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Determinants of health policy impact: comparative results of a European policymaker study

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SUMMARY

Objectives: This article will use a new theoretical framework for the analysis of health policy impact introduced by Rütten et al. (2003). In particular, it will report on a comparative European study of policymakers' perception and evaluation of specific determinants of the policy impact, both in terms of output (implemented measures) and outcome (health behaviour change). Policy determinants investigated are goals, resources, obligations and opportunities as related to the policymaking process.

Methods: Theory is applied to a comparative analysis of prevention and health promotion policy in Belgium, Finland, Germany, The Netherlands, Spain and Switzerland. The study is MED2-part of a project that has developed a Methodology for the Analysis of the Rationality and Effectiveness of Prevention and Health Promotion Strategies (MAREPS) within the EU-BIO-program. A mail survey of 719 policymakers on the executive and administrative level selected by a focused sample procedure was conducted. This survey used policymakers' experience and evaluative expertise to analyse determinants of policy output and outcome.

Results: Regression analyses reveal differential predictive power of policy goals, resources, obligations, as well as of political, organisational and public opportunities. For instance, whereas resources, concreteness of goals, and public opportunities have significant importance for health outcome of policy, obligations and organisational opportunities significantly predict policy output.

Conclusions: Results are discussed in terms of rationality and effectiveness of health policy. They indicate that six sensitising constructs derived from the theoretical framework represent equivalent structures across nations. They comprise a validated instrument that can be used for further comparative health policy research.

Health promotion practice is very much determined by policymaking processes. This has been recognised by the Ottawa Charter for Health Promotion (WHO 1986) as well as subsequent WHO declarations and targets such as Health 21. In some European countries, legislation, government, and administrative infrastructures appear to be quite supportive in defining goals and allocating resources for health promotion; thus, their policy systems provide appropriate incentives for promoting health behaviour and creating supportive environments. In other countries, health promotion may not even get access to the policy agenda, leaving health promotion action e.g. to the individual engagement of public health professionals. Of course, most countries in Europe are in between these two extremes but policymaking processes are quite different and, correspondingly, countries may be more or less successful regarding health promotion policy development and impact.

In this situation, it appears to be particularly important to develop appropriate models and instruments of policy analysis and policy evaluation in health promotion which may be applied in comparative policy system analysis. First of all, such analysis should provide information on key determinants of health promotion policy development; second, it should investigate how such determinants influence policy impact; third, it may lead to a better understanding of best practices of decision making in health promotion. To conclude, this kind of policy analysis could contribute to our knowledge on both how to evaluate and how to improve the effectiveness of health promotion policy. To this aim, the present paper empirically applies a newly developed theoretical framework for health policy analysis.

STUDY QUESTIONS

The theoretical framework of this study has been introduced in detail in a previous paper (Rütten et al. 2003). Applying von Wright's (1976) general model on the "logic of events" to the context of policymaking, four determinants of policymaking were identified: goals, resources, obligations and opportunities. The crucial question arising at the end of that paper was whether – and how – these determinants influence the implementation and the impact of health policy. The model shown in Figure 1 is derived from this theory and can be used to explain the key concepts and questions of the present study.

[FIGURE 1]

First of all, the model implies that the four determinants influence the likelihood of policy being implemented and that this, in turn, influences the likelihood of achieving intended outcomes. Thus, a first basic question is whether any significant effect of such determinants on policy impact can be found in empirical study. In addition, von Wright's concept of the logic of events implies a strong relationship between the four determinants. For example, policy goals may only be achieved when resources are sufficient and obligations at least stand against it. Accordingly, empirical analysis should also investigate the interaction effects of policy determinants on policy impact.

Second, in our model the term impact is used as a more general concept of policy results which can be divided into two subdimensions:
1. "Output", i.e., immediate policy results such as the implementation of measures, e.g., anti-smoking media campaigns, which intend to achieve behaviour changes at the population level.
2. "Outcome", i.e., policy results related to effects achieved at population level, e.g., behaviour changes such as quitting smoking.

Thus, the second research question is whether the four determinants have any different significant effects related to the two subdimensions.

A third research question relates to the implications of the theory for internationally comparative analysis. As von Wright's theory approaches human action in general, and our adaptation of this theory aims at providing a general framework for policy analysis, the model should, on one hand, work in a cross-cultural study. That is to say, an evidence-based health promotion policy with concrete goals, sufficient resources and political and public support should, for example, have significant effects in any country under investigation. On the other hand, differences in the cultural context

between countries (Hofstede 2001) may also influence the impact of health policy, and should be considered as additional effects in empirical analysis.

Assumptions for empirical analysis

The following analysis will investigate the effects of the key determinants of health policy action described by Rütten et al. (2003) on the impact of different prevention and health promotion policies. In particular, it aims to measure effects on policy output, i.e., implemented measures, and policy outcome, i.e., achieved effects on the population level (thus, policy output and policy outcome are the outcomes examined in the present study). The analysis uses data from a policymaker survey; in other words, it employs policymakers' perception of policy process and impact. First, factor analytical procedures will test for the dimensionality of items developed and utilised to operationalise policy determinants and impact. Subsequently, research scales developed on this basis will be entered into statistical analyses in order to provide for an initial empirical investigation of the following assumptions:

- Assumption 1: Key determinants of health policy action, i.e., goals, resources, obligations, and opportunities, show main effects regarding the impact of prevention and health promotion policies, i.e., policy output and outcome.
- Assumption 2: In addition to these main effects, the internal determinants goals, resources and obligations show interaction effects with regard to the impact of prevention and health promotion policies, i.e., policy output and outcome.
- Assumption 3: Presuming the general validity of the model, both main and interaction effects of the key determinants remain significant when controlling for the effect of nation.
- Assumption 4: Nation as a structural variable indicating different situational contexts for health policy action shows an additional effect on policy impact.

METHODS

Frame of study

The present study was conducted as part of MAREPS, an international research project that has developed a *M*ethodology for the *A*nalysis of the *R*ationality and *E*ffectiveness of *P*revention and Health Promotion *S*trategies on behalf of the European Union. The project comprised policymaker and population studies conducted in Belgium, Finland, Germany, The Netherlands, Spain, and Switzerland. It empirically examined the different elements of health policy action, and analysed the development, implementation, impact and evaluation of health policies. Considering aspects of general health policy and international comparability, four specific policies had been selected: (1) early detection of breast cancer, (2) prevention of smoking, (3) promotion of sports and physical activity, and (4) creation of healthy living and working conditions. The following analysis uses the sum total of these policies and exposes them to the theoretical model in the analysis, i.e., it assumes general validity of the model for different health promotion policies as it does for health promotion policy across nations (see also below, Footnote 2).

Questionnaire development

Explorative interviews with a selection of policymakers were performed in each country to explore specificities of policy structures, and provide leads for a mail questionnaire. These explorative interviews, that lasted typically for more than an hour, were also used in order to identify key policymaking personnel for each of the four policies (see below, Sampling and realisation).

The mail questionnaire was developed in a joint workshop with all project parties after exploratory interviews and was then translated from the master-questionnaire in German and an accompanying equivalent English version into each of the other languages (Dutch, Finnish, Spanish). As far as possible bilingual translators were used. The method, proposed at times, to translate around a set of languages and retranslate into the original at the end as some kind of final test of equivalence of the instrument appeared neither practical nor possible within the constraints of the available budget, nor is its utility undisputed in multinational survey methodology (Alwin et al. 1994). The questionnaire was then pre-tested and a final standardised version developed.

SAMPLING AND REALISATION

The present study reports data from a policymaker survey in which a total of 1379 policymakers were selected via a focused sampling procedure. This kind of approach, sometimes also labelled purposive or judgmental sampling (Babbie 1992), was employed as a heuristic scheme guiding the sampling process mainly along three dimensions: Policymakers (1) known to be involved in at least one of the four policies investigated in MAREPS (see above, Frame of study) were selected (2) from all policy levels, i.e., typically from the national/ federal, state/regional, and local level, as well as (3) from both public and private policy agencies (in order to reflect the rising trend of privatisation, which besides other fields is operative in prevention and health promotion as well).

Specifically, involvement of policymakers in one of the policies was ensured by their exhaustive identification as key policymaking personnel using information on policy structures provided by documents, policy experts, as well as by the explorative interviews, where "involvement" meant that they held professional responsibility for one of the policies in their organisation or agency. Regarding the private sector, sickness funds and health insurance companies were a focus due to their central role in shaping and implementing health promotion policies.

Over and above these main sampling dimensions, a number of other points were also considered in sample selection. First, policymakers both in terms of (1) politicians and in terms of (2) ministerial officials and administrative personnel were included in the sampling frame (as has been noted by Lindblom 1968: 75, "… administrators inevitably make policy"). Second, related to this, care was taken that both (1) the level of policy formation and decision-making and (2) the level of policy implementation were represented. This is crucial since policy impact often is challenged by obstacles in implementing a policy, e.g., on local levels (Pressman & Wildavsky 1973). Finally, in general both senior policymakers as well as subordinate implementers were recruited as subjects.

In sum, this procedure on one hand aimed at a maximal variability in the sample of policymakers, and on the other hand was designed to reflect both common and specific structural characteristics of the different national health policy systems. Non-random sampling can be considered typical for sampling within organisations; i.e., a strictly random sample of a policy organisation would generate quite a few at a lower level of responsibility and might miss all or most of the higher echelon, thereby defeating its very purpose (Dexter 1970). Regarding realization, the survey was conducted from April to October 1997, using mailed questionnaire as survey method, by the research institutions conducting the project (see Acknowledgements). Two reminders by mail and a subsequent one by telephone were employed to improve survey response rate.

Sample description

A total of 719 questionnaires were returned, realizing the following national sample sizes: Belgium: N = 99, Finland: N=96, Germany: N = 126, The Netherlands: N = 134, Spain: N=92, and Switzerland: N = 172 (see Tab. 1). The mean age of respondents was 45.8, with 39.2% being female. Regarding policy level, 30.7% came from the national, 38.7% from the state or province, and 29.5% from the local level; 72.2% were from the public, and 27.8% from the private sector. The distribution over the four selected policies shown in Table 1 is a result of an item in the questionnaire asking which of the four the respective policymaker was involved in (see below, Measures). In sum, a response rate of 52.1% for a mail survey has to be considered well above average, in terms of an elite study it must be considered no better than moderate (Dillman 1978); at the same time, no noteworthy variations were observed across different levels of policymakers. As the present survey was in its major goal considered to be exploratory and mainly an attempt to test out a novel theory, the response rate may be considered adequate for the following analyses.

[TABLE 1]

Measures

In the standardised questionnaire[1], policymakers were asked to indicate that one of the four policies which they themselves were mainly involved in; this item was used as a screening question for the

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[1]Translations of questionnaire measures are available from the corresponding author.

policy involvement the policymakers had been selected for in the first place. With regard to this particular policy, questions related to all components of the theoretical model plus questions about the impact and evaluation of the pursued policy action were posed that had been developed using the results of the explorative interviews. Specifically, 35 items were included to measure policy goals, obligations, resources, and opportunities, and 14 items to indicate policy impact and evaluation practices. To re-iterate, respondents were instructed to relate their answers exclusively to that one of the four policies previously selected to be their main area of responsibility.

Questions with their items were scaled on the basis of fivepoint Likert-scales asking policymakers to what degree a statement was definitely true or not true at all, or, in case of opportunity-items, whether things had improved or worsened in the last year.

In line with the theoretical perspective, the present analysis uses operationalised forms of the concepts of goals, resources, obligations, and opportunities. Regarding goals, the respective item pool included both structural and substantive aspects. For example, policymakers were asked to indicate among others whether official goals were given, and whether these goals were concrete enough.

Items pertaining to resources among others are related to the sufficiency of personnel and the capability of the organisation which the policymaker represented. Besides, the monetary situation was assessed asking whether there were sufficient financial resources.

Obligation items comprised formal legislation, international agreements and more informal aspects such as personal commitment and professional role, as well as the scientific evidence basis for the action and the organisation's amenability to the population.

According to the theory, opportunities for health policy action are related to relevant changes in the policy environment. For example, items regarding recent changes in the political climate, in intra- and inter-organisational co-operation, as well as in public and media support were formulated. To investigate policy impact, items both for policy output and policy outcome were developed to be able to differentiate these diverse policy results as outlined above. For example, an item asked for the extent to which various programs were implemented (policy output), whereas another item assessed to which extent the respondents' health policy action had attained the intended behaviour change in the population (policy outcome).

Factor analyses and scale construction

The 35 items to represent the four von Wright-constructs were submitted to a series of principal component analyses (PCA, orthogonal Varimax-rotation). These resulted in the identification of six factors defined by 20 items. Table 2 shows that these items comprise one factor each for goals, resources and obligations, whereas three dimensions were identified for the opportunity items, labelled organisational, political, and public opportunities. In accordance with this pattern which generally confirmed the theoretical expectations, scales were constructed by sum-scoring and subsequently dividing the sum-scores by the respective number of items defining the scales. Considering the explorative purpose of the study, internal consistency was considered to be sufficient for analysis (for Cronbach's Alphas, see Tab. 2).

[TABLE 2]

Next, those four of the 14 items operationalising policy impact and evaluation practices that were to measure impact, i.e., policy output and outcome (see Tab. 3), were also submitted to a PCA using orthogonal Varimax-rotation. With two factors set, Table 3 shows that the items are distinguishable in a way consistent with the defined structure, i.e., one factor for outcome led by the assertion that the intended behaviour change was achieved in the population, and one single-item factor denoting implemented measures.

[TABLE 3]

Statistical analyses

First, zero-order correlation analysis was conducted. Second, national differences in policy determinants were explored. Third, two hierarchical regressions were carried out for output and

outcome, respectively, in which predictors were entered into the equations in a theory-driven manner to determine which variables make unique contributions to the prediction of perceived impact, how much variance can be predicted by this set of variables, and whether this variance is greater than expected from chance alone. In the first step, goals, resources, and obligations were entered simultaneously. In the next two steps, all possible interaction terms (two-way and three-way) were entered to check for possible compensatory effects (for details of procedure see Aiken & West 1991). Opportunities were then entered in the fourth step. Finally, to control for cross-national differences possibly existing over and above the effects of the model components, the nation variable was introduced in the form of five dummy variables in the last step, with the most differing country regarding the policy determinants as reference group, i.e., Germany (see Fig. 2)[2].

[FIGURE 2]

RESULTS

Zero-order correlations

Table 4 shows the zero-order correlations of the six von Wright-related scales (policy determinants), policy output, and policy outcome. Among goals, resources, obligations, and the different kinds of opportunities, significant correlations range from $r = 0.15$ to 0.42, while on one hand, obligations and resources, and on the other, obligation and political opportunities are not associated in any significant way. Further, for policy output the strongest association is observed with organisational opportunities ($r = 0.23$, $p < 0.001$), whereas for outcome, public opportunities show the highest coefficient on this bi-variate level ($r = 0.37$, $p < 0.001$).

[TABLE 4]

National differences in policy determinants

Figure 2 presents, by nation, the observed means for all policy determinants, i.e., those variables to be used as regressors for policy output and outcome in the subsequent regression analyses. Overall mean differences are without exception significant[3]. When contrasting Germany with the other nations, it has the lowest mean value for goals, resources, political and public opportunities, whereas it is highest for obligations[4].

Hierarchical regression analysis for policy output[5,6]

The overall regression equation is significant ($R^2 = 0.19$, $F(15,567) = 8.56$; $p < 0.001$). As Table 5 shows, on one hand obligations prove to be an important single predictor, while on the other hand, among opportunities, organisational opportunities have a significant effect.

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[2] For the present purpose of investigating the research assumptions theoretically derived above for their validity with regard to prevention and health promotion policy in general, variations between the four specific policies which had been selected for the present project (see above, Frame of study), and had guided the sampling process, were not relevant. Accordingly, these areas were considered and treated as comparable at this point; for analyses contrasting them with regard to policy determinants, see Rütten et al. (2000a, chapter 5.1.1), and von Lengerke (2001, chapter 6.2.3).

[3] Goals: $F(5,594) = 12.15$; $p < 0.001$; Eta^2 = 0.09; obligations: $F(5,594) = 13.87$; $p < 0.001$; Eta^2 = 0.10; resources: $F(5,594) = 6.16$; $p < 0.001$; Eta^2 = 0.04; organisational opportunities: $F(5,594) = 5.27$, $p < 0.001$; Eta^2 = 0.04; political opportunities: $F(5,594) = 18.24$; $p < 0.001$; Eta^2 = 0.13; public opportunities: $F(5,594) = 4.12$; $p < 0.01$; Eta^2 = 0.03.

[4] Goals: $F(1,594) = 33.54$; $p < 0.001$; Eta^2 = 0.05; resources: $F(1,594) = 34.3$; $p < 0.001$; Eta^2 = 0.05; political opportunities: $F(1,594) = 52.52$; $p < 0.001$; Eta^2 = 0.08; public opportunities: $F(1,594) = 8.76$; $p < 0.05$; Eta^2 = 0.01; obligations $F(1,594) = 9.73$; $p < 0.05$; Eta^2 = 0.01.

[5] Following the procedure suggested by Aiken & West (1991: 43), both predictors and criteria were z-standardised before regression analyses. Correspondingly, B-coefficients are reported.

[6] Differences between the total sample size and the samples entering the hierarchical regressions for output and outcome result partly from listwise deletion in case of missing data regarding the items making up the research scales. Moreover, only respondents were included who in the questionnaire assigned themselves unequivocally to one and only one of the four selected policies (see above, Measures).

[TABLE 5]

At the same time, two interaction effects are (marginally) significant in this model: goals x resources (i.e., a two-way interaction), and goals X resources X obligations (i.e., the three-way interaction). To start with the latter, the effect of obligations is in tendency conditional on the values of goals and resources. As Figure 3 shows, there is one specific constellation when obligations do not predict perceived output significantly, namely when both goals are concrete and resources are high.

[FIGURE 3]

Moreover, although goals and resources are not significant single predictors, there is a significant two-way interaction. Figure 4 shows that resources obviously are important for output in a statistically significant way when goals are low ($B = 0.16$; $p < 0.01$), and that, complementarily, this also holds for goals, which only have an effect in the case of low resources ($B = 0.20$; $p < 0.001$).

[FIGURE 4]

With regard to nation, B-coefficients for the five dummies are all negative and significant[7], indicating than German health promotion policymakers report higher output that their counterparts in each of the other nations covered by the survey.

Hierarchical regression analysis for policy outcome
Here, the regression equation is also overall significant ($R^2 = 0.30$, $F(15,548) = 15.4$; $p < 0.001$; see Table 6). However, in contrast to output, not obligations, but goals and resources are significant single predictors for outcome. There are evidently no significant interaction effects. Among opportunities, in contrast to the analysis for policy output, public opportunities have a significant effect.

[TABLE 6]

Over and above the von Wright-model components, the variable nation has an influence in form of four significant contrasts. The comparisons between Belgium and The Netherlands vs Germany both have negative B-coefficients, respectively, thus replicating the corresponding findings for output. On the contrary, the contrasts of Spain vs Germany and Switzerland vs Germany are positive, indicating higher policy outcome in those countries when compared to Germany[8].

DISCUSSION
Empirical analyses of cross-national data from a comparative European policymaker study show considerable predictive value of four key determinants concerning the impact of prevention and health promotion policy. Regarding our assumption 1, not all predicted associations but rather two distinct patterns were observed for policy output and policy outcome, respectively. The policy determinants goals, resources, and public opportunities (in terms of population and media support) have significant main effects on health policy outcome, i.e., behavioural changes on the population level. In contrast, obligations towards the population and personal/professional commitment have a significant effect on the output of health policy in terms of various programs being implemented; in this regard, also organisational opportunities related to intra-organisational co-operation have a significant, positive effect.

Considering these results and relating them to our practical example of swimming lessons from the previous theory paper (Rütten et al. 2003), a mayor who approaches public health outcomes by promoting health-enhancing physical activity in the community might be well advised to (1) specify

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[7] Belgium: B = −0.33; t(567) = −6.69; p < 0.001; Finnland: B = −0.19; t(567) = −3.73; p < 0.001; The Netherlands: B = −0.13; t(567) = −2.28; p < 0.05; Spain: B = −0.11; t(567) = −2.1; p < 0.05; Switzerland: B = −0.25; t(567) = −5.08; p < 0.001.
[8] To check for differential predictive validity of "I-form"-items vs organisational items, the former were eliminated from the regression analyses both for output and outcome to test their specific impact. The results did not change in a significant way; thus, there is no indication that they measure different structural levels than the organisational items.

concrete goals, e.g., targeting a specified increase of participation in regular physical activity within a defined period of time, (2) focus on activities in which the public is especially interested, e.g., indoor swimming and recreation activities, and (3) allocate sufficient personal and financial resources to improve the opportunities for the population to be more physically active, e.g., providing for new swimming facilities and programs. In contrast, for program implementation itself, the mayor should foster the obligations of his staff regarding this issue, and the organisational opportunities (co-operation etc.) in his administration (these variables being the two which significantly associate with health policy output).

In addition, the regression analysis for health policy output shows two significant interaction effects in line with assumption 2. Both effects show negative B-coefficients, indicating that (1) goals and resources only have an effect if the other one is low, respectively, and (2) that obligations have no effect when both goals and resources are high. Although the latter finding should be dealt with some caution because of its relative weakness in statistical terms, these results need further investigation. They might indicate that policymakers develop distinct patterns of impact orientation corresponding to the respective constellation of the key determinants of health policy action. On one hand, to develop a real outcome orientation, policymaker may have to be sure that (1) the goals are officially spelled out and concrete enough, (2) sufficient personal and financial resources are available, and (3), most importantly, they can count on public interest and support with regard to the specific policies they are going to implement. On the other hand, if policy goals are rather unclear or resources are low, but the perceived obligations related to the population and the personal/professional commitment are high, policymakers might develop a specific output orientation. This orientation could help policymakers to compensate for low resources or unclear goals which hinder them to effectively approach and achieve health outcomes on the population level.

As expected in assumption 3, all the described effects of key determinants of health policy action on impact of prevention policies remain significant even when controlling for nation, supporting the general validity of model.

Nevertheless, in line with assumption 4, variances related to the different nations involved in the study are significant in both analyses. Using Germany as a reference group, and beginning with the case of health policy outcome, significant effects are related to Belgium, The Netherlands, Spain and (marginally significant) to Switzerland. While the former two show negative B-coefficients, indicating that the real health policy outcomes in these countries are below the outcome one could expect in correspondence with the effects of goals, resources, obligations, and opportunities, Spanish and Swiss policymakers perceive higher outcomes than the key determinants of health policy in this country would predict.

In the case of policy output, all other nations show negative B-coefficients when compared to Germany as reference group. Thus, the so-called "output orientation" seems to be especially common among German policymakers. This fits with results showing for German policymakers the lowest values concerning concreteness of goals, available resources, and political and public opportunities, but the highest value for obligations among all nations compared.

Generally, the significant cross-national differences found in policy determinants and impact suggest that differences in political context may also influence health policies. In particular, Navarro and Shi (2001) have provided evidence that re-distributive and full-employment policies usually pursued by social-democratic governments are generally more successful in improving population health. This given, the present result that goals, resources, and public opportunities – notably key determinants of policy outcome – are lowest in Germany but highest in Finland (goals) and The Netherlands (resources, public opportunities) could be related to different political contexts prior to the MAREPS survey, namely substantial periods of Christian-democratically led governments in Germany vs. Social-democratic Finnish presidency and Social-democratic participation in Dutch governments.

CONCLUSIONS

The present structural analysis based on data from a select sample of executive and administrative policymakers across six nations demonstrates the explanatory power of von Wright's (1976) "logic of events" as adapted by Rütten et al. (2003) to health policymaking. At the same time the operational nature of its constructs imply a high notion of practical usage. We hold that constructs like goals,

obligation, resources and opportunities are easily understood and thus can become useful analytical terms and policy guidelines for the policy practitioner. The very fact that the construct of opportunities had, as a consequence of empirical testing, to be redefined in three separate dimensions of organisational, political, and public opportunities actually testifies to the concreteness of this theory. That it represents a powerful instrument for international comparative research of health policy is quite encouraging as well.

The results indicate in line with the theory that the six sensitising constructs derived from the logic of events (von Wright 1976) represent equivalent structures across nations and allow to measure the structure of health policy. Their predictive power is particularly strong when measuring policy outcome by three items led by efficiently attained health behaviour change in the population in factor analysis. Also, policy output in terms of implemented measures can be explained and understood by using these constructs.

At the same time, the results show the relevance of the variable nation for both outcome and output. This indicates that despite a structural equivalence for the theory, it shows variances by nation that are also indicated by the differential importance assigned to the constructs in individual nations. It is no small result to find that resources to pursue the four policies are high in the Netherlands, while they are low in Germany and vice versa showing Germany, high on output, while Belgium is lower in that dimension.

The assumption that policymakers, due to their position and role requirements, represent policy and system structures appears to be confirmed through the analysis. Moreover, the finding of a good fit between policymakers' perception of different policy dimensions and the theoretical model supports the assumption that policymakers are highly sensitive to the factors that may contribute to policy impact. This is a result for prevention and health promotion policy; it would be of genuine interest if that could be confirmed for other policy systems. Still, however, it would be desirable in future studies to validate the present findings using more objective measures of policy impact; this would render still stronger support (1) for the validity of the operationalisations and research scales employed in the present study, and (2) for the logic of events as an analytical tool for policy implementation research and practice.

In terms of methodology the validation of the theoretical constructs should be considered an encouraging step towards the development of an appropriate evaluation approach and instrument to assess the rationality and effectiveness of different prevention and health promotion policies. Further refinements of the indicators and their respective items are possible. The indicators for outcome and output need further research. Outcome items can be advanced beyond the three that proved to be valid here. Output definitely needs to be extended beyond only one item. It should be noted that concepts and results of the survey were presented to policymakers and high-ranking ministry officials from three of the six countries in a final joint project workshop. This was explicitly designed for a communicative validation of the core concepts used in MAREPS. The policymakers evaluated both the general approach and individual constructs as relevant to their experiences in health policy processes. In particular, goals, resources and public support were confirmed as valid determinants of policy outcome.

This theory and its operationalisation should be useful in other health policy studies and analyses. Moreover, the results of the present analysis suggest further research on the concrete relationship between key determinants of health policy action and the health behaviour of the population. Such analysis has been conducted on the basis of the comparative population survey of the MAREPS-project, in particular regarding physical activity (Rütten et al. 2001) and political participation in health promotion (Rütten et al. 2000b). Here, not only has the present theoretical approach been applied on the population level, but – in analysing people's policy perception, health-related behaviour, and health status – other indications of policy impact have been examined. Future research should focus on efforts to expand such integration – both theoretically and empirically – of health promotion research on policy and population levels.

ZUSAMMENFASSUNG

Determinanten des Impacts von Gesundheitspolitik: vergleichende Ergebnisse einer europäischen Policymaker-Studie

Fragestellung: Dieser Beitrag wendet das jüngst von Rütten et al. (2003) vorgeschlagene theoretische Rahmenmodell für die Analyse des Impacts von Gesundheitspolitik an. Konkret wird über eine vergleichende europäische Studie berichtet, in der die Wahrnehmung und Bewertung spezifischer Politikdeterminanten (Ziele, Ressourcen, Verpflichtungen und Gelegenheiten) sowie des Impacts von Gesundheitspolitik (Output i. S. der Umsetzung von Massnahmen und Outcome i. S. der Modifikation von Gesundheitsverhalten) durch Policymaker (Politikakteure) im Zusammenhang mit Prozessen der Politikentwicklung untersucht werden.

Methoden: Das Modell wird im Rahmen einer vergleichenden Analyse von Präventions- und Gesundheitsförderungsstrategien in Belgien, Deutschland, Finnland, den Niederlanden, der Schweiz und Spanien angewendet. Die Studie ist Teil eines Projektes, das im EU-BIOMED2-Programm eine Methodologie für die Analyse der Rationalität und Effektivität von Präventionsund Gesundheitsförderungs-Strategien (MAREPS) entwickelt hat. 719 Policymaker, die mittels einer sog. bewussten Stichprobenauswahl auf der exekutiven und der administrativen Ebene ausgewählt worden waren, nahmen an einer postalischen Befragung teil. Dabei nutzte die Studie die Erfahrung und evaluative Expertise der Policymaker, um die Determinanten des Outputs und des Outcomes von Gesundheits-Policies zu analysieren.

Ergebnisse: Regressionsanalysen weisen auf die differentielle prädiktive Bedeutung von Policy-Zielen, Ressourcen, Verpflichtungen sowie politischen, organisatorischen und öffentlichen Gelegenheiten hin. Während beispielsweise Ressourcen, die Konkretheit von Zielen und die Unterstützung durch die Öffentlichkeit in signifikanter Weise mit gesundheitsbezogenen Outcomes assoziiert sind, sagen Verpflichtungen und organisatorische Gelegenheiten den Output von Policies vorher.

Schlussfolgerungen: Die Ergebnisse werden im Hinblick auf die Rationalität und Effektivität von Gesundheitspolitik diskutiert. Sie zeigen, dass sechs aus dem theoretischen Rahmenmodell ableitbare und analytisch nutzbare Konstrukte im internationalen Vergleich äquivalente Strukturen abbilden. Sie stellen damit ein validiertes Instrument für künftige policyanalytische Gesundheitsforschung dar.

RÉSUMÉ

Déterminants de l'impact d'une politique de santé: résultats comparatifs d'une étude européenne sur les faiseurs de décision.

Objectifs: Cet article utilise un nouveau cadre théorique pour l'analyse de l'impact des politiques de santé introduit par Rütten et al. (2003). En particulier, elle rapporte les résultats d'une étude européenne sur la perception des décideurs politiques et l'évaluation de certains déterminants spécifiques de politique de santé, d'une part les objectifs, les ressources, les obligations et possibilités, et l'impact politique, d'autre part le produit (les mesures mises en place) et le résultat (changement des comportements de santé) associés au processus de décision politique.

Méthode: La théorie est appliquée à l'analyse comparative de politiques de prévention et de promotion de la santé en Belgique, Finlande, Allemagne, Hollande, Espagne et Suisse. Cette étude fait partie d'un projet qui a développé une méthodologie pour l'analyse de la rationalité et l'efficacité de stratégies de prévention et de promotion de la santé (MAREPS) au sein du programme EU-BIOMED2. Une enquête par courrier a été menée auprès de 719 décideurs politiques au niveau exécutif et administratif, sélectionnés par une méthode d'échantillonnage dirigée. Cette enquête a utilisé l'expérience des décideurs politiques et leur expertise en matière d'évaluation pour analyser les déterminants des produits et résultats d'une politique.

Résultats: Les analyses de régression ont dévoilé des différences de capacité prédictive en terme d'objectifs, ressources et contraintes d'une politique, de même que de possibilités politiques organisationnelles et publiques. Par exemple, bien que les ressources, la nature concrète des objectifs et les possibilités publiques ont une importance significative pour les résultats d'une politique de santé, les obligations et les contraintes organisationnelles prédisent de façon significative le produit d'une politique.

Conclusion: Les résultats sont discutés en terme de rationalité et d'efficacité d'une politique de santé. Ils indiquent qu'il y a six concepts clé dérivés du cadre théorique qui représentent des structures équivalentes dans les différentes nations. Ils ont été regroupés dans un instrument validé qui peut être utilisé pour poursuivre une politique comparative de recherche en matière de politique de santé.

TABLES AND FIGURES

Table 1 Sample characteristics

		Realized sample size N = 719			
Belgium N = 99	Finland N = 96	Germany N = 126	Netherlands N = 134	Spain N = 92	Switzerland N = 172
	Female 39.2%			Male 60.8%	
		Age mean = 45.8 std. dev. = 8.9			
	National/federal policy level 30.7%		State/province policy level 38.2%		Regional/local policy level 29.5%
	Public organisations 72.2%			Private organisations 27.8%	
Early detection of breast cancer 19.2%		Prevention of smoking 24.8%	Promotion of physical activity 26.6%		Creation of healthy conditions 29.2%

Table 4 Zero-order correlations (Pearson coefficients)

	Goals	Resources	Obligations	Organisational opportunities	Political opportunities	Public opportunities	Policy output
Resources	0.26***	—					
Obligations	0.28***	0.00	—				
Organisational opportunities	0.17***	0.15***	0.15***	—			
Political opportunities	0.21***	0.36***	0.05	0.22***	—		
Public opportunities	0.22***	0.30***	0.18***	0.27***	0.42***	—	
Policy output	0.08*	0.04	0.14**	0.07	0.23***	0.14**	—
Policy outcome	0.35***	0.28***	0.12**	0.17***	0.17***	0.37***	0.15***

$N_{listwise}$ = 558

Table 3 Principal component analysis of 4 items indicating health policy impact (Varimax-rotated, orthogonal solution, 2 factors set)

Scales (Cronbach's Alphas) Items	A	B
A. Outcome (α = 0.67)		
1. The action has achieved the intended behaviour change in the population.	**0.80**	0.08
2. Considering cost-benefits, the action was worthwhile.	**0.77**	−0.02
3. Personally I am satisfied with the results.	**0.76**	0.14
B. Output (–)		
1. Various programs were implemented.	0.08	**0.99**
Eigenvalue	1.8	1.0
% of variance	45.3	25.3

Notes: Loadings above 0.5 are highlighted by bold format.
English translations of originally German items are shown.

Table 2 Principal component analysis of 20 items indicating determinants of health policy impact (Varimax-rotated, orthogonal solution)

Scales (Cronbach's Alphas) Items	A	B	C	D	E	F
A. Political opportunities (α = 0.75)						
1. The political climate has worsened/improved.	**0.73**	0.22	−0.04	0.01	0.20	−0.12
2. The support from other sectors (economy, science, justice) has worsened/improved.	**0.73**	0.11	0.02	−0.04	0.11	0.15
3. The co-operation between political levels involved (federal, state, municipalities) has worsened/improved.	**0.70**	0.08	−0.00	0.22	0.06	−0.13
4. The co-operation between public and private organisations has worsened/improved. 0	**0.59**	0.10	0.07	0.22	−0.10	0.25
5. The lobby for the action has worsened/improved.	**0.53**	0.06	0.00	0.38	−0.04	0.22
B. Resources (α = 0.79)						
1. There is enough personnel.	0.05	**0.85**	−0.04	0.12	0.08	−0.05
2. My organisation has the necessary capacities.	0.16	**0.83**	−0.01	0.06	0.14	0.07
3. There are sufficient financial resources.	0.27	**0.72**	−0.03	0.06	0.03	0.15
C. Obligations (α = 0.66)						
1. Personally I feel obliged to do something in this field.	0.02	0.03	**0.75**	0.02	0.03	0.08
2. The action is part of my professional duties.	−0.00	−0.10	**0.72**	0.16	0.13	0.01
3. Scientific results demand the action.	−0.16	−0.07	**0.70**	0.03	−0.01	0.26
4. We are obliged to the population to act in this area.	0.14	0.07	**0.63**	−0.09	0.16	−0.13
D. Public opportunities (α = 0.55)						
1. The involvement of the population has worsened/improved.	0.21	0.09	−0.01	**0.75**	0.09	0.09
2. The population supports the action.	0.14	−0.02	−0.00	**0.63**	−0.05	0.25
3. The media's interest has worsened/improved.	0.05	0.32	0.24	**0.62**	0.20	−0.13
E. Goals (α = 0.54)						
1. The goals are officially spelled out.	0.09	0.13	0.06	−0.04	**0.73**	0.03
2. The goals are concrete enough.	−0.04	0.17	0.01	0.14	**0.72**	0.18
3. The action centres on improving the health of the population.	0.14	−0.05	0.27	0.06	**0.61**	−0.01
F. Organisational opportunities (α = 0.57)						
1. My own involvement has worsened/improved.	0.11	0.09	0.02	0.09	0.13	**0.77**
2. The co-operation within my organisation has worsened/improved.	0.04	0.03	0.12	0.13	0.05	**0.76**
Eigenvalue	2.4	2.2	2.1	1.7	1.6	1.6
% of variance	12.2	11.0	10.6	8.5	8.1	7.9

Notes: Loadings above 0.5 are highlighted by bold format. English translations of originally German items are shown.

Table 5 Output of health policy action regressed on goals, resources, obligations, all interactions, opportunities, and nation

Step	Predictor	r#	B##	R-squared	R-squared change	F change
1.	goals	0.06	0.06	0.02	0.02	4.6**
	resources	0.02	0.02			
	obligations	0.09	0.10*			
2.	goals x resources	−0.13	−0.12**	0.05	0.03	5.4**
	goals x obligations	−0.03	−0.03			
	resources x obligations	−0.04	−0.04			
3.	goals x resources x obligations	−0.07	−0.05(*)	0.06	0.01	4.2*
4.	political opportunities	0.05	0.05	0.10	0.04	9.1***
	organisational opportunities	0.16	0.16***			
	public opportunities	0.07	0.07			
5. ###	Belgium vs. Germany	−0.27	−0.33***	0.19	0.09	11.8***
	Finland vs. Germany	−0.16	−0.19***			
	Netherlands vs. Germany	−0.10	−0.13*			
	Spain vs. Germany	−0.21	−0.25***			
	Switzerland vs. Germany	−0.09	−0.11*			

N = 583 (*) p < 0.10 * p < 0.05 ** p < 0.01 *** p < 0.001.
#   r = partial correlation coefficient.
B = unstandardised regression coefficient.
Dummy variables (reference group is Germany).

Table 6 Outcome of health policy action regressed on goals, resources, obligations, all interactions, opportunities, and nation

Step	Predictor	r#	B##	R-squared	R-squared change	F change
1.	Goals	0.27	0.27***	0.16	0.16	34.9***
	Resources	0.16	0.16***			
	Obligations	−0.06	−0.06			
2.	Goals x resources	0.01	0.01	0.16	0.00	0.3
	Goals x obligations	−0.02	−0.01			
	Resources x obligations	0.03	0.02			
3.	Goals x resources x obligations	0.06	0.04	0.16	0.00	1.2
4.	Political opportunities	−0.05	−0.05	0.23	0.07	17.5***
	Organisational opportunities	0.06	0.06			
	Public opportunities	0.28	0.28***			
5. ###	Belgium vs. Germany	−0.10	−0.11*	0.30	0.07	9.9***
	Finland vs. Germany	0.07	0.07			
	Netherlands vs. Germany	−0.12	−0.15**			
	Spain vs. Germany	0.09	0.10*			
	Switzerland vs. Germany	0.07	0.08(*)			

N =564   (*) p < 0.10*; p < 0.05 **; p < 0.01 ***; p < 0.001.
\#   r = partial correlation coefficient.
\##   B = unstandardised regression coefficient.
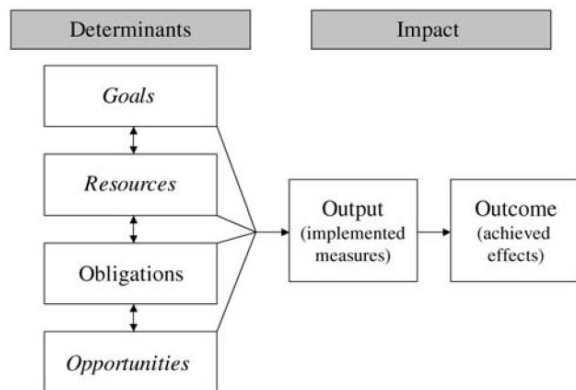\### Dummy variables (reference group is Germany).

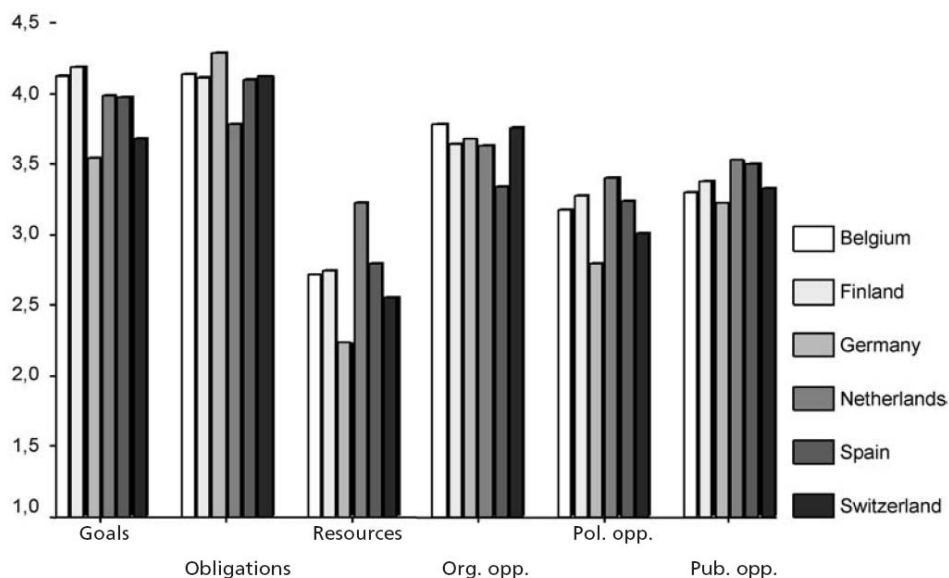**Figure 1** Model on policy determinants and policy impact

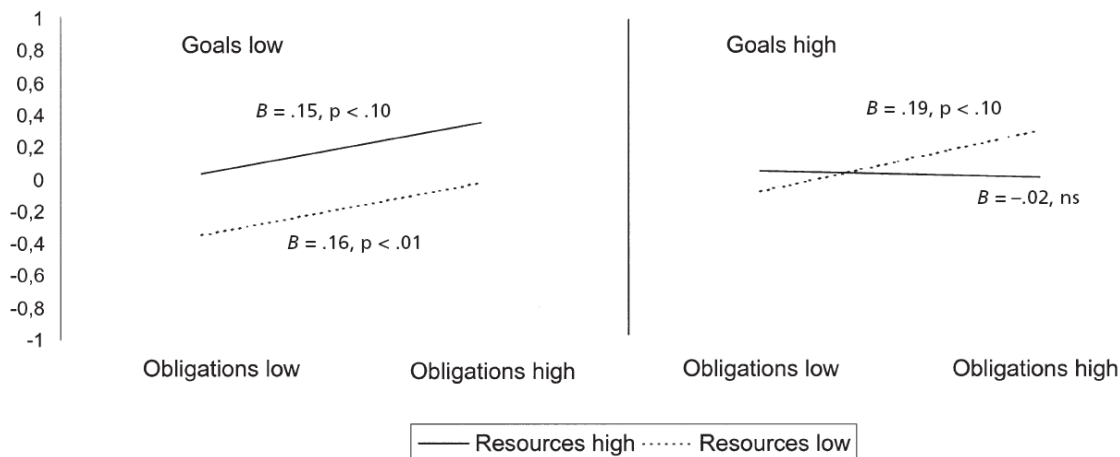**Figure 2** Mean values of policy determinants by nation

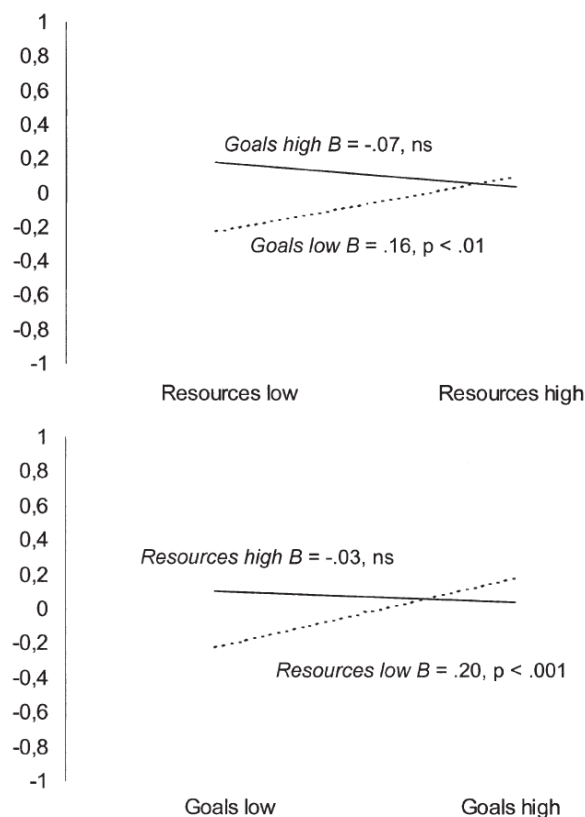**Figure 3** Three-way interaction goals x resources x obligations, dependent: policy output

Figure 4 Two-way interaction goals x resources, dependent: policy output

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