„Zeszyty Teoretyczne Rachunkowości”
tom 88 (144), 2016, s. 9–35

Stowarzyszenie Księgowych
w Polsce

Participative planning and information flow within management control

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Abstract

The paper examines the relationships between two different approaches to planning processes (participative and non-participative) and information flows within management control in companies. It augments the existing theoretical and empirical research by coupling management control and management information with participative planning, not only in operational but also in the strategic perspective. The results presented in the paper stem from two consecutive studies, conducted between November 2010 and January 2012 and between November 2013 and January 2014. The studies comprised 397 and 179 Polish companies respectively. The authors formulated two hypotheses linking participative planning with upward and downward management information flows. The paper employed a quantitative approach, using the Spearman rank correlation analysis and hierarchical clustering using the Ward method, which enabled comparative analyses both in reference to various groups of companies included in particular research samples and over time. The results obtained showed the positive influence of participative planning both on upward and downward information flows in enterprises. In particular, participative planning reduced information imbalances between top (the management) and lower (employees of functional departments) tiers in organisation structures.

Keywords: information flow, internal communication, management control, management information, participative planning, performance reporting.

Streszczenie

Planowanie partycypacyjne a przepływy informacji w controllingu

W niniejszym artykule autorzy badają relacje między dwoma podejściami do planowania – partycypacyjnym i odgórnym – a przepływami informacji zarządczych w przedsiębiorstwach w ramach controllingu. W uzupełnieniu dotychczasowych rozważań teoretycznych i badań empirycznych prezentowanych w literaturze zwracają oni uwagę na partycypacyjność planowania nie tylko w ujęciu operacyjnym, ale też strategicznym. Wyniki prezentowane w artykule odnoszą się do dwóch badań prowadzonych w okresach od listopada 2010 r. do stycznia 2012 r. oraz od listopada 2013 r. do stycznia 2014 r. Badania przeprowadzono w Polsce odpowiednio w 397 i 179 przedsiębiorstwach. Autorzy sformułowali dwie hipotezy łączące planowanie partycypacyjne z przepływami informacyjnymi inicjowanymi odgórnie i oddolnie. W artykule zastosowano podejście ilościowe, w tym analizę korelacji rang oraz aglomerację metodą Warda, które pozwoliły na analizy porównawcze nie tylko w odniesieniu do różnych podgrup organizacji ujętych w obu próbkach badawczych, ale także na porównania w czasie. Uzyskane wyniki potwierdziły pozytywny wpływ planowania partycypacyjnego na przepływy informacji zarządczych, zarówno te inicjowane odgórnie, jak i oddolnie. W szczególności planowanie partycypacyjne pozwala ograniczyć asymetrię informacyjną między kierownictwem naczelnym a pracownikami poszczególnych komórek funkcjonalnych.

Słowa kluczowe: przepływ informacji, komunikacja wewnętrzna, controlling, informacje zarządcze, planowanie partycypacyjne, raportowanie dokonań.

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ISSN 1641-4381 *print* / ISSN 2391-677X *online*

http://www.ztr.skwp.pl
DOI: 10.5604/16414381.1212001

Introduction

Internal information flows in business organizations have been changing over recent decades due to the processes of globalization and advancing technology. The processes of globalization caused companies to start expanding into foreign markets, providing their products, commodities and services, or seeking international human resources. Those conditions imposed a new framework for business processes and relations. Communication skills have become key abilities required from employees.

In our study, we attempt to examine how the character of planning influences information flows within management control in enterprises, based on the example of Poland. There are several reasons to refer to business organisations from this transition country. Firstly, the Polish economy had been burdened by „distorted structures, pervasive shortages, misallocation of resources, inefficient companies, and controlled prices" (Belka, 2013) after over a half-century of command-and-control governance. Therefore, Poland was induced to build up „a market economy from scratch after decades of distortions under central planning" by implementing a 'learning by doing' approach (Roaf et al., 2014), remembering that central planning and control, deeply rooted in Polish minds, still exerted pressure on organizational management styles. Secondly, we remark on selective empirical evidence on the topic of participative planning concerning Polish organizations as a research gap to fill. Thirdly, the Polish setting may be interesting for international readers, particularly those from Central and Eastern European countries (CEECs), where participative planning and its influence on management information flows have not been well recognised at an international level. Due to historical and political influences, CEECs were all suppressed by state-centred planning with bureaucratic administrative systems and authoritarian governance, which meant that they were exposed to economic transition and cultural change. Although presently a heterogeneity between the countries can be observed, stemming from the level of transformation (more liberal versus strictly-centralised), transition results (failures or successes) and the reactions of citizens (acceptance of a market-driven system or re-sentiment for the socialist times), the Czech Republic, Hungary, Poland, Slovenia, Slovakia and the Baltic countries need to change toward civil society based on information sharing, transparency, consultation and participation of the community in economic decision-making in their own ways (Hunter, Ryan 2014; Rozmahel et al., 2013).

The objective of the paper is to validate the existence of relations between the character of planning in Polish enterprises – participative versus non-participative one – and information flows within management control, considering both upward and downward information streams. The paper will distinguish between various types of planning processes depending on intensity of employee participation. Based on data collected in the periods of: November 2010 – January 2012 and November 2013 – January 2014, referring to 397 and 179 Polish enterprises respectively, situations which imply bottom-up or top-down planning will be considered. The analysis will cover two types of management information streams: up- and downward ones. The first includes control

and performance reports, whereas the other covers management feedback. Consequently, we contribute to the literature stream on management control by defining interrelations between planning and bidirectional information flows.

The paper is divided into three major sections. The first delineates the theoretical framework which provides the rationale for the research project. It covers discussions on planning processes and their impacts, and analyses the roles of downward and upward information flows in management control. The second presents the research methodology and hypotheses. The third discusses the research results obtained for the two compared samples.

1. Theoretical framework

1.1. Planning processes and their impacts

Planning within management control is comprehended as an *ex ante* control (Flamholtz et al., 1985) which refers to the following three dimensions: goal-setting for functional areas of an organization, the provision of standards for planning activities, and goal alignment across functional areas of an organizations. Malmi and Brown (2008) state that when researchers make their assumptions they should decide whether planning is about decisions on future activities or also about building employee commitment. Following that suggestion, we comprehend planning as an integral part of management control which creates goal congruence through the involvement of employees at each level of an organizational hierarchy.

Numerous investigations have searched for interplays between participation in the planning process and the impact thereof on corporate performance. Both Likert (1961) and McGregor (1970) agreed that employee participation in the decision-making processes contributed to goal congruence and increased commitment and motivation to achieve the goals. Ivancevich (1977) pointed out that while earlier research had appreciated the positive impacts of participative planning, new findings had appeared based on contingency theories. Those findings indicated that participation was effective only in certain situations, whereas in others it might have had a neutral or a negative impact. Moreover, Yearta et al. (1995) claimed that although goal-setting and its impacts had been well-examined, research results did not provide consistent findings, since some researchers detected significant and positive interrelations between participation in goal-setting and corporate performance, while other found little or none. The reasons for inconsistencies resulted from different measures which were applied to evaluate the level of employee involvement in planning processes.

It is also claimed that due to participative planning, particularly in reference to strategic issues, the involvement of personnel may facilitate the effective implementation of a strategic change (Westley, 1990; Purser, Cabana, 1997; Fiegener, 2005; Elbanna,

2008). Kohtamäki et al. (2012) examined how participative strategic planning influenced personnel commitment to a strategy implementation and what impacts personnel commitment had on corporate performance. A study on a sample of 160 Finnish SMEs from the IT sector proved that personnel commitment to strategy implementation mediated relationship between participative strategic planning and corporate performance. Those findings provoked considerations for managers who were supposed to pay close attention to the character of their strategic planning.

Kitchen and Daly (2002) maintain that „an employee can only work effectively if they can participate in the organisation and they can only participate if they are fully informed". Therefore, it is worth remarking that there exists a stream of literature which pertains to employee „line of sight" (LOS) (Boswell, Boudreau, 2001; Boswell, 2006; Gay, D'Aprix, 2007). „Line of sight" is defined as „an employee's understanding of the organization's objectives and how to contribute to those objectives" (Boswell, Boudreau, 2001). Jackson et al. (2009) indicate that the „line of sight" is a term used by managers in the context of employee rewarding in order to determine „the amount of influence an employee has on a performance measure". Buller and McEvoy (2012) share that statement and stress that „the LOS concept is that employees' knowledge and behaviour, aligned with strategic priorities, are keys to achieving positive organizational outcomes". This leads to the conclusion that employees should not only be strategically aware but they should comprehend actions aligned with a strategy, which may be assured by participative planning.

Interestingly, participation is not limited to goal-setting only, or even more specifically to establishing budgetary targets. Groen et al. (2012) remarked that the perception of employee involvement has been extended to activities concerning the development of performance measurement systems, including: establishing performance measures, identifying information needs, adapting IT-systems or presenting the effects in the form of regular performance reports. Therefore, the broader concept of participative management reflects the idea of sharing power with employees and follows empowerment theory. Empowerment means that a formal authority is delegated to lower levels of a company hierarchy. In an organizational context, power arises when an individual's or a subunit's performance is contingent not simply on their own behaviour but also on how others respond (Conger, Kanungo, 1988). In this theory „actors who have power are more likely to achieve their desired outcomes and actors who lack power are more likely to have their desired outcomes thwarted or redirected by those with power" (Conger, Kanungo, 1988).

Participative planning has several impacts on organisations. Firstly, it facilitates management consensus regarding a corporate strategy (Wooldridge, Floyd, 1990; Judge et al., 1997). Secondly, it contributes to a better comprehension of a vision, corporate strategy and strategic targets (Mantere, Vaara, 2008; Liedtka, 2000a, 2000b). Thirdly, it supports the identification of personnel with corporate strategy (Cooper, Daily, 1997; Liedtka, 2000a, 2000b). Finally, it contributes to increasing staff commitment to strategy implementation and improved performance (Collier et al., 2004; Kohtamäki et al., 2012; Miller et al., 2004).

Information sharing is a key component of the empowerment process, since employees have to understand the reasons for business decisions in order to become more committed to the activities they perform (Wilkinson, 1998). Therefore, downward, upward and horizontal internal information flow gain in importance. Managers may use newsletters, management chains or team briefings to disseminate information on strategic objectives and business prospects, while employees may express their opinions, complain or give feedback during regular meetings with superiors (Wilkinson, 1998).

1.2. Information flow within management control

Internal communication is the circulation of information between employees who need to get and share information relating to their jobs with superiors, subordinates or peers from other departments. The efficiency of information flow is dictated by the following three factors: information type, timing and communication load (Dows, Adrian, 2004). The first indicates whether information is communicated in a plain form or in a comprehensible way. Dows and Adrian (2004) point out that most employees sense easily when they do not get information they should receive, however, sometimes they are not aware of information which might be useful. The second factor is the timely distribution of information which is crucial for decision-making processes and efficient task performance. Finally, internal communication is affected by the communication load. It refers to the frequency and size of the information transfer, which is presently increasing due to ICT development. Dows and Adrian (2004) underline that there exists the 'optimal information load' which depends on employees' ability to process. However, it might not be easy to define what 'optimal' load means, since various factors, including company size or usage of ICT, have to be considered.

In response to those problems, the research area of modelling information flows was developed. It aims at finding solutions to how to organise and coordinate processes of information flows effectively by eliminating redundant processes, minimising information overlapping and managing the distribution of intra- and inter-organisational information (Durugbo et al., 2013). In order to meet that objective, a set of diagrammatic and mathematical techniques of modelling information flows was applied. The first technique refers to using diagrams in modelling information flows which are a transparent way of communicating interactions within and beyond an organization. Diagrammatic techniques mobilise three approaches: pictorial representations ('rich pictures' including charts, symbols, texts), graph representations (structured analysis based on various types of complex charts and diagrams) and matrix representations (design structure or pattern matrices) (Durugbo et al., 2013). The mathematical techniques distinguish between two approaches – flow analysis and organizational analysis – and apply a multitude of mathematical methods including probability theory, network theory, organisational theory, and graph or vector analyses. Flow analysis is dedicated to the evaluation and enhancement of organizational performance, using quantities and information levels, whereas the organizational analysis perceives organisations as „different constructs for improving information flow" (Durugbo et al., 2013).

In the context of modelling information flows, the question arises regarding how management control might benefit from that concept. The early studies which searched for connections between management control and information flows were those of Lowe (1971), Morris (1986), and Evans et al. (1986). They found roles of management control in: (1) „organizational information seeking and gathering" (Lowe, 1971), (2) assurance that „both the employees and the organization have the information provided by the system" (Morris, 1986), and (3) reporting to managers or owners about favourable or unfavourable business conditions (Evans et al., 1986).

Strauss and Zecher (2013) elaborated on the development of information aspects of management control by referring to Baiman (1982) and Otley (1999). The first author underlined how the use of management control information changed managers' beliefs, influenced subordinates' motivation and enabled resources allocation between various departments, whereas the latter focused on an impact of using management control information on employees' behaviour. However, Otley (1999) insisted that the management control concept, with its traditional framework (Anthony 1965), had been too narrow due to the lack of a holistic approach to control, strategic and operational planning and the negligence of non-financial measures. Therefore, Otley (1999) proposed a more complex performance management framework addressing questions of: (1) key corporate objectives and evaluation of their achievement; (2) strategies and plans of their adoption; (3) performance level and targets; (4) rewards for achievement of performance targets. The last question referred to information flows (both feedback and feed-forward) and its role in the creation of knowledge-based organisations which learn from their experience and react accordingly.

A more recent study concerning planning systems and information flows underlined the importance of interactive and communicative roles of planning and control systems (PCSs). Abernethy et al. (2010) examined how PCSs used by managers communicated crucial issues for an organization, empowered employees and executed organisational visions, by asking 128 profit centre managers about: delegation choice, the interactive communication use of PCSs, the roles of performance measurement systems in rewarding managers of profit centres, leadership styles, information asymmetry between profit managers and their superiors, and interdependencies among profit centres. Interestingly, it was stated that leadership style did not affect delegation choice, which meant that decisions on empowering depended more on the operating context. The research results proved, however, that leadership styles had a significant impact on the use of PCSs as a communication device by top managers. The delegation and interactive use of PCSs were significantly and positively correlated. The latter linkage implied that problems which arose due to employee empowerment could be mitigated by effective dialogue between superiors and subordinates within planning and control processes. Information flow, in particular an upward one, allowed top managers to address problems timely to meet corporate objectives. Abernethy et al. (2010) also stated that deepening knowledge asymmetry contributed to a greater delegation of decision rights to lower levels, whereas a growth in interdependencies among profit centres induced retention of decision rights by top managers.

1.2.1. Communication directions for control purposes

The general classification of communication directions distinguishes horizontal, vertical and external information flows (Dows, Adrian, 2004). Horizontal communication links responsibility centres in an organization, and results from: regular operations, interactions, and co-operation on common projects or from conflicts. Vertical communication comprises downward and upward information flows and it stems from superior-subordinates relationships.

Downward communication has certain tasks to fulfil. Firstly, due to top-down information flow managers are able to communicate strategic objectives. This knowledge allows employees to translate strategic objectives into a set of specific operating goals. Secondly, middle-level managers may transfer job instructions explaining how and when particular tasks are expected to be accomplished and how employees should be evaluated for their involvement. Apart from directives, the grassroots may receive procedures and practices. Those documents include internal policies, rules and regulations which aim at standardizing organizational practices. Thirdly, through downward communication, employees may expect performance feedback in the form of aggregate progress reports or individual assessments. Due to performance feedback, departments or individuals obtain a message about the efficiency and effectiveness of their input.

Upward communication relates to reporting from lower to higher hierarchy levels. Subordinates are expected to pass information to superiors on corporate expenses and performance for control purposes. Information flow may also cover: assessments of employee performance, the results of legal and formal control, the effectiveness of production or service rendering or quality check-ups. In order to guarantee that strategies are understood correctly by personnel, senior managers need a continual exchange of information and critical feedback from their staff. Tourish (2005) even recommended building 'red flag' mechanisms, particularly for the bottom-up transmissions, concerning urgent problems which must not be disregarded. Moreover, Tourish remarked that a company may benefit from incorporating a critical upward feedback into its communication system. However, a balance is needed in considering positive and negative signals. Positive feedback cannot impair the alertness of managers or take key problems off the agenda. Tourish and Robson (2003) also claimed that „open communication and the frequent upward transmission of critical opinion was a vital ingredient of organizational effectiveness". However, there appears a danger that employees may downgrade the significance of critical information in order to provide findings which are more consistent with what their superiors wish to hear, not what happens in an organization or what subordinates actually feel.

In this vein, Welch and Jackson (2007) rethought internal communication and developed a concept which distinguished between four dimensions of information flow, including:

– predominantly two-way information flow between line managers and employees which may concern employees' roles, appraisal discussions, team briefings (line management communication);

- two-way information flow between employees which may concern team task discussions (team peer communication);
- two-way information flow between employees which may concern project issues (project peer communication);
- and a predominantly one-way information flow between top managers and employees which may concern goals, objectives, new developments, activities and achievements (corporate communication).

This approach acted as a response to a multitude of concepts covering communication directions (White, Mazur, 1995; Gruning, Hunt, 1984; Clampitt, 2000; Tourish, Hargie, 2004) and communication content (Smidts et al., 2001; Dows, Adrian, 2004).

1.2.2. Performance reporting and managerial feedback

Contrary to financial reporting, which presents the annual, semi-annual or quarterly financial situation of an organization to external users, performance reporting concentrates on providing information for decision-making purposes. The direction of information flow using performance reports is therefore upward. Internal management reports are prepared with higher frequency than financial reports and depict results obtained at operational and strategic levels. While traditional financial reporting focuses more on measures expressed in monetary terms, or on categories referring to a chart of accounts at a high level of aggregation (Walker, 1996), performance reporting aims at providing both financial and non-financial information adjusted to users' needs.

There are many guidelines on compiling performance reports. They refer to the concise structure of reports, comprehensible and sufficient content, consistent style and adequate frequency of reporting. In particular, reports should enable: comparative analyses which provide explanations for unexpected deviations from plans, trend analyses of business performance with a special focus on key turning points together with changes or anomalies, and business-driver analyses exemplifying causal relationships between both financial and nonfinancial variables and business outcomes (*Performance Reporting to Boards…*, 2003). Walker (1996) underlined the dynamic character of management reporting which required: innovativeness, flexibility and a high degree of independence of reporting staff. Following contingency theory, performance reporting should change reflecting such factors as: seasonal determinants, process improvements, reorganizations or business life-cycles (Walker, 1996). Finally, Tregidga et al. (2012) drew attention to more informal internal reporting, including: corporate press releases, the results of CEO speeches to employees or internal networking communication.

Performance reporting also includes feedback mechanisms which contribute to organisational learning. Due to constructive feedback an organization may improve its effectiveness and efficiency. Providing employees with feedback on their performance may serve as a directive for keeping goals on a route or as an incentive to stimulate

motivation among the staff (Payne, Hauty, 1955). Pitkänen and Lukka (2011) added that feedback should go beyond a formal control loop, including a set of formal and informal routines closely interlaced and provided by managers to lower level employees.

While traditionally feedback was considered a downward process, studies emerged which referred to bottom-up feedback (Bauer, Mulder, 2006; Van Dierendonck et al., 2007). In fact, upward feedback was deemed not only to be a vertical flow of critical information only, but a horizontal distribution of knowledge within an organization (Bauer, Mulder, 2006). It may have a positive impact on subordinates, who pass a message to superiors, as well as for superiors who receive feedback. Steinhoff (1995) maintained that both employees and managers could benefit from upward feedback. The possibility to express independent opinions increases job satisfaction and contributes to the better motivation of subordinates. It also positively affects integration processes at work, which results in more effective team building and team working. On the other hand, superiors who obtain feedback may diagnose and evaluate deficiencies in their attitudes and work (Steinhoff, 1995).

Considering the theoretical context presented, the paper will test the existence of relations between participative planning and management information flows in micro, small, and medium-sized companies. Therefore, it should contribute to the presented literature by introducing a construct of 'strategic awareness' (Dyczkowska, Dyczkowski, 2015) investigating its relations with up- and downward management information streams. Moreover, the adopted cognitive perspective of employees rather than that of managers should make the existing analyses complete.

2. Research design

2.1. Research outline

In order to understand how management information flow is organised in the examined companies, the authors – in both editions of the project – scrutinised the following four issues. Firstly, how companies set their strategic goals and operational objectives. Secondly, what methods were used in order to assess the economic performance and efficiency of business processes. Thirdly, how managerial information was communicated to and comprehended by employees. Finally, how solutions within data processing and internal communication systems helped to build organisational knowledge pools.

The material for the research was collected with the help of employees of the examined organisations, who originated from the student/alumni network of the parent university of the authors. The research was conducted using a standardised questionnaire consisting of three parts. The first covered basic characteristics of the examined organisations (their legal status, foundation year, employment, sales revenue, business domain,

geographical area of operation, and capital structure). The second one included 16 questions (those relevant to the subject of the paper are presented in appendices 1–2) related to: planning, control, reporting and communication processes. Each question was accompanied with six of the most typical answers. It was also possible to formulate their own responses. Additionally, they were required to describe a situation in their company in detail and to provide a narrative evaluation of it. The final three questions validated the collected information by describing the positions, work-profiles and experience of the employees who provided information, the data sources they used and any difficulties in addressing the questions if such were encountered.

2.2. Research sample

Tables 1a and 1b characterize the structures of the examined samples considering: size, a year of establishment and the business domain of the companies. The size of each class (integer numbers) and their shares in the samples (percentages) are indicated as well. The dominating values for each subgroup (rows) are distinguished in bold.

Table 1a. Composition of the examined group
(data collected between 11.2010 and 1.2012)

Size / Subgroup	Micro enterprises	Small enterprises	Medium enterprises	Large enterprises	Total
Before 1989	–	8 (14.8%)	10 (18.5%)	**36 (66.7%)**	54
1989–1994	8 (8.9%)	17 (18.9%)	19 (21.1%)	**46 (51.1%)**	90
1995–2003	25 (17.1%)	39 (26.7%)	27 (18.5%)	**55 (37.7%)**	146
2004–2008	19 (21.6%)	24 (27.3%)	12 (13.6%)	**33 (37.5%)**	88
After 2009	**10 (55.6%)**	4 (22.2%)	–	4 (22.2%)	18
Farming & food	–	**4 (36.4%)**	**4 (36.4%)**	3 (27.2%)	11
Industrial production	2 (2.1%)	11 (11.5%)	18 (18.7%)	**65 (67.7%)**	96
Construction	1 (3.4%)	**12 (40.0%)**	7 (23.3%)	10 (33.3%)	30
Trade & logistics	9 (12.9%)	**27 (38.5%)**	11 (15.7%)	23 (32.9%)	70
ICT sector	2 (18.2%)	2 (18.2%)	**4 (36.3%)**	3 (27.3%)	11
Finance & insurance	13 (17.3%)	6 (8.0%)	6 (8.0%)	**50 (66.7%)**	75
Services	**35 (31.0%)**	31 (27.4%)	20 (17.7%)	27 (23.9%)	113
Total*	62 (15.6%)	93 (23.4%)	68 (17.1%)	174 (43.9%)	397

* Sums of particular columns may differ from those indicated in the 'total' row, since one small company did not provide its year of establishment, and two medium-sized and seven large companies indicated 2 activity domains.

Source: own elaboration.

Table 1b. Composition of the examined group
(data collected between 11.2013 and 1.2014)

Size / Subgroup	Micro enterprises	Small enterprises	Medium enterprises	Large enterprises	Total
Before 1989	2 (5.5%)	6 (16.7%)	4 (11.1%)	**24 (66.7%)**	36
1989–1994	5 (13.2%)	3 (7.9%)	13 (34.2%)	**17 (44.7%)**	38
1995–2003	4 (8.5%)	12 (25.5%)	6 (12.8%)	**25 (53.2%)**	47
2004–2009	14 (29.2%)	12 (25.0%)	5 (10.4%)	**17 (35.4%)**	48
After 2010	**5 (55.6%)**	1 (11.1%)	1 (11.1%)	2 (22.2%)	9
Farming & food	–	3 (18.7%)	6 (37.5%)	**7 (43.8%)**	16
Industrial production	3 (7.3%)	7 (17.1%)	3 (7.3%)	**28 (68.3%)**	41
Construction	6 (28.6%)	**8 (38.1%)**	5 (23.8%)	2 (9.5%)	21
Trade & logistics	5 (14.3%)	9 (25.7%)	5 (14.3%)	**16 (45.7%)**	35
ICT sector	–	4 (28.6%)	1 (7.1%)	**9 (64.3%)**	14
Finance & insurance	6 (15.4%)	5 (12.8%)	2 (5.1%)	**26 (66.7%)**	39
Services	**19 (32.2%)**	12 (20.4%)	11 (18.6%)	17 (28.8%)	59
Total*	30 (16.8%)	34 (19.0%)	29 (16.2%)	86 (48.0%)	179

* Sums of particular columns may differ from those indicated in the 'total' row, since one large company did not provide its year of establishment, and 46 companies (including 9 micro-, 14 small-, 4 medium-sized and 19 large ones) indicated more than one activity domain.

Source: own elaboration.

When the structures of research groups are analysed, it should be noted that large companies prevailed in both editions of the project (43.9% and 48.0% respectively). The SME cluster was dominated by small enterprises (93/34 companies) with a similar number of companies belonging to micro- and medium-sized groups (62 vs. 68 and 30 vs. 29 companies). Considering the foundation year, it can be observed that 54 enterprises (including 36 large ones) in the first round, and 36 (with 24 large) in the second one, were set up prior to the times of a free market economy in Poland, another 236 and 85 entities respectively were established after 1989 but still before Polish access to the European Union, and all others started their business operations after said moment.

With respect to the business area, the examined companies were grouped into seven domains: the farming and food industry, industrial production, construction, trade and logistics, information and telecommunication technologies (ICT), finance and insurance, and services. The most abundant categories included: services (113/59 companies, with 86/42 SMEs respectively), production companies (96/41 companies, with 65/28 large companies respectively), finance and insurance (75/39 companies, including

50/26 large ones) and trade and logistics (70/35 companies, with 47/19 SMEs respectively). Small companies were common in the construction sector (40.0%/38.1% in the two rounds of the research). The group examined in 2010-2012 contained only 11 (of 397) companies of the farming and food industry as well as those of the ICT sector. Those shares increased in the second run of the projects to 16 and 14 companies (out of 179).

It has to be pointed out that, particularly in the second round of research, a considerable number of companies examined (46) indicated more than one activity domain. The main co-occurrences included: services combined with trade & logistics (9 companies), services linked with construction (7 companies), industrial production merged with trade & logistics (7 companies), services mixed with ICT (6 companies), services matched with finance & insurance (5 companies), as well as farming & food coupled with trade & logistics (5 companies).

Finally, it should be added that, despite the fact that compositions of the two samples depended greatly on where the student/alumni who helped to provide the data were employed, the structures of the two groups turned out to be rather consistent. Considering company size, the Mann-Whitney test suggested differences between the two samples being at the limits of significance ($Z = 1.781$, $p = 0.075$), whereas in the case of belonging to the production sector, there were no significant discrepancies observed ($Z = 0.245$, $p = 0.806$). This suggests that the non-random selection of the research objects should not be considered a research bias to the analysis presented hereafter.

2.3. Research hypotheses and methods

The research presented in the following part of the paper will attempt to investigate relationships between the involvement of employees in planning processes and the existence of bottom-up and top-down management information flows in an enterprise. In order to identify and define those relationships, the following hypotheses will be tested.
H1: Participative planning stimulates upward management information flow.
H2: Participative planning stimulates downward management information flow.

Following the definition of organizational controls of Flamholtz et al. (1985), assuming that organisations aim at increasing the probability that employees or working teams will be pursuing the achievement of organisational goals by using various techniques and processes and influencing human behaviours, we postulate that organisations which follow this approach use a formalised and, in particular, a participative goal setting process bringing about goal congruence and resulting in the enhancement of management information flow. Extending the definition of Flamholtz et al. by referring to a broader concept of control proposed by Merchant and Otley (2007), which incorporates strategic development, strategic control and learning processes leading to the

enhancement of employee strategic awareness, we expect that a combination of these two concepts embedded and formalised in organisations will stimulate upward and downward management information flow.

The validation of hypotheses *H1–H2* will require obtaining arguments that the better communication of a strategy in an organization and the involvement of employees in formulating operational goals positively influence the two types of information flows – upward and downward – in an enterprise.

The first data stream affected is linked to control. The regularity and comprehensiveness of reports issued by particular employees, teams, units or departments for managerial purposes will be considered here. Special attention will be drawn to the flow of control data on: overall performance, employees' work, compliance with internal and external standards, efficiency of production or service rendering and quality thereof. Regularity of reporting is defined by the variable: *performance reporting* (*PRE*), whereas the comprehensiveness of managerial reports is depicted by another variable: *control framework* (*CFR*). The second examined information flow is related to management feedback. Whether particular departments receive regular information on the results of internal or external assessments related to their operations will be analysed. In addition, whether employees take part in regular meetings discussing performance, or if they are informed about those issues in other ways will be investigated. In order to characterise top-down information flows, two dependent variables are developed. Post control reporting is quantified with the variable: *post-control information* (*PCI*), while a discussion on performance is depicted by the variable: *managerial feedback* (*MFE*). The said variables are presented in appendix 1.

Based on the aforementioned variables, two synthetic measures are defined. The first, *y1: upward information flow* (*UIF*), is calculated as the average value of *PRE* and *CFR* constructs for particular objects. The second one, labelled *y2: downward information flow* (*DIF*), is created as the average result of the *PCI* and *MFE* constructs. The synthetic measures will be used as dependent constructs in validation of the hypotheses. The *UIF* metric corresponds to hypothesis *H1*, while *DIF* is linked to hypothesis *H2*.

The analytical model developed in the paper will also consider two aspects of participative planning, including communication of a strategy in a company and the involvement of employees in operational planning. The first area is covered by variable *strategic awareness* (*SAW*), whereas the other one is depicted by variable *character of the operational planning process* (*OPP*). The said two variables create an aggregate measure depicting the character of planning (*x1: participative planning – PPL*), built as an average value of the two constructs. The model will also consider four control variables, representing: the scope of IT support in an organisation (*ITS*), the size of company (*SIZ*), its involvement in production activities (*PRO*) – also if mixed with other activity domains – or in international operations (*INT*). All the mentioned variables are shown in appendix 2.

The selection of control variable *ITS* stems from the assumption that the implementation of IT systems should be accompanied with monitoring and streamlining information flows in a company. Moreover, making information flow more effective is a fundamental objective of upgrading IT infrastructure. Distinguishing manufacturers from other types of enterprises is justified by the fact that production processes, with accompanying production logistics, may be more complex than, for example, services rendering, and thus implies more intensive flow of control and post-control information. Finally, it is reasonable to believe that internationalised companies, due to interactions with foreign partners and due to currency risk, will require more scrutiny over their operations than those acting in a domestic market.

3. Results of the research

The following part of the paper introduces the results of the Spearman rank correlation analysis and hierarchical clustering using Ward's method with respect to each of the previously defined characteristics of managerial information flows in companies, including: *upward* and *downward information flows* (*UIF* and *DIF*), as well as independent variables. The latter include the synthetic measure of *participative planning* (*PPL*), together with the four control variables, including: IT system support in an organisation (*ITS*), size of the company (*SIZ*), its affiliation to the production sector (*PRO*) and involvement in international operations (*INT*). In this part, the results based on data collected in the 2010–2012 edition of the project will be confronted with those coming from the recent edition of the research, conducted in 2013/2014. The aim of the comparison is to validate initial observations and to identify significant differences which could question prior results.

Tables 2a and 2b present the Spearman rank correlation matrices between all dependent and independent variables for both data sets. Besides the values of correlation coefficients, significance levels were computed. First of all, it has to be pointed out that there existed positive and statistically valid correlations between *PPL* and both dependent variables, representing upward and downward management information flows. The correlation coefficients amounted to 0.267 and 0.443 respectively in the case of the first data set, and 0.360 and 0.423 for the second sample. The link between participative planning and upward management information flows was much more distinct in the second edition of the research. The results should be interpreted as positive signals in the validation of hypotheses *H1* and *H2*. In particular, the moderately high correlation coefficient between *PPL* and *DIF* obtained in both editions of the project suggested that companies which made their employees familiar with strategic plans and encouraged them to contribute to goal-setting were also more willing to deliver performance-related information back to lower organisational tiers. One should believe that managerial feedback encourages employees to be more involved in meeting organisational goals.

Table 2a. The Spearman rank correlation matrix
(data collected between 11.2010 and 1.2012)

Items	***(y1)***	***(y2)***	***(x1)***	***(x2)***	***(x3)***	***(x4)***	***(x5)***
UIF (y_1)	1.000						
DIF (y_2)	0.365 p = 0.000	1.000					
PPL (x_1)	**0.267** **p = 0.000**	**0.443** **p = 0.000**	1.000				
ITS (x_2)	0.222 p = 0.000	0.312 p = 0.000	0.379 p = 0.000	1.000			
SIZ (x_3)	0.237 p = 0.000	0.306 p = 0.000	0.437 p = 0.000	0.496 p = 0.000	1.000		
PRO (x_4)	0.145 p = 0.004	0.145 p = 0.004	0.271 p = 0.000	0.310 p = 0.000	0.259 p = 0.000	1.000	
INT (x_5)	0.161 p = 0.001	0.101 p = 0.044	0.165 p = 0.001	0.259 p = 0.000	0.319 p = 0.000	0.398 p = 0.000	1.000

Source: own elaboration.

Table 2b. Spearman's rank correlation matrix
(data collected between 11.2013 and 1.2014)

Items	***(y1)***	***(y2)***	***(x1)***	***(x2)***	***(x3)***	***(x4)***	***(x5)***
UIF (y_1)	1.000						
DIF (y_2)	0.406 p = 0.000	1.000					
PPL (x_1)	**0.360** **p = 0.000**	**0.423** **p = 0.000**	1.000				
ITS (x_2)	0.293 p = 0.000	0.357 p = 0.000	0.386 p = 0.000	1.000			
SIZ (x_3)	0.422 p = 0.000	0.387 p = 0.000	0.509 p = 0.000	0.510 p = 0.000	1.000		
PRO (x_4)	0.166 p = 0.026	0.113 p = 0.131	0.152 p = 0.042	0.080 p = 0.288	0.203 p = 0.006	1.000	
INT (x_5)	0.206 p = 0.006	0.270 p = 0.000	0.332 p = 0.000	0.373 p = 0.000	0.533 p = 0.000	0.399 p = 0.000	1.000

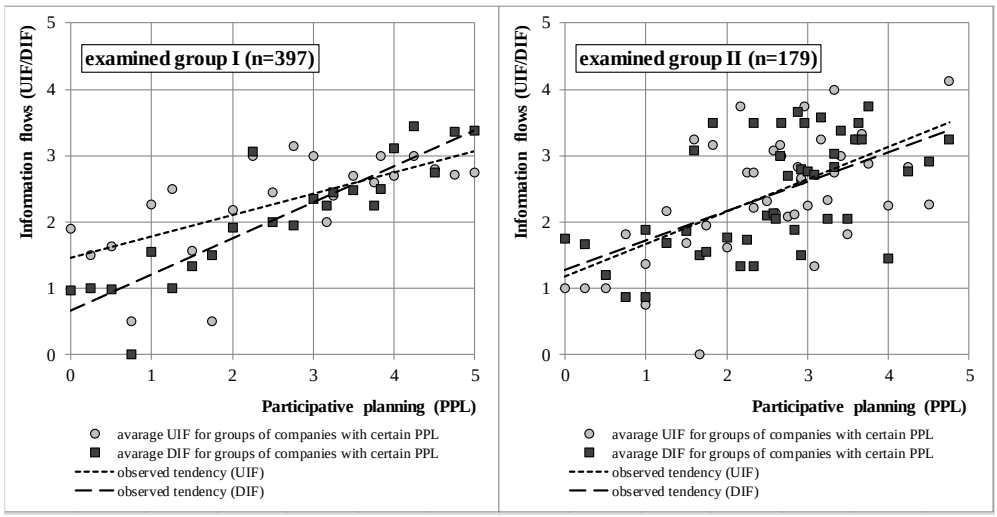
Source: own elaboration.

It should also be noted that the dependent variables proved to be correlated with all control variables. Only the affiliation to the production sector, indicated by the *PRO* variable, turned out not to influence downward information flows in the second data set. In both editions of the research, the *DIF* variable in particular proved to be linked both to the scope and type of IT systems implemented in an enterprise (ITS) and to the size of an enterprise (SIZ), with observed correlation coefficients of 0.312/0.306 for sample 1 and 0.357/0.387 for sample 2 respectively. It is not a surprise that IT systems support management information flow in a company, since that is exactly why such systems are installed. Similarly, larger companies require better coordination of operations in all functional areas, units and projects. Better downward information flow is a signal that managers become involved in communication with their subordinates in order to meet corporate goals.

In the case of the first data set, other relationships, although statistically important, were characterised by correlation coefficients not exceeding 0.161. However, for the second edition of the project there were three other important correlations detected. Firstly, *UIF* was linked to company size (correlation coefficient of 0.422), which suggested that not only regular employees but also managers of larger companies received better information support than those running smaller organisations. Secondly and thirdly, both *UIF* and *DIF* constructs proved to be correlated with the *INT* variable with noticeably higher coefficients (0.206 and 0.270) than in the first round of the research. It suggests that companies operating in international markets develop a more comprehensive management control environment, since their business activity is influenced by additional risk factors. However, the second data set included a higher share of companies with foreign capital than the first one (60.5% vs. 55.2% among large companies and 24.1% vs. 0.0% among SMEs). Better management control practices of foreign companies can be a decisive factor for the observed differences.

Concluding the results of the correlation analysis, valid – and in certain cases even moderately high – correlations between independent variables cannot be passed over. Participative planning proved to be linked to company size in particular (correlation coefficients of 0.437/0.509 for respective data sets). This confirmed observations included in surveys that in micro and small enterprises, employees remained excluded from any discussion on company goals or priorities far too often. They were expected to perform duties, which was seen as an unfavourable situation and a hindrance to employees' professional development. It was not a surprise either that larger companies tended to implement sophisticated IT solutions more often, which was indicated by high correlation coefficients of 0.496/0.510 between the *ITS* and *SIZ* variables. Finally, it turned out that production companies were involved in cross-border operations, and – to no-one's surprise – that the internationalisation of business activities was a feature of larger companies, particularly in the second data set.

Figure 1. Participative planning and its influence on bidirectional information flows



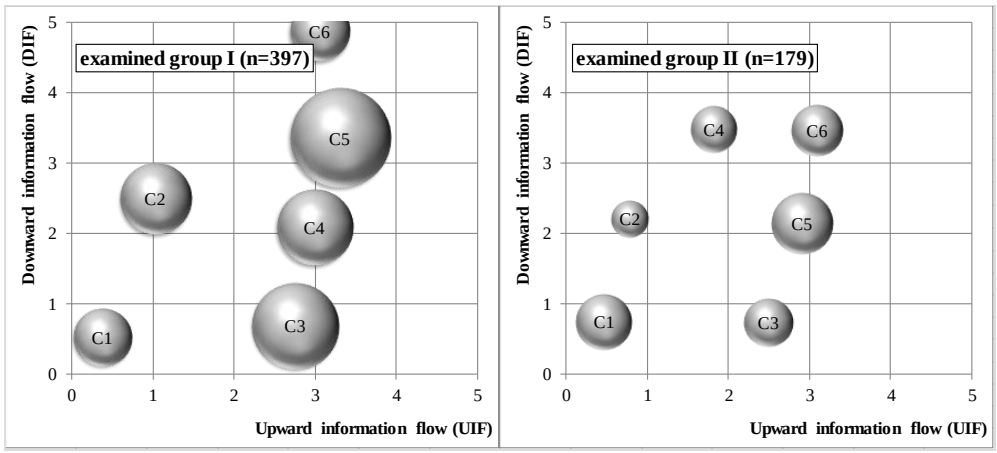
Source: own elaboration.

The auspicious results of the correlation analysis between participative planning and upward as well as downward information flows triggered further investigation on the nature of the foregoing relations. The first approach included an examination of how average values of *DIF* and *UIF* variables developed along with an increase of *PPL* (Figure 1). It should be explained that due to the fact that the research form included questions with non-exclusive answer options and, consequently, average scores were attributed to an enterprise if multiple choices were made, more than six levels of the analysed variables emerged. As one can see in Figure 1, both upward and downward information flows intensified in the groups of companies characterised by an increasing participativeness of their planning. This observation confirms hypotheses *H1* and *H2*. In both samples a visible growing tendency was noted, in particular, in the case of downward information flows. Referring to answer options included in the research form, this suggests that companies focusing on day-to-day activities, whose employees had no particular scope of duties defined (*SAW* and *OPP* at level 0), if necessary, presented to their employees various collective breakdowns focusing on one control dimension only (*PCI* and *MFE* at level 1). On the other hand, in enterprises where functional strategies were known to employees and where staff participated in goal-setting (*SAW* and *OPP* at level 5), managers preferred to inform their employees about control results directly and devoted at least an annual meeting to explaining corporate performance-related issues to the staff (*PCI* and *MFE* at level 3).

Neither the correlation analysis nor the presented evolution of mean values explained whether there existed distinguishable groups of objects whose certain characteristics conditioned bidirectional information flows, however. For that reason, a hierarchical clustering using Ward's method was performed, with both *UIF* and *DIF* used

as grouping variables. The outcomes are demonstrated in Figure 2 (clusters related to information flows) and in Tables 3a/3b (average levels of independent variables in each cluster and results of the Kruskal-Wallis *H* test).

Figure 2. Company clusters respecting bidirectional information flows



Source: own elaboration.

Table 3a. Results of the classification analysis
(data collected between 11.2010 and 1.2012)

Grouping	**n**	**avg *UIF***	**avg *DIF***	**avg *PPL***	**avg *ITS***	**avg *SIZ***	**avg *PRO***	**avg *INT***
Cluster C1	38	0.38	0.54	1.56	2.67	2.16	0.03	0.08
Cluster C2	57	1.03	2.50	3.37	3.61	4.16	0.32	**0.40**
Cluster C3	85	2.75	0.70	2.47	3.39	3.80	0.24	0.27
Cluster C4	65	2.99	2.09	3.16	3.69	4.40	0.17	0.32
Cluster C5	112	**3.30**	3.36	3.35	3.92	4.88	0.29	0.34
Cluster C6	40	3.05	**4.88**	**3.81**	**4.08**	**5.38**	**0.35**	0.38
Overall	397	2.50	2.34	3.01	3.62	4.26	0.24	0.31
$H_{(5, 397)}$		**222.88**	**347.55**	**80.03**	**52.11**	**55.78**	**16.90**	**13.69**
p		**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.005**	**0.018**

Source: own elaboration.

Table 3b. Results of the classification analysis
(data collected between 11.2013 and 1.2014)

Grouping	**n**	**avg *UIF***	**avg *DIF***	**avg *PPL***	**avg *ITS***	**avg *SIZ***	**avg *PRO***	**avg *INT***
Cluster C1	36	0.47	0.76	1.65	2.21	2.26	0.11	0.25
Cluster C2	16	0.78	2.21	2.03	2.06	2.70	0.31	0.38
Cluster C3	27	2.49	0.74	2.11	2.39	3.52	0.26	0.33
Cluster C4	25	1.82	**3.49**	2.82	3.34	4.69	0.16	0.48
Cluster C5	44	2.90	2.15	2.45	2.89	4.69	0.20	0.55
Cluster C6	31	**3.09**	3.47	**3.01**	**3.45**	**5.10**	**0.39**	**0.61**
Overall	179	2.04	2.08	2.35	2.76	3.92	0.23	0.44
$H_{(5, 179)}$		**129.75**	**155.14**	**30.13**	**26.54**	**34.97**	8.77	**12.62**
p		**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	0.119	**0.027**

Source: own elaboration.

The cluster analysis enabled six groups of companies to be distinguished from each edition of the research. In sample 1, those included enterprises of: low bidirectional information flows (*C1*), low control and medium post-control information transfers (*C2*), and four groups with medium upward and low to high downward information flows (*C3*–*C6*). In sample 2, the Ward's clustering method led to similar results except for cluster *C4*, including companies characterised by medium bidirectional information flows. The key finding of the clustering procedure is, nevertheless, that the lowest levels of participative planning were noted for clusters characterised with the least intensive downward information flows (*C1* and *C3* in both samples). In sample 2, low participativeness was matched with low upward information flows (*C2*), as well. On the other hand, in both samples the highest average *PPL* levels corresponded to the most intensive bidirectional information flows (*C6*). Moreover, for both analysed groups, differences in *PPL* levels among the clusters were evidently matched with information policies, which was confirmed by the Kruskal-Wallis *H* test (significant at $p = 0.000$ levels). Therefore, it can be concluded that both *UIF* and *DIF* are sensitive to changes in *PPL* level, as propounded in research hypotheses *H1* and *H2*.

Considering the control variables, one can note that the highest levels of *ITS* corresponded to the most intensive downward information flows in both samples (*C6*). On the other hand, particularly in sample 1, the lowest average *ITS* level was observed in companies with ineffective information policy (*C1*). Those are clear signals that inadequate support of IT technologies impairs information flows in companies. In the case of company size, a distinct division between information policy in small companies

(average *SIZ* equal to 2.16 in sample 1 and 2.26 in sample 2) and that of larger enterprises (*SIZ* of 5.38 / 5.10 respectively) were observed. In sample 2, company size corresponded to the grouping even better than *PPL* did. Less clear patterns were detected in the case of internationalisation level (*INT*). Finally, in sample 2, the clusters did not differ in the share of production companies they included.

The cluster analysis confirmed prior findings of the correlation analysis that participativeness of planning influenced information policies in the examined companies, and in particular post-control information flows, reducing information asymmetry. However, the observed impacts of company size and use of information technologies on information transfer suggested that large, technologically advanced companies were the most likely to generate control and post-control information flows, indicating maturity of the management control systems.

Conclusion

The objective of the paper was to validate the existence of a link between a planning framework in Polish enterprises and information flows (both upward and downward) within management control. The research results advocated for the foregoing relations since the observed correlations were moderately high and significant for both analysed second data sets. A moderately high correlation between participative planning and downward information flows in the surveyed companies in the two editions of the research is vital. This proves that companies which make their employees familiar with strategic plans and make them contribute to the operational planning processes are also much more willing to deliver performance related information back to lower organisational tiers. That observation supports the thesis of Flanagin and Bator (2011) who emphasised a communicative nature of knowledge. Feedback is needed to learn, improve and remain motivated. Interestingly, the observed positive relations of downward information flow with the scope and type of IT tools implemented in a company corresponded well with the observations of Heath (1998) and Pärl (2012), that IT infrastructure and management control systems ensure effective and efficient information flow between management and lower-level employees.

Despite the positive results obtained, which enabled the research hypotheses to be validated positively, the authors are aware that the study in its two rounds faced a limitation resulting from the quantification strategy. The scoring system used (see appendices 1 and 2), which matched particular descriptive answer options with certain numbers of points, may be seen as subjective (due to gradability constraints). Nonetheless, this research is not an isolated attempt to quantify and compare the maturity of management control systems and methodologies to be found both in the Polish and foreign literature. A scoring system (attributing points from 0 to 10) was applied by Lichtarski and Nowosielski (2006). It considered such factors as: tasks, supported areas, methods, ICT, responsibility centres, and institutionalisation of control. Management control

functionalities, including information support, ratio systems, planning, decision support, sustainable operations, stimulation, identification of bottlenecks, internal consulting, assessments, rationalising and coordination were also evaluated by (Becker et al., 2009) using 5-grade scales. Finally, it should be mentioned that the results obtained in this quantitative study are by no means contradictory to the analysis of narrative comments provided in questionnaires by the examined companies, which are discussed in detail in (Dyczkowski, Dyczkowska, 2015), and thus should be considered meaningful.

To sum up, the paper contributes to the literature in three ways. Firstly, it extends the discussion on relationships between strategies and management control, by introducing the construct of 'strategic awareness' which turned out to be meaningful in relation to particular components of the management information stream – both up- and down-ward. Secondly, the reverted cognitive perspective – against that adopted in most research on management control, taking the view point of managers or staff of control units – enables the influence of participative planning on information flows where regular employees are involved to be captured. Finally, the paper closes the research gap on the topic of participative planning in organizations located in a country which remembers central planning and control, where bureaucracy and authoritarian governance deeply rooted in citizens' minds still exert pressure on organizational management styles.

References

Abernethy M.A., Bouwens J., Van Lent L. (2010), *Leadership and control system design*, „Management Accounting Research", 21 (1), pp. 2–16.

Anthony R.N. (1965), *Planning and Control Systems: a Framework for Analysis*, Harvard Business School, Boston.

Baiman S. (1982), *Agency research in managerial accounting: a survey*, „Journal of Accounting Literature", 1 (1), pp. 154–213.

Bauer J., Mulder R.H. (2006), *Upward feedback and its contribution to employees feeling of self- determination*, „Journal of Workplace Learning", 18 (7–8), pp. 508–521.

Becker W., Staffel M., Ulrich P. (2009), *Funktionen des Controlling im Mittelstand – Ergebnisse einer empirischen Untersuchung*, [in:] V. Lingnau (hrsg.), *Mittelstandscontrolling 2009*, Eul, Lohmar, Köln, pp. 1–24.

Belka M. (2013). *How Poland's EU membership helped transform its economy*, „Occasional Paper", 88, Group of Thirty, Washington D.C.

Boswell W.R. (2006), *Aligning employees with the organization's strategic objectives: out of 'line of sight', out of mind*, „International Journal of Human Resource Management", 17 (9), pp. 1489–1511.

Boswell W.R., Boudreau J. (2001), *How leading companies create, measure and achieve strategic results through „line of sight"*, „Management Decision", 39 (10), pp. 851–860.

Buller P.F., McEvoy G.M. (2012), *Strategy, human resource management and performance: sharpening line of sight*, „Human Resource Management Review", 22 (1), pp. 43–56.

Clampitt P. (2000), *The questionnaire approach*, [in:] O. Hargie, D. Tourish (eds), *Handbook of Communication Audits for Organisations*, Routledge, London.

Collier N., Fishwick F., Floyd S.W. (2004), *Managerial involvement and perceptions of strategy process*, „Long Range Planning", 37 (1), pp. 67–83.

Conger J.A., Kanungo R.N. (1988), *The empowerment process: integrating theory and practice*, „Academy of Management Review", 13 (3), pp. 471–482.

Cooper A.C., Daily C.M. (1997), *Entrepreneurial teams*, [in:] D.L. Sexton, R.W. Smilor (eds), *Entrepreneurship 2000*, Upstart, Chicago, pp. 127–150.

Dows C.W., Adrian A.D. (2004). *Assessing Organizational Communication: Strategic Communication Audits*, Guilford Press, New York.

Durugbo C., Tiwari A., Alcock J.R. (2013), *Modelling information flow for organisations: a review of approaches and future challenges*, „International Journal of Information Management", 33 (3), pp. 597–610.

Dyczkowska J., Dyczkowski T. (2015), *An influence of strategic awareness on management control: evidence from Polish 'micro, small and medium-sized enterprises*, „Management and Business Administration. Central Europe", 23 (1), pp. 3–31.

Dyczkowski T., Dyczkowska J. (2015), *Examining management information flows in business organisations*, „International Journal of Contemporary Management", 14 (4), pp. 45–74.

Elbanna S. (2008), *Planning and participation as determinants of strategic planning effectiveness: evidence from the Arabic context*, „Management Decision", 46 (5), pp. 779–796.

Evans J.H., Levis B.L., Patton J.M. (1986), *An economic modelling approach to contingency theory and management control*, „Accounting, Organizations and Society", 11 (6), pp. 483–498.

Fiegener M.K. (2005), *Determinants of board participation in the strategic decisions of small corporations*, „Entrepreneurship Theory and Practice", 29 (5), pp. 627–650.

Flamholtz E., Das T., Tsui A. (1985), *Toward an integrative framework of organizational control*, „Accounting, Organizations and Society", 10 (1), pp. 35–50.

Flanagin A.J., Bator M. (2011), *The utility of information and communication technologies in organizational knowledge management*, [in:] H.E. Canary, R.D. Mcphee (eds), *Communication and Organizational Knowledge: Contemporary Issues for Theory and Practice*, Taylor and Francis, Florence, pp. 173–190.

Gay C., D'Aprix R. (2007), *Creating line of sight between employees and strategy*, „Strategic Communication Management", 11 (1), pp. 26–29.

Groen B.A., Wouters M.J., Wilderom C.P. (2012), *Why do employees take more initiatives to improve their performance after co-developing performance measures? A field study*, „Management Accounting Research", 23 (2), pp. 120–141.

Grunig J.E., Hunt T. (1984), *Managing Public Relations*, Harcourt Brace Jovanovich College Publishers, New York.

Heath R.L. (1998), *New communication technologies: an issues management point of view*, „Public Relations Review", 24 (3), pp. 273–288.

Hunter R.J., Ryan L.V. (2014), *Poland 2014: twenty five years of transition. Is Poland now a normal country?*, „Global Journal of Human-Social Science", 14 (1), pp. 1–8.

Ivancevich J.M. (1977), *Different goal setting treatments and their effects on performance and job satisfaction*, „Academy of Management Journal", 20 (3), pp. 406–419.

Jackson S., Schuller R., Werner S. (2009), *Managing Human Resources*, 10th ed., Cengage Learning, South Western.

Judge W.Q., Fryxell G.E., Dooley R.S. (1997), *The new task of R&D management: creating goal directed communities for innovation*, „California Management Review", 39 (3), pp. 72–85.

Kitchen P.J., Daly F. (2002), *Internal communication during change management*, „Corporate Communications: An International Journal", 7 (1), pp. 46–53.

Kohtamäki M., Kraus S., Mäkelä M., Rönkkö M. (2012), *The role of personnel commitment to strategy implementation within the relationship between strategic planning and company performance*, „International Journal of Entrepreneurial Behavior and Research", 18 (2), pp. 159–178.

Lichtarski J.M., Nowosielski K. (2006), *Metodyka pomiaru stanu zaawansowania controllingu w małych i średnich przedsiębiorstwach*, „Prace Naukowe Akademii Ekonomicznej im. Oskara Langego we Wrocławiu", 1101, pp. 139–152.

Liedtka J. (2000a), *In defence of strategy as design*, „California Management Review", 42 (3), pp. 8–30.

Liedtka J. (2000b), *Strategic planning as a contributor to strategic change: a generative model*, „European Management Journal", 18 (2), pp. 195–206.

Likert R. (1961), *New Patterns of Management*, McGraw-Hill, New York.
Lowe E.A. (1971), *On the idea of management control system: integrating accounting and management control*, „Journal of Management Studies", 8 (1), pp. 1–12.
Malmi T., Brown D.A. (2008), *Management control systems as a package – opportunities, challenges and research directions*, „Management Accounting Research", 19 (4), pp. 287–300.
Mantere S., Vaara E. (2008), *On the problem of participation in strategy: a critical discursive perspective*, „Organization Science", 19 (2), pp. 341–358.
Merchant K.A., Otley D.T. (2007), *A review of the literature on control and accountability*, [in:] C.S. Chapman, A.G. Hopwood, M.D. Shields (eds), *Handbook of Management Accounting Research*, vol. 2, Elsevier, Amsterdam, pp. 785–802.
McGregor D.M. (1970), *The human side of enterprise*, [in:] V.H. Vroom, E.L. Deci (eds), *Management and Motivation*, Penguin, Middlesex.
Miller S., Wilson D., Hickson D. (2004), *Beyond planning strategies for successfully implementing strategic decisions*, „Long Range Planning", 37 (3), pp. 201–218.
Morris R.M. (1986), *Management control and decision support systems: an overview*, „Industrial Management", 28 (1), pp. 8–15.
Otley D.T. (1999), *Performance management: a framework for management control systems research*, „Management Accounting Research", 10 (4), pp. 363–382.
Payne R.B., Hauty G.T. (1955), *Effect of psychological feedback upon work decrement*, „Journal of Experimental Psychology", 50 (6), pp. 343–351.
Pärl Ü. (2012), *Understanding the Role of Communication in the Management Accounting and Control Process*, dissertation, Tampere University, Tampere.
Pitkänen H., Lukka K. (2011), *Three dimensions of formal and informal feedback in management accounting*, „Management Accounting Research", pp. 125–137.
Purser R.E., Cabana S. (1997), *Involve employees at every level of strategic planning*, „Quality Progress", 30 (5), pp. 66–71.
Roaf J., Atoyan R., Joshi B., Krogulski K. (2014), *25 years of transition: post-communist Europe and the IMF. Regional Economic Issues. Special Report*, International Monetary Fund, Washington D.C.
Smidts A., Pruyn A., van Riel C. (2001), *The impact of employee communication and perceived external prestige on organizational identification*, „Academy of Management Journal", 49 (5), pp. 1051–1062.
Steinhoff V. (1995), *Vorgesetztenbeurteilung – Grundlagen, Philosophie, Anwendung*, [in:] K. Hofmann, F. Köhler, V. Steinhoff (Hrsg.), *Vorgesetztenbeurteilung in der Praxis – Konzepte, Analysen, Erfahrungen*, Beltz, Weinheim, pp. 7–14.
Strauss E., Zecher C. (2013), *Management control systems: a review*, „Journal of Management Control", 23 (4), pp. 233–268.
Tourish D. (2005), *Critical upward communication: ten commandments for improving strategy and decision making*, „Long Range Planning", 38 (5), pp. 485–503.
Tourish D., Hargie O. (2004), *Motivating critical upward communication: a key challenge for management decision making*, [in:] D. Tourish, O. Hargie (eds), *Key Issues in Organizational Communication*, Routledge: London.
Tourish D., Robson P. (2003), *Critical upward feedback in organisations: processes and problems and implications for communication management*, „Journal of Communication Management", 8 (2), pp. 150–167.
Tregidga H., Milne M., Lehman G. (2012), *Analyzing the quality, meaning and accountability of organizational reporting and communication: directions for future research*, „Accounting Forum", 36 (3), pp. 223–230.
Van Dierendonck D., Haynes C., Borril C., Stride Ch. (2007), *Effects of upward feedback on leadership behaviour toward subordinates*, „Journal of Management Development", 26 (3), pp. 228–238.
Walker K.B. (1996), *Corporate performance reporting revisited – the balanced scorecard and dynamic management reporting*, „Industrial Management & Data Systems", 96 (3), pp. 24–30.
Welch M., Jackson P. (2007), *Rethinking internal communication: a stakeholder approach*, „Corporate Communications: An International Journal", 12 (2), pp. 177–198.

Westley F. (1990), *Middle managers and strategy: micro dynamics of infusion*, „Strategic Management Journal", 11 (5), pp. 337–351.
White J., Mazur L. (1995), *Strategic Communications Management*. Addison Wesley, Cambridge.
Wilkinson A. (1998), *Empowerment: theory and practice*, „Personnel Review", 27 (1), pp. 40–56.
Wooldridge B., Floyd S.W. (1990), *The strategy process, middle management involvement and organizational performance*, „Strategic Management Journal", 11 (3), pp. 231–241.
Yearta S.K., Maitlis S., Briner R.B. (1995), *An exploratory study of goal setting in theory and practice: a motivational technique that works?*, „Journal of Occupational and Organizational Psychology", 68 (3), pp. 237–252.

Internet sources

Performance Reporting to Boards: a Guide to Good Practice (2003), CIMA, London, http://www.cimaglobal.com/documents/importeddocuments/perfrpttoboards_techguides_2003.pdf (accessed 01.09.2015).
Rozmahel P., Kouba L., Grochová L., Najman N. (2013), *Integration of Central and Eastern European Countries: Increasing EU Heterogeneity?*, Research paper on the results of task 403.1 and 403.2, http://www.foreurope.eu (accessed 02.07.2015).

Appendix 1. Description of dependent variables

***PERFORMANCE REPORTING* (*PRE*)** *Do particular departments or employees draw up performance reports?*		
No.	Answers	Score
1.	Regular management reports	5
2.	Regular information to superiors	4
3.	Individual reports on employees' performance	3
4.	Annual reports on business activities	2
5.	Various collective breakdowns, if necessary	1
6.	No reports are produced	0
***CONTROL FRAMEWORK* (*CFR*)** *What areas, processes or issues are supervised by a department or a person responsible for control?*		
No.	Answers	Score
1.	Corporate performance and cost control	+1
2.	Assessment of employees and organisation of work	+1
3.	Legal and formal control	+1
4.	Production, services and quality control	+1
5.	Planning, reporting and providing feedback	+1
6.	No control activities	0
***POST-CONTROL INFORMATION* (*PCI*)** *Do controlled departments or individual employees receive post-control feedback?*		
No.	Answers	Score
1.	Regular reports with recommendations	5
2.	Results of external control	4
3.	Direct information from superiors	3
4.	Information on detected problems or errors	2
5.	Various collective breakdowns	1
6.	No post-control information is received	0
***MANAGERIAL FEEDBACK* (*MFE*)** *Are there any meetings convened where organisational performance is discussed?*		
No.	Answers	Score
1.	Employees participate in regular meetings with the management or superiors	5
2.	Superiors discuss with employees their performance	4
3.	There is an annual meeting with a presentation of performance convened	3
4.	There are some briefing sessions for employees organised	2
5.	The meetings include management only	1
6.	There are no such meetings organised	0

Source: own elaboration.

Appendix 2. Description of independent variables

***STRATEGIC AWARENESS* (*SAW*)**		
Does an organisation draw up strategic plans and are employees made familiar with them?		
No.	Answers	Score
1.	Strategic plans are drawn up for each area of business activity	5
2.	The strategy is known to employees	4
3.	The strategy is known exclusively to managers	3
4.	There are some general long-term plans developed	2
5.	Planning refers to one-year or even shorter periods	1
6.	The organisation performs day-to-day activities	0
***OPERATIONAL PLANNING PROCESS* (*OPP*)**		
Does an organisation fix operational goals for particular subunits, teams or individual employees?		
No.	Answers	Score
1.	Employees participate in the goal-setting process	5
2.	Goals are established by senior management in the form of a plan to execute	4
3.	Superiors establish targets for the nearest period	3
4.	Superiors express only general expectations towards employees	2
5.	Employees are expected to perform their duties	1
6.	Employees do not have a scope of their duties defined	0
***INFORMATION TECHNOLOGIES* (*ITS*)**		
What kind of information technology support does an organisation benefit from?		
No.	Answers	Score
1.	There is an integrated management information system implemented	5
2.	There are specialised systems or applications in use	4
3.	There is a financial and accounting system installed	3
4.	Simple accounting or business software is used	2
5.	The IT function is outsourced	1
6.	*Information technology has little importance to a company's operations*	0
***ORGANISATION SIZE* (*SIZ*)**		
Characteristic: annual turnover and average employment		
No.	Option	Score
1.	The largest companies	7
2.	Large companies	6
3.	Medium-sized enterprise (larger)	5
4.	Medium-sized enterprise	4
5.	Small enterprise (larger)	3
6.	Small enterprise	2
7.	Microenterprise	1

***PRODUCTION COMPANY* (*PRO*)** *Characteristic: area of operations*		
No.	Option	Score
1.	Production company (industrial sector)	1
2.	Other sectors (food, construction, trade, ICT, finance, services)	0
***INTERNATIONALISED COMPANY* (*INT*)** *Characteristic: scope of operations*		
No.	Option	Score
1.	Internationalised company (involved in export activities)	1
2.	Other organisations (acting on the domestic market)	0

Source: own elaboration.