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Understanding the role of locus of control in consultative decision-making: a case study

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Abstract

Purpose – The study aims at clarifying whether locus of control may act as a bias in organisational decision-making or not.

Design/methodology/approach – Altogether 44 managers working at Skanska (a Swedish multinational construction company) participated in the study. They were asked to complete a booklet including a locus of control test and a couple of decision tasks. The latter were based on case scenarios reflecting strategic issues relevant for consultative/participative decision-making.

Findings – The results revealed that managers with low external locus of control used group consultative decision-making more frequently than those with high locus of control. There was also a tendency showing that high externals more frequently used participative decision-making than low externals. This was in line with the general trend, indicating that managers on the whole predominantly used participative decision-making.

Originality/value – The results of the present study are valuable for HRM practice, especially with regard to the selection of individuals to management teams.

Keywords Decision making, Control, Participative management

Paper type Case study

Introduction

A recent trend in the study of competence in organizations is to focus upon the role of managerial competencies and individual level factors (Hodgkinson and Sparrow, 2002). Such factors have been established to have a bearing on actor's capabilities to acquire strategic competence. It would be a difficult task to present a complete list of all these factors, but it may be agreed upon that locus of control, need for achievement, intuition, creative cognition, and sense-making represent some of the major ones.

Locus of control defined

In the present study, we take a closer look at one of these factors, locus of control, and study how it affects the behaviour of managers when confronted with case-based decision-making scenarios. Locus of control implies that a person perceives the effects of rewards or reinforcement differently depending on whether the person explains the reward as dependent on his/her own behaviour or independent of it (Rotter, 1966). If a person tends to explain the reward as something that is contingent upon his/her own behaviour, it is referred to as internal locus of control. In contrast, if a person tends to

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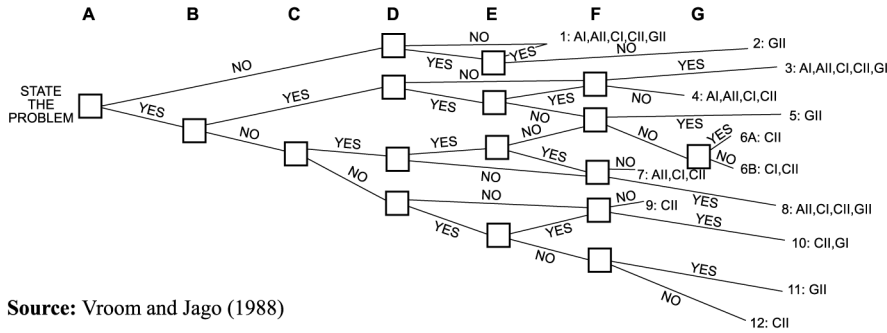
explain the reward as a result of external factors such as luck, chance, fate and powerful others, it is referred to as external locus of control. Merton (1946) found a relationship between passive behaviour and a person's belief in fate, luck, or chance. A person, who believes that the reward he or she receives is a cause of external factors, rather than being a cause of internal factors, tends to act more passively and less productively. Another researcher, Phares (1962) found that persons with internal locus of control want to have control over their environment, they learn better, and they perform better in general, when it comes to tasks requiring skill. According to Phares, this belief in their competence will lead to high self-confidence among internals and it is also found that internals do not appreciate outside help or support, they rather rely on themselves. In contrast, a person with external locus of control will adapt to the group's influences and feel that success is obtained only when consulting others. In the present study, we are especially interested in to what extent locus of control has an impact on the frequencies of participative, consultative, and autocratic decisions.

The basic models of consultative decision-making

Vroom and Yetton (1973) published a theory of decision-making, which is a model designed to aid managers in assessing the appropriate level of employee participation based on an analysis of several situational attributes in order to maximise the number of successful decision outcomes. Decision makers are to properly examine the characteristics of a decision faced in order to select the most effective method for solving the problem. For example, it might not always be advantageous to use participative decision-making when problems do not require acceptance by subordinates.

The definition of decisions when describing the Vroom-Yetton model is any problem, which falls within a manager's field of responsibility (Vroom and Jago, 1988). There must also be one or more others who will be affected by the decision. Vroom and Yetton developed seven decision-making rules to be considered and a "decision tree" (Figure 1) provides a map for navigating through all situational factors. The decision-making rules concern two aspects of decisions. The first three rules aim at protecting the decision quality and the last four rules deal with the acceptance of the decision. By answering seven questions (decision-making rules) the decision tree will lead the manager to a "feasible set" of possible decision-making processes. The feasible set ends in possible solutions, after the manager has revised the seven questions, and eliminates inappropriate alternatives. The authors distinguish different types of



Source: Vroom and Jago (1988)

Figure 1.
Decision-making tree for group problems – feasible set by Vroom, Yetton and Jago

processes ranging from participative decision-making to autocratic decision-making. The seven attributes to consider are also presented in Appendix 1. The possible decision-making processes are presented in Appendix 2.

When using the decision-making tree, through answering "yes" or "no" to the decision rules, the feasible set may contain several options for the decision maker to choose from. Two separated attitudes are normally conclusive when choosing from the feasible set; a time efficient solution, and a time investment model. The time efficient model is supposed to be the most autocratic one in the feasible set because it demands less time than the participative one. This model is based on the effectiveness of the decision rather than development of the group of people. In contrast, the time investment model is the most participative one in the feasible set and it considers participation as development. According to Vroom and Yetton, what decision-making style the manager chooses depends on subordinates' knowledge, the culture in the organisation and preferred leadership style.

Does the problem possess a quality requirement?

Do you have sufficient information to make a high quality decision?

Is the problem structured?

Is acceptance of decision by subordinates important for effective implementation?

If you were to make the decision by yourself, is it reasonably certain that it would be accepted by your subordinates?

Do the subordinates share the organisational goals to be attained in solving this problem?

Is conflict among subordinates over preferred solutions likely?

Vroom and Jago (1988) have identified a few flaws concerning the Vroom-Yetton model and revised the theory due to its primitiveness. For example, the original model shows no detailed guideline on how to make a final choice among the alternatives in the feasible set. Simply replying affirmatively or in the negative when estimating the problem attributes is too gross, the model overlooks the variable of time constraint and it takes a few aspects for granted too hastily. That is, the model assumes that all involved in a decision are situated in the same geographical spot and can all attend a meeting, if necessary. Moreover, it does not properly examine whether an autocratic decision is always the most time efficient one and if a participative process is always developmental, even though the problem requires neither quality nor acceptance.

Vroom and Jago (1988) developed a new model including an extended number of problem attributes to cover for the shortcomings. They also enlarged the model by introducing a scale of degree to which different attributes are important in order to make the model more nuanced instead of only using yes or no as alternative responses. Furthermore, while the original model focuses on whether a decision process is effective or not, the new model aims at discussing relative effectiveness. This perspective takes an overall effectiveness in consideration by emphasising the decision effectiveness as dependent on decision quality, decision commitment, time penalty, cost and development. In the new model, there is a large number of attributes to consider: quality requirement, commitment requirement, leader information, problem structure, commitment probability, goal congruence, subordinate conflict (if affecting

several persons), subordinate information, time constraint, geographical dispersion, value of time and value of development. The majority of the attributes provides a scale from 1 to 5 when evaluating the importance. The amplification of the problem attributes and possible responses makes the decision-making tree more complex prescribing mathematical functions and computer aid in order to keep track of all values received. This presents no obstacle nowadays but was quite complicated in 1973 when the original theory was introduced.

Vroom and Jago (1995) emphasise the importance of acknowledging the various situational effects that exist. Mentioned situational effects are person effects, industry differences, hierarchical level, function, gender, culture and other individual differences (e.g. beliefs consistent with McGregor's Theory Y). Vroom (2000) has discussed the models of Vroom-Yetton and Vroom-Jago describing the development over 25 years. During this period, the original model of Vroom-Yetton has been revised and refined and in the paper, Vroom gives an account of four consequences of participation that the refined model can forecast. These are decision quality, implementation, costs of decision-making, and development. The model has grown to be quite complex, including an extensive number of situational factors and over the years, the author has become more convinced that it is more appropriate to talk about autocratic or participative situations rather than ditto managers. The model has evolved over time, but also the environment seems to have changed: there has been an increase of participation in decision-making, and in addition, some demographic factors have been distinguished. A higher degree of involvement is more common in countries with high per capita, a democratic tradition and educated workforce. Furthermore, Vroom also notes that the model is far from perfect and that it still overlooks factors such as organisational culture, and what conditions and practices managers are used to.

The starting point for developing the Vroom-Yetton theory was to construct a normative model, but it has also been expanded to function as a descriptive model aimed at understanding what managers actually do and what influences that exist. In developing the descriptive model factors such as organisational level, cultural influences and gender have been taken into consideration (Vroom, 2000).

Using seven attributes is the simplest way in which the model can be shown on paper. However, to use its full potential the computer-aided version should be applied. The seven most recent basic problem attributes, or situational factors, involved when using the simplified model described by Vroom (2000) are: decision significance, leader's expertise, likelihood of commitment if leader makes decision single handed, group support for objectives, group expertise, and team competence (the ability of team members to work together in relation to the problem).

Considerable research has investigated and commented the normative models of Vroom-Yetton and Vroom-Jago, not surprisingly studying the models' effectiveness in decision-making since this is the main intent of the models. Tanaisichuk (1995) investigated the validation of the Vroom-Yetton normative model to see if it was contributing to leadership effectiveness and development. The relationships among leader decision-making behaviour, leadership effectiveness, leader demographics and organisational variables were investigated and it was found that the model could not appropriately prescribe a guaranteed success in effective decision-making. Some empirical support for the model was found, but practical applicability was considered

to be limited. Field *et al.* (1990) studied the importance of the various attributes to be considered when choosing decision-making style and found that the five new attributes added by Vroom and Jago had a significant impact on decision makers' choice of decisions. Pasewark and Strawser (1994) found supportive information on that using the Vroom-Yetton model, decisions were more effective. This is in accordance with Brown and Finstuen (1993), who presented supporting results for the ability of the model of Vroom-Yetton in making effective decisions. Field and Andrews (1998) have criticised the carrying through of the data collection in the investigation of Brown and Finstuen, but the investigation of Field and Andrews also revealed that decisions made with methods derived from the recommended feasible set were more effective, supporting the effectiveness and prescriptive validity of the Vroom-Jago model. They also found that the Vroom-Jago model explains more variance in decision-making effectiveness than the Vroom-Yetton model.

Vroom and Jago (1988) discuss the need for considering organisational culture, personality characteristics and such in relation to the model. However, they never seem to deepen the discussion on the possible occurrence of biases in the judgement of the decision maker.

Locus of control and consultative decision-making

The current report will put emphasis on one bias, namely locus of control. The efficiency aspect of the model will be left out and to limit the investigation only three decision-making rules will be considered in the data collection. These are leader's expertise, group expertise and group support and commitment to organisational objectives. Another limitation is that the report will only attend to decision-making in groups even though the decision-making model is divided in group versus individual decision-making.

The question at issue in this particular study is not the effectiveness of the models, but the potential risks of bias in the decision maker's judgement of the attribution rules. During the preparations for this investigation no records were found considering the potential biases regarding ratings of the attribution rules. However, there is some empirical research suggesting that biases can effect judgement in various situations. An investigation of Longenecker *et al.* (1992) dealt with the role of affect in executive judgement and managerial perception and judgement of subordinate employees. In a manipulation of performance ratings, the results suggested affect as a source of rating bias. Parker (1999) criticised the validity of the Vroom-Yetton model in a study on implicit theories related to the model due to its reliance on managers' self-reports of both their behaviour and decision outcomes. The author argued the presence of implicit theories of performance information to be a possible source of bias on ratings of leader decision-making behaviour. Reichel and Mehrez (1994) discussed unfair ratings on performance and suggested characteristics of the rater to influence evaluation as a bias because of, among other factors, cognitive processes, prejudice and emotions. In a study conducted by Spreitzer and Mishva (1999) trust and control was discussed in relation to managers' willingness to include lower echelon employees in the decision-making process. The authors stated that many managers are hesitant to do this due to fear of losing control and that trust or performance information and incentives are required to enhance the willingness to apply participative decision-making.

Kaplan *et al.* (2001) investigated decision aid reliance and decision makers' proneness to rely on mechanical decision aids and results indicate that decision makers with an external locus of control appear to rely more on given aids than those with an internal locus of control. According to the above, this study focuses on locus of control as a possible bias.

Recently, Littunen and Storhammar (2000) has made a direct comparison of the relative merits of strategic control expectancies versus general control expectancies as a basis for investigating locus of control in business management research (small business entrepreneurs). This research appears to be is an extension of Hodgkinson's (1992) original work in the area.

In accordance with the empirical findings reported above, it would be reasonable to believe that managers can be biased when determining the value of the decision-making rules. Combining the statements of Spreitzer and Mishva (1999) on managers' fear of losing control and the findings of Kaplan *et al.* (2001) on mechanical decision aids and locus of control indicates that the aspect of control might affect a decision maker's perspective on how to go about with a decision. The study of Phares (1962) on that internals wants to have control over their environment might imply that people with high internal locus of control would rather make decisions themselves. In contrast, Merton's research (1946) shows that people with external locus of control are more prone to behave passively and this might cause them to prefer a delegating decision-making process. Individual consultative decision-making is closer related to autocratic decision-making, and group consultative decision-making to participative decision-making in the range of decision-making processes (Vroom and Jago, 1988).

Based on this discussion the following hypotheses are formulated:

H1. Decision makers with external locus of control use participative decision making styles and value group expertise and goal support.

H2. Decision makers with internal locus of control use autocratic decision making styles and value leader's expertise.

Method

To investigate, if the hypotheses could be supported, we decided that a questionnaire would be the best instrument in relation to the amount of data to be collected and the amount of time scheduled. The survey was handed out to a Swedish-based multinational construction company. To be able to test the hypotheses a couple of Kruskal-Wallis One Way ANOVAs were performed by use of the computer programme SPSS 9.0. Before completing the final version of the instrument it was tried out on ten participants in order to get a hint on how it actually worked, an idea of the dispersion of answers, and possible misunderstandings. Only minor adjustments were made in the final version.

Participants

Respondents needed for this investigation were decision makers with a field of responsibility and authority of making decisions that affect other people. Participants in the study were middle- and high-level decision makers in the organisation. The study did not include the top executive managers. The reason for excluding these was

that top executives most probably have very different and greater decisions to consider than lower level decision makers.

We instructed a human resource manager to randomly select the subjects participating in the data collection. An amount of 85 questionnaires were handed out, by e-mail, to managers in the organisation situated in six different cities. They were given a week to respond and they were reminded twice. The participants were all managers with equal authority concerning decision-making. There was no reward or compensation in question apart from being informed with the final result. The total number of managers in the organisation is 160 and we were given access to 85 of them. In the organisation there were also persons who were decision makers but not managers. This report includes only managers. All of the participants were men and hence, the background variable of gender was excluded from the data analysis.

The external drop out rate was 48 per cent. The internal drop out rate for the variable locus of control was four questions, 13.8 per cent (question no. 5, 10, 21 and 22, by four respondents), and the drop out rate for the decision scenarios was 0 per cent. For gender and age the drop out rate was 4.5 per cent, respectively, 6.8 per cent. Since three persons left out age, the omitted questions were handled as missing values, the total number of participants in the statistical analysis was 41 persons (Table I, Results). Had we had a full description of the demographics of the participants, it would have been possible to search for patterns in the group of people who chose not to respond. Owing to the confidentiality of the study there was no such information available. What could be ascertained was that the drop outs were dispersed over all sites used. No mean values were inserted to replace the missing ages to avoid equivocal information.

Instrument

On the front page of the questionnaire (see Appendix 3) information was given about the conductors of the study and its purpose. There was also information on that the data would be treated confidentially. If any questions would come up we left our tutor's and our e-mail addresses where we could be contacted. The instructions were formulated in accordance with the recommendations from SCB, the Swedish Central Bureau of Statistics.

In the beginning of the survey, questions were asked about background variables such as age and gender. We constructed the first part of the questionnaire that measured which decision-making process managers choose and their reason for that (see Appendix 3). The second part of the survey, which measured locus of control, was an established test created by Rotter in 1966 (Lefcourt, 1982). The locus of control test

(a)

n	External drop out	Internal drop out, age	Internal drop out, gender	Omitted questions, locus of control	Men	Women
44	48 per cent	6.8 per cent	4.5 per cent	13.79 per cent	41	0

(b)

Age	20-29	30-39	40-49	50-59	60-69
n	3	12	12	10	4

Table I. Descriptive statistics

was put last in order to minimise any order effect. In the questionnaire only closed response alternatives were used except for the last statement, where the subjects were given an opportunity to make additional comments. This would provide us with additional information and might also be appreciated by the respondents. Using closed alternatives would facilitate the statistical analysis of ANOVA in the computer programme SPSS, which was to be performed.

In the first part of the questionnaire, the participants were asked to consider six different decision scenarios with two subsequent questions. The scenarios were own operationalisations on examples of different situations decision makers might be faced with. The idea to construct scenarios derived from Vroom and Jago's (1988) way of describing the model; scenarios were presented and based on these the problem attributes were considered. The intent was to create as general events as possible since the participants in the study were decision makers in very different areas of the company. The scenarios had to be applicable for a broad range of occupations and could therefore not be specific. Another consideration was to create scenarios of "different strength", that is, some decisions were considered to be very important and some less important. Similarly, some decisions should call for autocratic decisions and some for a more participative approach. It was impossible for us to determine which decision-making process would be the most appropriate in each situation since this is dependent on previous experience of the individual decision maker, but this was the very point with using the scenarios. There were no right answers and our expectation was to find a tendency for decision makers with a certain degree of locus of control to use similar decision-making approaches independent from the situation. The scenarios dealt with the following problems: hiring a new co-worker to work with an existing group, deciding who should get an opportunity for further education when resources are scarce, deciding what type of computers to purchase for the co-workers of the division, how to solve a conflict in the division, what type of coffee machine to install, and finally selecting one of the co-workers to be the one who gets to establish a contact with a new client.

The first follow-up question provided four kinds of decision-making processes to choose from, (see A1, C2, G2 and A2 in Appendix 2). The second subsequent question asked to place three alternatives in order of preference. These three were the ones that were chosen from the decision-making problem attributes: leader's expertise, group expertise and group support for the organisation's goal. The reason why we chose leader's expertise and group expertise was that these are two similar alternatives but still opposite. The third alternative, group support and commitment for the organisational objectives, we considered a very general and important condition for a decision to be well carried through. Acceptance of a decision is essential in the Vroom and Jago model (1988) and we considered this to be included in support and commitment. We realise that there were two alternatives (group expertise and support for goal) that tend to be more participative and only one alternative (leader's expertise) that is more inclined to single-handed decision-making. However, when decoding the questionnaires we only considered the first choice of preference. Furthermore, we could not have compensated this unbalance with either of the other problem attributes (see Appendix 1). In both of the subsequent questions, it is meant for the respondent to consider the preceding scenario. When presenting two questions there is always a risk of order effect, but this is beyond our influence since, this risk would be present no

matter in which order we put the questions. The first part is ended with an opportunity for the participant to make a final comment if desired.

When decoding the questionnaires to transform them into SPSS input each chosen decision-making alternative was valued 1, and the three remaining were valued 0. Where the respondents were asked to rank the alternatives, the first alternative chosen was valued 1, and the other two were valued 0. The analysis of variance was calculated based on these mean values.

The second part of the questionnaire was Rotter's test of locus of control. The test consists of 29 paired statements and six of them were filler items. The remaining statements were examples of either internal or external locus of control. An example of an item that measured internal locus of control was "Capable people who fail to become leaders have not taken advantage of their opportunities". An external counterpart was "Without the right breaks one cannot be an effective leader". The test was scored in the external direction, that is, the higher the score the more external the individual. There were three categories to be distinguished: low externals (0-4, which we consider internals), moderate (5-12) and high externals (13-23).

Procedure

We started by contacting a person, working at the company, with whom we had had previous contact. He arranged for a contact with the human resource manager at the company who gave permission to hand out the questionnaires with his help. We concluded it would be best to use an internet survey especially since, the participants were used to this type of instrument and were situated in different sites. The human resource manager would assist us in distributing them to the 85 managers involved in the survey. When sending out the surveys the human resource manager encouraged the participants to fill it out and informed them about that he supported the investigation. After filling out the questionnaire, participants were given instructions to e-mail the responses to us rather than to the human resource manager, in order to keep the data confidential. If the survey would be sent to the manager he would have been able to see the responses of each person and since he knows the names of the subjects it would have been inappropriate.

We consider the reliability to be quite high since the study involves subjects from many sites. The procedure was not complicated and can therefore easily be replicated. In order to control the investigation all participants were given the same instructions on the front page of the questionnaire to enhance the reliability, or the trustworthiness of the measurement. However, the control is considered to be quite low since we did not hand out the questionnaires ourselves. As for validity we consider the instrument to be well designed and it gives an adequate measurement. According to the item analysis, Cronbach's α, in SPSS, the 23 items on locus of control showed a value of $\alpha = 0.7563$.

Ethics

All subjects in the data collection participated voluntarily and the tutor's and our e-mail addresses were given if any questions would occur. All data were confidential and the subjects were treated with anonymity. Something that might have been unethical is that the purpose of the study was not mentioned, as to avoid possible biases. However, there will be a copy of the final result available at the company in order to share the purpose with subjects involved. Another problem might arise when

the subjects find out that we have been trying to figure out the personality variable, locus of control. This might appear like an integrity intrusion, but we will have to appeal to the confidentiality of the completed questionnaire.

Results

From an amount of 85 questionnaires that were handed out to decision makers, we received 44 and the respondents were all men. To investigate the hypotheses four Kruskal-Wallis One Way ANOVAs were performed with locus of control (3) as independent variable, and four types of decision-making processes as dependent variables. The dependent variables were all derived from the Vroom and Yetton model of decision-making.

In the questionnaire (Appendix 3), there were four decision-making processes to choose from; autocratic decision-making, individual consultative decision-making, group consultative decision-making and participative decision-making. The second subsequent question of the scenarios considered the decision makers' highest valued aspect to consider in the different situations. These three alternatives were leader's expertise, group expertise, group support and commitment for the organisational goal (shortened "group support").

Descriptive statistics on participants, background variables such as age and gender, information on omitted questions and internal/external drop outs (also see Section Method) is shown in Table I.

As revealed in Table II, the first analysis investigating the effects of Locus of control (fixed factor) on *autocratic decision-making* (dependent variable) presented no significant main effect ($p = 0.692$).

However, a main effect of locus of control ($p < 0.05$) appeared when group consultative decision-making was used as dependent variable. The main effect indicated that decision makers with low external locus of control more frequently than those with high and moderate locus of control used group consultative decision-making. A significant difference between low externals and high ($p < 0.05$) was revealed, and between low externals and moderate ($p < 0.05$).

An analysis with participative decision-making as dependent variable showed a tendency of a main effect of locus of control ($p = 0.072$) indicating that high externals most frequently used a participative decision-making process. A significant difference between high externals and moderate concerning participative decision-making ($p < 0.05$) was also observed. A strong tendency for a difference between high and low externals ($p = 0.056$) was furthermore revealed (Table II).

An analysis using individual consultative decision-making as dependent variable showed no significant effect of locus of control ($p = 0.320$).

Discussion

Hypotheses

The first hypothesis formulated regarding decision makers with external locus of control and their tendency to use participative decision-making, processes was partly supported. Concerning the evaluation of group expertise and goal support the hypothesis was not supported. As for the second hypothesis regarding decision makers with internal locus of control and their tendency to use autocratic decision-making processes and value leader's expertise there were no significant effects determined.

	M	SD
Autocratic decision-making		
Locus of control		
Low externals ($n = 7$)	0.00	0.13
Moderate externals ($n = 22$)	0.16	0.14
High externals ($n = 12$)	0.11	0.11
Group consultative decision-making		
Locus of Control		
Low externals ($n = 7$)	0.50	0.27
Moderate externals ($n = 22$)	0.21	0.23
High externals ($n = 12$)	0.18	0.18
Participative decision-making		
Locus of control		
Low externals ($n = 7$)	0.29	0.21
Moderate externals ($n = 22$)	0.29	0.21
High externals ($n = 12$)	0.51	0.23
Individual consultative decision-making		
Locus of control		
Low externals ($n = 7$)	0.14	0.18
Moderate externals ($n = 22$)	0.34	0.22
High externals ($n = 12$)	0.19	0.20

Table II. Descriptive statistics for locus of control by preferred type of decision-making style (preferred style has been coded with 1 and non-preferred style with 0)

The finding that low externals (considered internals) tend to use group consultative decision-making is contradictory to the hypothesis implying that people with internal locus of control use autocratic decision-making. Additionally, low externals seem to significantly distinguish themselves from moderate and high externals in this regard. According to Phares (1962), persons with internal locus of control have such a strong belief in their own competence that they develop a high self-confidence and would rather rely on themselves than on outside help, which is not consistent with our findings. Perhaps, this high self-confidence also works as a sense of security and that the belief in their own competence gives them courage to involve others in the decision making process? The findings of Spreitzer and Mishva (1999) of managers' hesitance to including lower echelon employees in the decision-making process, because of their fear of losing control, might also be applicable in relation to our results. We speculate that persons with internal locus of control consider themselves as having such high degree of control of the situation that they see no risk in assessing outside consulting.

To support the hypothesis saying that persons with external locus of control use participative decision-making we found only a tendency of a main effect of locus of control. As hypothesised, high externals did, according to this tendency, more frequently use participative decision-making than did moderate and low externals. As an additional endorsement a statistically significant difference between high and moderate externals was observed, and also a tendency of difference between high and low externals. These differences are in line with the results obtained by Kaplan *et al.* (2001) stating that externals are more prone to rely on given aids. An explanation of this support might be that decision makers with external locus of control have lower self-confidence than do internals and do not believe in themselves as much as decision makers with internal locus of control. Therefore, they tend to prefer sharing the decision-making with others. This reasoning might also be compared to Merton's

(1946) connection between externals and passivity. Perhaps externals are more prone to delegate decisions due to their low productiveness.

Most results in this study indicated that participative and group consultative decision-making was more frequently used than autocratic and individual consultative decision-making. As a matter of fact, none of the respondents were solely autocratic decision makers. A possible reason for this could be that the organisation in which they operate is characterised by participation and that the work processes are modern and decentralised. Vroom (2000) mentions some demographic factors that have importance for the level of involvement in decision-making, for example a democratic tradition and an educated workforce. Since the investigation was conducted in a Swedish company both these incentives might be applicable to explain the participative influences. There might also exist an organisational culture including a high degree of trust, which facilitates communicating, and collaboration among employees. We can again refer to Spreitzer and Mishva (1999), who have found trust to be a crucial factor required to enhance participative decision-making.

Strengths and weaknesses of the design

The strength with our investigation is that several work places have been used for the data collection and consequently, there is a high geographical dispersion. Also, the respondents participating in the study were all decision makers operating on similar levels in the organisation and had equal authority regarding decision-making. It was also ensured that there were no temporary decision makers included in the investigation since they might work under different conditions. Another strength with our study was that we did a pilot study in order to discover weaknesses in the questionnaire before sending them out. However, it may be stated that the samples that we have employed have not been evenly represented, since, all the responses were obtained from managers of the same gender. Taking the extremely low base rate of female managers of the organization into account, it may perhaps not seem so odd that we did not succeed in recruiting any such informants to our study during the limited time period we had to our disposal. Putting this circumstance aside, there is very little evidence of that locus of control should be gender specific. This applies, for instance, to the variables' effects on decision-making style as well as to any other form of organizational behaviour. Interestingly, a recent study reported that external locus of control was positively related to stressors and symptoms of ill-health, whereas it was negatively related to job satisfaction, for both men and women (Muhonen and Torkelson, 2004). However, the same study also revealed that locus of control was a significant predictor of both symptoms of ill-health and job satisfaction, but only for women, when hierarchical regression analyses were applied. This illustrates that more fine-grained gender-specific effects of locus of control may in some cases be observed, if alternative ways of analysing the data are applied. The issue cannot therefore be completely ruled out.

Future research trends

Vroom and Jago (1988) mentioned the necessity to consider personality characteristics when using the model. This leads us to believe that personality variables such as self-confidence and risk proneness could play an important part when making decisions and in relation to locus of control. The base of this line of argument is the

findings of Spreitzer and Mishva (1999) on that trust and fear of loosing control is crucial for participative decision-making. Furthermore, Vroom (2000) notes, in relation to the new descriptive decision making model, that the organisational level is considered. However, the descriptive model is not discussed in this report and an example of a continued scrutiny of the decision-making model could be to investigate whether there are differences between managers' on different levels of the organisation regarding decision-making and locus of control. Vroom and Jago (1995) also emphasise the importance of the hierarchical level as a situational factor.

One issue that has emerged during this investigation is whether persons with internal locus of control also believe that others are internals and whether persons with external locus of control believe others to have the same characteristics. An example of further research on this topic could be the consequences this might have on decision-making. Perhaps, the perception of whether a person has an internal or external locus of control has an effect on which decision-making process the decision maker finds appropriate? For example, a person with external locus of control is perceived as dependent on group influences and powerful others (Phares, 1962). Would it be possible that a decision maker rather trusted an internal, who has the characteristics of high self-confidence and wanting to be in control, than someone with external locus of control?

Several of the results presented in this report may appear intriguing, especially the main effect of locus of control regarding group consultative decision-making. Even though it was not consistent with what was hypothesised it is an interesting finding. This fact combined with not finding any purely autocratic decision makers may indicate that it is very common to use participative decision-making.

An issue put forward by Hodgkinson and Sparrow (2002) is the key danger associated with excessive internality in that individuals or groups might develop illusions of control. It may therefore be advisable to select individuals with intermediate levels of internal-external strategic control expectancies throughout management teams. However, our results suggest that it may be the case that internals quite heavily engage in group consultative decision-making as a means of avoiding this seriously dangerous potential trap.

Conclusion

The study showed that managers with an internal locus of control relied more on group consultative DM than on autocratic DM compared to managers with an external locus of control. This finding was contradictory to what was hypothesized. A plausible explanation of the research finding might be that the internals have developed a self-confidence and a belief in their own competence that gives them more courage to involve others in the decision-making process. It was also revealed that the externals relied more on participative decision-making than did the internals, a finding that was in line with the hypotheses.

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Appendix 1. The Vroom-Yetton problem attributes (Vroom and Jago, 1988)

(1) Does the problem possess quality requirement? The extent to which the problem is relevant to the organisational goals.

(2) Do you have sufficient information to make a high-quality decision? Relevant knowledge on the issue.

(3) Is the problem structured? How familiar the decision maker is with the current state, the desired state and how to achieve the goal.

(4) Is acceptance of decision by subordinate/s important for effective implementation? Acceptance or compliance depends on whether the subordinates are going to be involved in the execution of the decision or not.

(5) If you were to make the decision by yourself, is it reasonably certain that it would be accepted by your subordinate/s? What power the leader has to sell in the decision to subordinates.

(6) Do subordinate/s share the organisational goals to be attained in solving this problem?

(7) One subordinate: Does the subordinate have sufficient information to make a high-quality decision? Several subordinates: Is conflict among subordinates over preferred solutions likely? Depending on the characteristics of the conflict either autocratic or participative decision-making can be applied. Crucial is whether the conflict develops the group or hampers the process.

Appendix 2. Possible decision-making processes in the Vroom-Yetton model (Vroom and Jago, 1988)

(1) A1 = Autocratic decision-making, the leader alone makes the decision with the information available.

(2) A2 = The leader makes the decision after collecting essential information from subordinate/s. The subordinate/s do not participate in defining the problem, generating ideas or evaluating alternatives.

(3) C1 = Consultative decision-making, the leader shares the problem with relevant subordinate/s individually, listening to suggestions which may or may not influence the outcome.

(4) One subordinate: G1 = Like C2 including subordinate and leader. Several subordinates: C2 = Also consultative, the leader shares the problem with the subordinates as a group, listening to suggestions which may or may not influence the outcome.

(5) One subordinate: D1 = the leader delegates the problem to a subordinate who is given full responsibility to reach a solution. Several subordinates: G2 = Group focused decision-making, total participation in problem definition, generating ideas, evaluating alternatives. It is based on consensus and the leader does not try to persuade the group to adapt to his or her ideas.

Appendix 3. Cases presented to managers

Case 1. You are responsible for the employment of a new person who shall be able to function in your group. In the group, several types of competencies are represented, and the new person is thought to make a complement to the group. The decision concerns how the recruitment procedure should be carried out.

Case 2. A plan for the development of people's competencies is made at your department. All people will not be able to be included in this planned education. To be able to achieve the goals of

the organization, two out of four employees will receive the education. There are no differences in competencies or in preconditions among the candidates. The decision concerns on what criteria people should be selected to benefit from taking part in the education.

Case 3. The situation at your department demands that new computers must be ordered to facilitate the work of the employees. The decision concerns what kind of computers will be purchased.

Case 4. You are apt to decide about whether outside expertise should be consulted in order to solve an internal crisis, or if you should deal with the problem yourself. It is assumed that seven people in the department are involved in this conflict. At the moment, there is no communication going on between the involved parties.

Case 5. A computer in the department has broken down and a new one must be ordered. The decision concerns what type of machine should be purchased.

Case 6. A person at your department must be selected to take contact with an important customer. All people at the department seem to have the same requirements and competencies that are needed for this mission. The decision concerns the criteria stipulating who will be selected to take contact with the customer.

Questions asked to managers with subsequent response alternatives

In which of the following ways would you make the decision? Please restrict your choice to one alternative.

(a) I make the decision myself on the basis of the information I have at my disposal.

(b) I provide the group in question with information about the issue at stake in order to receive ideas and propositions for solutions. Thereafter I make the decision, with or without taking these suggestions into account.

(c) I gather the group in order to jointly define the problem and think of solutions. The group should in itself arrive at a solution.

(d) I collect all relevant information from the employees and then make the decision on my own.

Which alternative do you chose (a, b, c, or d)?: _____

Please rank order the importance of the following dimensions for the scenario presented above (1 = most important, 2 = moderately important, and 3 = least important).

(a) The manager's knowledge about the issue at stake _____

(b) The group's knowledge about the issue at stake _____

(c) The group's support of, and commitment to, the goals of the organization _____