal justice. The impact of autonomy on informational justice and interpersonal justice can be regarded as weak. Also, the impact of social support on informational justice is weak.

Overall, the results suggest that autonomy has a stronger impact on informational than on interpersonal justice while social support has a stronger impact on interpersonal than on informational justice.

7. Conclusion

Previous conceptions for the evaluation of the potential advantages or disadvantages of BB focused on environmental uncertainties and organizational complexity as evaluation criteria (Horváth, 2003; Sandalgaard, 2013; Weber and Linder, 2008). Complexity, at least, does not seem to have an impact on the advantages of BB for existing appliers. Moreover, especially large multinational corporations seem to profit from BB (Becker *et al.*, 2010). Also, uncertainty as an impact factor may be questioned, as some organizations use BB successfully in different market environments and over a long period of time with different environmental settings.

Our paper offers a new approach towards the evaluation of BB's potential advantages and disadvantages which is based on BB core characteristics' influence on informational justice and interpersonal justice.

Overall, the results suggest that there is a considerable impact of social support on interpersonal justice which also supports H2a. Even though the impact of social support on informational justice may be regarded as weak in terms of f² values, the effect is significant

and may contribute to the overall influence of MCS characteristics on informational justice. Therefore, H2b may be regarded as accepted.

Autonomy was found to have a weak but significant impact on informational and interpersonal justice. Given that there are many variables influencing organizational justice perceptions, this influence can still be regarded as substantial. Therefore, H1a and H1b may be regarded as accepted.

An interesting insight is that autonomy has a stronger effect on informational justice than on interpersonal justice while social support has a stronger impact on interpersonal than on informational justice. These findings seem logical. It may be assumed that autonomy can only work successfully in combination with open and truthful sharing of information between employees, departments and different hierarchical layers. Therefore, it seems to be obvious that granting employees more autonomy is usually combined with more truthful information sharing which in turn enhances informational justice. Also, the stronger impact of social support on interpersonal justice seems to be logical, as caring about colleagues and building friendships and informal networks at work might also enhance the respect and dignity in the daily transactions between colleagues which ultimately will enhance interpersonal justice perceptions.

Additionally, our results contribute to the literature on MCS characteristics' influence on organizational justice perceptions by adding two new antecedents of informational and interpersonal justice. The results also add more quantitative empirical knowledge to the body of literature on BB which has focused on inductive research and theoretical frameworks (Becker *et al.*, 2010). As our results suggest that autonomy and social support as core characteristics of BB really have a significant impact on organizational justice perceptions, they may also provide a guideline for further research on the effects of BB.

Our results may be especially interesting for knowledge-based organizations that are looking for MCS alternatives in order to empower their experts and knowledge workers and for organizations that are interested in applying BB in the future.

Limitations and outlook

This study is not without limitations. First, we focused on only two BB core characteristics. Of course, there might be more MCS characteristics that may be perceived as core characteristics of BB by its proponents and appliers. We selected autonomy and social support, as these characteristics play an important role in existing BB literature (e.g. Bogsnes, 2009; Hope and Fraser, 2003; Hope *et al.*, 2011). However, there may be more relevant BB characteristics that should be tested regarding their impact on organizational justice perceptions in future.

Further, we surveyed employees of cooperative banks in Germany which have not applied the BB concept yet. Therefore, a comparison with existing BB cases might shed more light on its impact on organizational justice perceptions in the future.

We also focused on two of the four dimensions of organizational justice. It may therefore be interesting to extend that focus on all four dimensions of organizational justice in the future.

8.   References

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