

APOM-project: a pilot study of pharmacy organization and management

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SOM theme A: Intra-firm coordination and change

Abstract

Recently, a Ph.D-study started regarding pharmacy, organization and management (APOM) in the Netherlands. The APOM-project deals with the structuring and steering of pharmacy organization. This article describes the theoretical background of a pilot study and the empirical results in a small sample (n=24). No generalization to the population of pharmacies in the Netherlands is possible. Three mixes of objectives in pharmacy organization are theoretically postulated; the product mix, the process mix, and the customer mix. Mainly, the purpose of the pilot study was method selection. Additionally, it was studied if thinking and acting of pharmacy managers corresponded, and, if theoretical pharmacy mixes corresponded with the empirical pharmacy mixes. Two methods were selected for the pharmacy manager only. Within most of pharmacies thinking and acting did not correspond. Thinking related to customer and product mainly, and acting related to process and customer mainly; four related clusters were defined.

Keywords

Community pharmacy
Management
Organization structure
Organization change
Pharmacy organization
Strategy
Working organization

APOM-project: a pilot study of pharmacy organization and management

Introduction

An increasing number of pharmacists feel the need for clarification of the organizational processes of the community pharmacy. Organizational studies have become increasingly important in the management of pharmacies. The studies to date cover a wide-range of issues, for example, financial management, personnel management, organization structure, types of pharmacy managers, et cetera. The pharmacist is becoming 'pharmacy manager'. The pharmacy manager is working on pharmaceutical tasks as well as managerial tasks. Structuring and steering of organizational processes are important to have a clear vision of the pharmacy as an organization. In the Netherlands, pharmacy organization is being studied in a Ph.D.-study with respect to pharmacy, organization and management (APOM) and was recently begun. In November 1994, in collaboration with Stichting Verenigde Nederlandse Apotheken (Stichting VNA is a foundation which concentrates on the acquisition of pharmacies and their temporary operation, offering young pharmacists opportunities to start their own business and the promotion of quality professional standards), and Stichting Apothekers in Loondienst (SAL) Apotheken (SAL Apotheken is a foundation which concentrates on the appointment of pharmacists on the basis of wage-earning in order to uncouple the amount of medicines sold from the personal income of the pharmacist, and offers various kinds of services for pharmacists), the Faculty of Management and Organization and the University Centre for Pharmacy (University of Groningen) in the Netherlands this Ph.D-study began. The APOM-project deals with the structuring and steering of pharmacy organization and will take four years.

This article describes a pilot study of the APOM-project. The goal of the pilot study was to select methods, which could identify a typology of steering measures as well as the organizational consistency, applicable for a survey. However, the main goal

for the pilot study was method selection. The article provides an insight into the theoretical background of the pilot study and the empirical results. The level of analysis was the pharmacy manager. Within this study, some well-known organization principles, the consistency of mission and organizational objectives and the consistency of thinking and acting, were used as the starting point of study. Organization studies relate to multidisciplinary approaches. In the pilot study of the APOM-project two different research methods were applied to pharmacy practice and Organization Theory. Firstly, deduction which analyses specific empirical situations based on theoretical facts, was applied to pharmacy practice. The APOM-project started with deduction of the theory of pharmacy practice; three pharmacy steering mixes were found in the literature of the pharmacy profession. Each pharmacy mix related to a set of steering measures selected by the pharmacy manager. Roughly, a set of steering measures related to product, money or customer of pharmacy. The aim of the pharmaceutical part of the pilot study is to give a rough sketch of the existence of the triangle of these three theoretical pharmacy mixes. Secondly, induction which produces general rules based on empirical facts, was applied to Organization Theory. The outcome of the APOM-project with respect to Organization Theory should be general rules based on empirical facts usable within pharmacy practice but maybe also in other branches. The aim of the organizational part of the pilot study is to give a rough sketch of the organizational structure, consistency between thinking and acting of pharmacy managers.

Three phases of the APOM-project

The APOM-project comprises three main phases. Phase 1 relates to a pilot study in which several data-collection methods were tested mainly, and, in addition, correspondence between thinking and acting of pharmacy managers was studied in a small sample (n=24). Within the pilot study seven methods were tested. Mainly, the purpose of the pilot study was method selection. What method can best be applied for Phase 2 of the APOM-project with a large sample? Additionally, it was studied if thinking and acting of pharmacy managers corresponded within the identified pharmacy mixes. The use of this additional material was at most to sketch a model of the pharmacy mixes and organizational structure with respect to

consistency between thinking and acting of pharmacy managers. It was assumed that consistent steering of the pharmacy organization will lead to improved manageability. The results of the pilot study cannot be applied for the use of generalization to the population of Dutch community pharmacies; only 24 Dutch community pharmacies were studied. Phase 2 relates to the empirical analyses of the theoretically observed pharmacy mixes in a large sample (n=200-300). Within Phase 2 it will be analyzed whether pharmacy managers steer internally consistent. The aim of this survey will be to describe the pharmacy mixes and organizational structure with respect to consistency between thinking and acting of pharmacy managers. Internal consistent steering is expected to lead to improved manageability. It will be analyzed if the three pharmacy mixes exist empirically, and, whether pharmacy managers act as they say they do. For example, it is analyzed whether a pharmacy manager who assumes that he/she is in the product mix actually does stress product and check, and not only customer satisfaction. Phase 3 relates to the empirical analyses of an organizational change to the customer mix in a relatively small sample (n=4-8). Within Phase 3 it is assumed that over the last several years the customer is becoming increasingly important within pharmacy organization. Within this developing context, the APOM-study should describe how an organizational change to the customer mix affects pharmacy organization. The actual change of pharmacy organization to the customer mix and the managerial problems in the organizational change will be described at the end of the APOM-project within four years. Ultimately, if the expectations of the APOM-project are to be fulfilled, the pharmacy manager should be able to improve the manageability of the pharmacy organization.

Organizational goals in pharmacy practice

Pharmacies, as well as other organizations, mostly have formed a consensus of their primary role in society; the *purpose* being, for example, the supply of medicine to the population. The studies to date showed that in most of the legislation passed within the last two decades this basic task comprises at least the control, storage and supply of medicines, as well as their preparation, development, and manufacture on a larger scale. In addition, to the basic task there has increasingly been a recognition

or imposition of other tasks, in particular the provision of information and counselling with regard to medicines, counselling in preventive health care, the notification of suspected adverse reactions, medication surveillance, and, on the research front, a role in the quest for new medical substances and forms of administration [1]. The *mission* of pharmacies is the unique reason for its existence; that which sets pharmacies apart from all other organizations. Although the terms 'purpose' and 'mission' are often used interchangeably, to distinguish between them may help in the understanding of organizational goals [2]. In many countries, good quality of the provision and use of medicine, would be such a mission. Within the broad limits of its purpose, each organization chooses a mission that can be described in terms of products and markets, services and customers [2]. Over the last fifty years the pharmacy, for example, has redefined its mission, shifting the emphasis of its operations away from the production of medicine to the support of pharmacotherapy and the provision of information [3], in order to improve drug use. The purpose of an organization is its primary role in society; the mission of an organization is the unique reason for its existence. In addition, in Organization Theory, it is well known that missions can be translated into various *objectives* that an organization must reach in order to achieve its goals [2]. For example, individual pharmacists can assert their own interpretation on the mission by stressing one or more objectives. The objectives may be described by the productivity of the pharmacy, the quality of the services given to the customer, or a variety of other ways. In an earlier phase of the APOM-project, three theoretical pharmacy mixes of objectives were defined, and, related to the patient care orientation and to the economic orientation: the product mix, the process mix, and the customer mix. The *product mix* deals with, the specific standards the medicine should meet, the minimilization of risks, and the minimilization of error occurrence. The pharmacy manager designs pharmacy organization with an emphasis on product and check. The pharmacy organization is structured in order to attain highest product quality and product safety. The main objective of pharmacy organization in the product mix is to maximize safety and quality with the least risk. The *process mix* deals with the way in which the dispensing of the prescription is organized, and to what extent it is organized profitably and efficiently. The pharmacy manager designs pharmacy organization with an emphasis on money. The

pharmacy organization is structured in order to attain highest productivity. The main objective of pharmacy organization in the process mix is to maximize productivity at the lowest cost. The *customer mix* deals with the way in which the wishes of the customers are met. The pharmacy manager designs the pharmacy organization with an emphasis on the customer. Pharmacy organization is structured in order to attain the highest quality service. The main objective of pharmacy organization in the customer mix is to maximize customer satisfaction. Within the APOM-project, it is assumed that there is no 'one best way' to organize quality, since different opinions exist about the interpretation of good quality. Pharmacy organization, for example, provides patient care as a part within the pharmaceutical business chain. The pharmacy manager selects objectives related to the care of the patient. In addition, pharmacy organization, as well as any other organization, needs turnover in order to sustain its activity. Pharmacy manager selects objectives related to the economic sustainability of the pharmacy organization. The selection of the set of objectives will lead to a certain steering mix; the sum total of steering measures which structures the organization.

Pharmacy qualities

Despite consensus of purpose, pharmacy managers interpret good quality in different ways. Several studies showed different opinions about the interpretation of good quality [4-6], for example, an emphasis on good quality of medicines, good quality of revenue or good quality of information. In addition, differences in the interpretation of good quality can vary over time. Organization objectives should not be regarded as an unchangeable set of goals. The objectives should be viewed as open to amendment and will change as strategies develop [7]. Pharmacists approached quality from their own point of view in the past; the back door of the pharmacy, where the medicine was brought in by the wholesaler. With a little exaggeration: good quality was perceived in relation to the purchase of medicine and the production of preparations. Currently, pharmacists approach quality from the point of view of the patient; the front door of the pharmacy. Good quality is related to the perception of the patient [8]. Quality, in this view, can only be good if pharmacy organization is tuned precisely to the wishes of the patient.

Pharmacy managers are able to compose a certain set of objectives. Many small organizations have an entrepreneurial mode of strategy making [9]. This means that the strategy-making process tends to be highly intuitive and non analytical. It is therefore not surprising that the resulting strategy, seldom made explicit, reflects the chief executive's implicit vision of the position of the organization in its environment. In fact, that strategy is more often than not a direct extrapolation of his personal beliefs, an extension of his own personality [10]. The pharmacy manager can design the pharmacy organization by selecting a specific set of internally consistent objectives. This selection will lead to a certain steering mix; the sum total of steering measures which structure the organization [11].

The pharmacy's environment

Pharmacy managers deal with the manageability of the internal pharmacy organization, and the manageability of the direct environment of pharmacy organization. Pharmaceutical care is not provided in isolation from other health-care services, but in collaboration with patients, physicians and other health-care providers [1, 12] (WHO 1993, personal communication). The pharmacist will have to characterize the pharmacy as a link in the total health-care system. For example, the pharmacist could concentrate on the consultation with general practitioners, specialists, and patient associations. In addition, the pharmacist could concentrate on the cooperation within the pharmaceutical business chain, and on the relations with home nursing services [12]. In addition, some aspects of pharmaceutical care can be defined. Firstly, the pharmaceutical care for the community; pharmacists individually and as a profession have important roles to play in positively influencing drug policy, drug use and outcomes as well as other aspects of health care. In many instances, firstly, pharmaceutical care should take place through collaboration with other health professionals at community level. Secondly, pharmaceutical care should be for individual patients, the so-called comprehensive pharmaceutical care, the delivery of which requires an ongoing, covenantal relationship between pharmacist and patient (WHO 1993, personal communication). In addition, pharmaceutical care can be defined as the intensive care by the pharmacist in order to achieve an optimal pharmacotherapy in which the patient and

the patient's complaint(s) are at the centre in order to realize an optimal quality of life [13-15].

Three pharmacy mixes

The pharmacy manager can design pharmacy organization in a variety of ways. Pharmacy organization can be designed by, for example, care and money [16 17]. Firstly, pharmacy organization provides care as a part within the pharmaceutical business chain. The pharmacy manager selects objectives related to the care for the patient. Secondly, pharmacy organization, as well as any other organization, needs turnover in order to sustain its activity. Pharmacy manager selects objectives related to the economic sustainability of the pharmacy organization. The selection of the set of objectives will lead to a certain steering mix; the sum total of steering measures which structure the organization. The steering mix for pharmacy organization is defined as a pharmacy mix. In the APOM-project three pharmacy mixes are defined related to the care orientation and to the economic orientation.

Three pharmacy mixes of objectives were found in a literature study; *the product mix*, *the process mix*, and *the customer mix*. Although several studies have resulted in the description of different types of pharmacy or different types of pharmacist [18] it is assumed here that there is no 'one best way' to organize quality. The pharmacy manager should seek to find internally consistent positions within one of the three pharmacy mixes, in order to be able to steer and structure the pharmacy organization. Internal consistency relates to the fit of the organization strategy with its objectives selected by the pharmacy manager. For example, if the pharmacy manager intends to attain maximum customer satisfaction, would the set of selected objectives be likely to achieve maximum customer satisfaction? In addition, with respect to internal consistency, one of the prime purposes of strategic analysis is to provide a clear picture of the organization and the environment in which it is operating. A useful summary of this situation might include a listing of the major opportunities and threats which face the organization, its particular strengths and weaknesses and any objectives which are a particularly important influence on policy [7]. At this stage, the pharmacy mixes are described in a pure form; it is assumed

for the moment that they are internally consistent. The APOM-project deals with three pharmacy mixes; the product mix, the process mix and the customer mix. Within this pilot study several methods were tested, and, in addition, correspondence between *thinking* and *acting* of pharmacy managers was studied in a small sample (n=24). Finally, it was studied if the theoretical pharmacy mixes corresponded with the empirical pharmacy mixes.

Methods

The first questionnaire was formulated in December of 1994. The final design of the questionnaire was completed in May 1995. Comments were received during this time from the supervisors, VNA/SAL and non-residents. Two categories of non-residents were interviewed: pharmacy managers and experts working in the community pharmacist's sector. It was assumed that the feed-back of the non-residents would contribute substantially to the content of the questionnaire. After completion of the final design in May 1995, the questionnaire was applied to 24 community pharmacies May through August 1995. For practical reasons the relatively small number of 24 pharmacies was selected. Twelve pharmacies were selected by Stichting VNA and SAL Apotheken, and related to Stichting VNA and SAL Apotheken (VNA/SAL pharmacies). Twelve additional pharmacies were randomly selected among pharmacies in the twelve Dutch provinces (table 1); one pharmacy out of each province (additional pharmacies). The level of analysis for the pilot study was the pharmacy manager.

province urbanisation	Groningen Friesland Drenthe	Gelderland Overijssel Flevoland	Noord-Holland Zuid-Holland Utrecht	Brabant Limburg Zeeland	total
urban		3	9	4	16
rural	3	4	1		8
total	3	7	10	4	24

Table 1 Geographical location of the pharmacies in the pilot study

Profile of the pharmacy

One data-collection method (method) was used to study the profile of pharmacy organization at all 24 pharmacies. Several subjects were analyzed with respect to general features of the pharmacy manager and of the pharmacy organization. Features of the pharmacy manager were seniority, sex, (in)dependence and division of time. Features of the pharmacy organization were organizational form, cooperation, location, part-time and full-time personnel, FTE pharmacists, FTE other personnel, flow of prescriptions, flow of patients, turnover and net profit. A total number of 121 items (=questions) was used with a frequency of 24 pharmacies for the profile of pharmacy organization. The data for profile were used for a frequency distribution.

Thinking of the pharmacy manager

All data-collection methods (methods) with respect to thinking were made by the pharmacy manager. Methods used were questionnaires, prioritizing activities with cards and indicating a position of the pharmacy manager in a drawing of the pharmacy mixes. Per pharmacy manager two data-collection methods were tested; each pharmacy manager received two questionnaires with respect to thinking. At all pharmacies a method was used in which pharmacy managers prioritized their activities (123-methods). Additionally, two short methods were used, in which pharmacy managers prioritized their activities (card method and drawing method); twelve pharmacies per short method. A total number of 232 items was used with a frequency of 12 pharmacies per method for thinking of the pharmacy manager. All questions of the 123-methods comprised three sub-questions with respect to the three pharmacy mixes. The sub-questions were ranked on a scale from 1 to 3, representing 'important'-'less important'-'even less important' issues. The 123-methods comprised the subjects Information, Administration, Automation, External Contacts, Facilities, Analysis, Organization of Labour, Personnel, Competence, Organization Standards and Productivity. Firstly, for twelve pharmacies the method comprised 28 questions, in which the relation of the question to the pharmacy mix was mentioned (123-method-A). The 123-method A comprised 84 items with a frequency of 12 pharmacies. Secondly, for twelve pharmacies the method comprised

45 questions, in which the relation of the question to the pharmacy mix was not mentioned (123-method-B). The 123-method B comprised 125 items with a frequency of 12 pharmacies. In addition, two short methods were used. The first short method, the card method, comprised two sets of 10 cards, every card related to a specific pharmacy mix. Each set of cards was divided in three groups: 'important', 'not important' and 'rest'. Per set 3 or 4 cards were to be selected in the category 'important'. Within this category the cards were ranked from 1 to 4, representing most to least important, respectively. The card method comprised 20 items with a frequency of 12 pharmacies. The second short method, the drawing method, comprised a drawing in the triangle of the three pharmacy mixes. Three positions were ranked by marks in the drawing, representing an angular point, moving along the axe and a diagonal-line endpoint. The pharmacy manager located the pharmacy organization in the drawing. The drawing method comprised 3 items with a frequency of 12 pharmacies. The data for thinking were processed with a Friedman test mainly. The Friedman test is a distribution-free test procedure and calculates a mean rank. If the observations can be ranked, the Friedman test is a very powerful analytic tool. The Friedman-test processing comprised 123-method A, 123-method B and card method. The drawing method was not processed statistically, but was presented as a pictogram. Four methods were tested to study the thinking of the pharmacy manager.

Acting of the pharmacy manager

Three data-collection methods (methods) were tested to study acting of the pharmacy manager; a method for the pharmacy manager, the pharmacy personnel and the researcher. The method for the pharmacy manager was the main instrument to measure acting. It was expected that the pharmacy manager could have been able to select questions in accordance with correspondence. In order to avoid this problem other methods, for the pharmacy personnel and for the researcher, were used as a 'check'. Within all three methods the level of analysis was the pharmacy manager. All methods comprised the subjects Information, Administration, Automation, External Contacts, Facilities, Analysis, Organization of Labour, Personnel, Competence, Organization Standards and Productivity. A total number of 1.076

items, with a frequency of 24, 8 and 8 for the pharmacy manager, the pharmacy personnel and the researcher respectively, was used for acting of pharmacy organization. At all pharmacies the pharmacy manager was sent a questionnaire. The method for the pharmacy manager comprised 372 items (questions) with a frequency of 24 pharmacies; all pharmacy managers received this questionnaire. The methods for the pharmacy personnel comprised the second pharmacist and the pharmacy assistant. The method for the second pharmacist comprised 296 items with a frequency of 8 pharmacies, although only 2 pharmacies employed a second pharmacist. The method for the pharmacy assistant comprised 170 items with a frequency of 8 pharmacies. The method for the researcher comprised 238 items with a frequency of 8 pharmacies. In this situation, if correspondence in thinking and acting was observed, it would still be possible to test the realism of this outcome with the outcome of two additional methods, namely, for the pharmacy personnel and for the researcher. But if correspondence and *non*-correspondence were measured with the instrument for the pharmacy manager, it was assumed that no further comparisons were required for the purpose of Phase 2 with the large sample. At eight pharmacies only the questionnaires for the pharmacy manager were used. At eight pharmacies the personnel was sent a questionnaire also, and at eight pharmacies the researcher interviewed the pharmacy manager also. All the questionnaires consisted of binary questions (yes/no) related to the activities at the pharmacy organization. Cluster analysis is a multi-variate technique, each case describes more variables. Cluster analysis divides cases in several groups. The cases within one group should be very alike, and at least not be like cases in another group. The material used for cluster analysis comprised ratio scores (values 0-1) for all pharmacy-mix-related categories. The actual score per pharmacy was divided by the maximum possible score for that pharmacy, for all ratio scores. The height of the ratio score per pharmacy-mix-related category was the main focus of the clustering.

To be sure that the study, when repeated, should produce the same results, reliability was tested. The reliability of the pilot study was expressed with Cronbach's alpha for the selected methods for thinking and for acting of pharmacy managers.

Cronbach's alpha is based on the internal consistency of the test. Within this method the reliability is based on the average correlation of items within a test. Since alpha can be interpreted as a correlation coefficient, it ranges in value from 0 to 1.

Results

The results were also described in three main groups: profile of pharmacy organization, thinking of pharmacy managers and acting of pharmacy managers.

Profile of the pharmacy

The profile of pharmacy organization showed that the pharmacy managers were mostly male (71%). Within the pilot group most of the pharmacy managers had a seniority between 6 and 15 years (62%). The time spent on tasks directly relating to the pharmacy organization was more than 40 hours for most of the pharmacy managers (79%). The time spent on tasks indirectly relating to the pharmacy organization was less than 10 hours for most of the pharmacy managers (71%). Within the pilot group most of the pharmacy organizations were managed by an independent pharmacy manager (67%). A smaller number of pharmacies was independent (46%). Most of the pharmacies were not participating in a pharmacy concept (75%). The location of most pharmacies was in the suburban area of a city (42%). The parttime personnel comprised 5-10 employees in most pharmacies (59%). The full-time personnel comprised 1-2 employees (33%) and 3-5 employees (33%). Most observed FTE for pharmacists comprised smaller than 1.5 FTE (79%). Most observed FTE for other pharmacy personnel comprised 4-7 FTE (46%). The number of prescriptions over 1993 comprised 50-70.000 prescriptions (29%) mostly. The most frequently observed number of patients over 1994 comprised 8-11.000 patients (54%). The turnover over 1993 comprised 2.5-3.5 million Dutch guilders (38%) mostly. The net profit over 1993 comprised 250-400.000 Dutch guilders (38%) mostly.

Thinking of the pharmacy manager

The thinking of the pharmacy manager was described with the results of the 123-methods A and B and the card method produced with a Friedman test. In addition, a pictogram describes the results of the drawing method. The results of the 123-method A comprised three categories of priorities. The first category related to the ranking customer-product-process (3 cases). The second category related to the ranking product-customer-process (7 cases). The third category related to the ranking product-process-customer (1 case). Additionally, the

data of one case were missing. The 123-method B comprised two categories of priorities. The first category related to the ranking customer-product-process (6 cases). The second category related to the ranking product-customer-process (6 cases). The card method comprised three categories of priorities. The first category related to the ranking customer-product-process (8 cases). The second category related to the ranking product-customer-process (2 cases). The third category related to the ranking customer-process-product (2 cases). The drawing method is divided in three stages: the three positions were ranked by marks in the drawing, representing an angular point, moving along the axe and a diagonal-line endpoint. The pharmacy manager located the pharmacy organization in the drawing. The result showed that most of the pharmacies start in the customer mix, move alongside the axe with the product mix and end moving over in the direction of the process mix (figure 1).

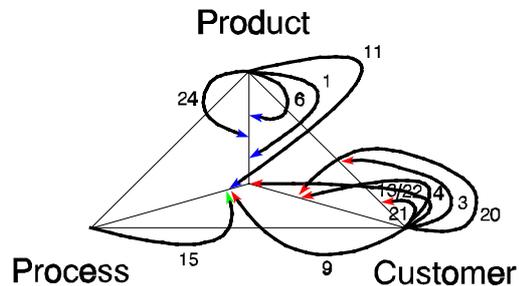


Figure 1 The results of the drawing-method priorities in dynamical perspective: the angular starting point, crossing the axe, and the diagonal-line end point.

Acting of the pharmacy manager

The acting of the pharmacy manager was described with the results of the questionnaire for the functions pharmacy manager, pharmacy personnel (second pharmacist and pharmacy assistant) and researcher. The results produced were ratio scores (values 0-1); The height of the ratio score per pharmacy-mix-related category was the main focus of the clustering. The result of the empirical clustering for the *pharmacy manager* was four clusters (table 2, figure 2-5).

cluster	ranking
1	(process≈product)>customer
2	(product≈process)>customer
3	product>(customer≈process)
4	product>(process≈customer)

Table 2 The empirical clustering for the pharmacy manager

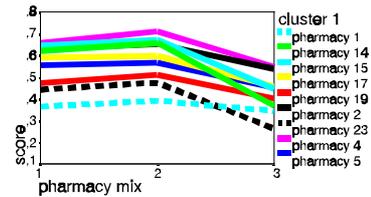


Figure 2 Relation of pharmacy-mix-related questions versus ratio scores for cluster 1.

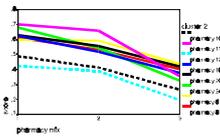


Figure 3 Relation of pharmacy-mix-related questions versus ratio scores for cluster 2.

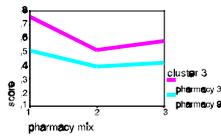


Figure 4 Relation of pharmacy-mix-related questions versus ratio scores for cluster 3.

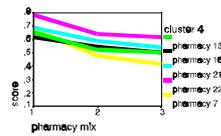


Figure 5 Relation of pharmacy-mix-related questions versus ratio scores for cluster 4.

For example, for pharmacy 23 (black dotted line at the bottom of figure 2) in cluster 1 (at the top of table 2), the relative scores were process (0,48), product (0,44) and customer (0,27). The result indicates that 48% of all process-related questions were

answered positively, 44% of the product-related questions and 27% of all customer-related questions.

The results of the clustering for the pharmacy personnel and the researcher were structured in the same way. The result of the empirical clustering for the *pharmacy personnel* was five clusters (table 3).

cluster	ranking
1	product \geq process \geq customer
2	product \geq customer \geq process
3	process>product>customer
4	process>customer>product
5	(process \approx product)>customer

Table 3 The empirical clustering for the pharmacy personnel.

The result of the empirical clustering for the *researcher* was four clusters with the ranking (table 4).

cluster	ranking
1	(product \approx process)>customer
2	(process \approx product)>customer
3	process>(product \approx customer)
4	process>product>customer

Table 4 The empirical clustering for the researcher.

Correspondence of thinking and acting

The applied methods show some variety in the results. How do *thinking* and *acting* correspond with respect to the applied methods? Table 5 shows the results of the four methods for *thinking* and three methods for *acting*. The results of the drawing method were only included to compare the first rank; the complete ranking of the drawing method was hardly comparable with the other methods.

The second column of table 5 being product-process-customer, shows that the number of cases for *thinking* (1 case) was in contrast with the number of cases for *acting* (25 cases). Within this rank, none of the cases were observed in both *thinking* and *acting*. The third column, being product-customer-process, shows that the number of cases for *thinking* (15 cases) corresponded with the number of cases for *acting* (13 cases). However, within this rank, only two cases were observed in both *thinking* and *acting*; case number 9 and 14 within 123-method A; case 9 was also observed in the method for the pharmacy manager, and case 14.3. in the method for the pharmacy personnel. The first-rank-only result of the drawing method shows four cases with 'product' in the first rank, three of which (case 6, 11 and 24) were in correspondence with *acting*.

The fourth column, being process-product-customer, shows that the number of cases for *thinking* (0 cases) was not at all corresponding with the number of cases for *acting* (29 cases). Within this rank, none of the cases were observed in both *thinking* and *acting*. The fifth column, being process-customer-product, shows that the number of cases for *thinking* (0 cases) was not corresponding with the number of cases for *acting* (1 case). Within this rank, the observed case in *acting* was not observed in *thinking*. The first-rank-only result of the drawing method shows one case with 'process' in the first rank, this case (case 15) was in correspondence with *acting*.

The sixth column, being customer-product-process, shows that the number of cases for *thinking* (17 cases) was not at all corresponding with the number of cases for *acting* (0 cases). Within this rank, none of the cases were observed in both *thinking* and *acting*. The seventh column, being customer-process-product, shows that the

number of cases for *thinking* (2 cases) was not corresponding with the number of cases for *acting* (0 cases). Within this rank, none of the cases were observed in both *thinking* and *acting*. The first-rank-only result of the drawing method shows seven cases with 'customer' in the first rank, none in correspondence with *acting*.

rank method	<i>product process customer</i>	<i>product customer process</i>	<i>process product customer</i>	<i>process customer product</i>	<i>customer product process</i>	<i>customer process product</i>
123-method A	case 1	case 6, 9, 11, 14, 18, 19, 23			case 3, 16, 17	
123-method B		case 5, 7, 8, 10, 20, 24			case 2, 12, 13, 15, 21, 22	
card method		case 10, 18			case 5, 7, 8, 12, 16, 17, 19, 23	case 2, 14
drawing method	case 1, 6, 11, 24		case 15		case 3, 4, 9, 13, 20, 21, 22	
total thinking	1	15	0	0	17	2
pharmacy manager	case 6, 7, 8, 10, 11, 12, 13, 16, 18, 20, 21, 22, 24	case 3, 9	case 1, 2, 4, 5, 14, 15, 17, 19, 23			
pharmacy personnel	case 2.3, 3.5, 3.6, 3.7, 14.2, 14.4, 15.4, 16.1, sec.11	case 2.2, 3.1, 3.2, 3.3, 3.4, 3.8, 14.3, 15.1, 16.2, 16.3, 16.4	case 2.1, 5.1, 5.2, 5.3, 5.4, sec.5, 11.1, 14.1, 14.5, 15.2, 15.3, 16.5, 21.1, 21.2, 21.4	case 21.3		
researcher	case 12, 17, 24		case 1, 4, 8, 19, 20			
total acting	25	13	29	1	0	0

Table 5 Relation of main ranks in *thinking* and *acting* methods

In addition, VNA/SAL pharmacies (case numbers 13-24) were compared with additional pharmacies (case numbers 1-12). Related to *thinking* all VNA/SAL pharmacies were observed in two ranking categories within the 123-methods. Firstly, 6 cases with the rank product-customer-process (case 14, 18, 19, 23, 20 and 24) were observed. Secondly, 6 cases with the rank customer-product-process (case 16,

17, 13, 15, 21 and 22) were observed. The additional pharmacies were observed in three ranking categories within the 123-methods. Firstly, 1 case with the rank product-process-customer (case 1) was observed. Secondly, 7 cases with the rank product-customer-process (case 6, 9, 11, 5, 7, 8 and 10) were observed. Thirdly, 3 cases with the rank customer-product-process (case 3, 2 and 12) were observed. One case was missing (case 4). *Non*-correspondence was observed for most (22) cases. Correspondence of *thinking* and *acting* was observed for one VNA/SAL pharmacy (case 14) and for one additional pharmacy (case 9).

Conclusion

The pilot study was made at 24 pharmacies in the Netherlands. The number of pharmacies included in this pilot was small. Within this study no generalization to the total population of Dutch pharmacies is possible. The aim of the pharmaceutical part of the pilot study was to give a rough sketch of the existence of the triangle of three theoretical pharmacy mixes. The aim of the organizational part of the pilot study was to give a rough sketch of the organizational structure, consistency between thinking and acting of pharmacy managers. The overall goal of the pilot study was to select methods, which could identify the pharmaceutical triangle as well as the organizational consistency, applicable for a survey. Several combinations of methods were tested and the results were compared. The pilot study sought to find out which of the used methods could be applied best to identify correspondence of thinking and acting of pharmacy managers for a large sample.

The method selection

The results of the methods for thinking showed that the ranking of the drawing method, although hardly comparable, and the card method did not correspond with the 123-methods completely. After the correction of the questionnaire with the results of the reliability test, the level of significance was higher with the 123-method-A than with the 123-method-B and the card method; within the drawing method no level of significance was used. In addition, the mode of the significance was highest at 123-method A. Within 123-method A, 123-method B and the card method equal ranks were observed; cases were allocated to the most observed ranking. Within the drawing method no cases were allocated. The card method produced interpretation problems with respect to the help variable and different ranges of possible scores, which were not observed in the other methods. The 123-method A showed a good result with respect to reliability, in contrast with the 123-

method B, which showed a low value of Cronbach's alpha. Within 123-method A the highest level of significance with the highest mode of significance was observed in combination with the highest score of reliability. The 123-method A was selected for the large sample to measure thinking of pharmacy managers.

The results of the methods for acting showed that the method for the pharmacy manager did not correspond completely with the results of the methods for pharmacy personnel and for the researcher. In addition, the clusters of the pharmacy personnel did not correspond with the natural clustering. The natural clustering comprised all pharmacy personnel of one pharmacy belonging to one 'natural' cluster. The calculated clusters did not correspond with the natural clusters for any pharmacy. This could cause problems with the interpretation of the results, if this method was to be applied to larger samples. The method for the pharmacy manager was the main instrument to measure acting. It was expected that the pharmacy manager, as a social desirable answer, could have been able to select questions in accordance with correspondence. Additional methods were selected for the pharmacy personnel and for the researcher, to avoid this problem. But if *non*-correspondence was observed, it was assumed that no further comparisons were required for the larger sample. Within this pilot study it was showed that with a sole measurement at the function of pharmacy manager *non*-correspondence was observed. In addition, no interpretation problems with respect to the natural clustering existed. The method for the pharmacy manager was selected to measure acting of pharmacy managers.

The pharmaceutical triangle

The study showed that pharmacy managers did not concentrate on one of the pharmacy mixes completely. In the pilot study no pure types of the three pharmacy mixes were identified. This result could be expected. It is impossible for a pharmacy manager to concentrate on the customer mix solely, and neglecting activities related to the product mix or the process mix. The triangle seems to exist not as a pure mix, but as a scale which reflects the form of the mix-related activities of the pharmacy manager. The clustering showed that the scores of many of the pharmacy-mix-related activities (table 2-5, figure 2-4) were close together. In addition, the high scores on the reliability test for all questions showed that the three mixes were strongly related. Finally, some of the comment to the questionnaires of the pharmacy managers showed difficulties in choosing the most important in the 123-methods; in some cases they experienced the three mixes as equally important. The three pharmacy

mixes seem to relate strongly; no pure types were found. The three pharmacy mixes can be used as dimensions to monitor the activities of the pharmacy manager with respect to pharmacy practice.

The organizational consistency

The pilot study showed that the use of a combination in the use of the two selected methods resulted in *non*-correspondence between thinking and acting of the pharmacy manager, mainly. The observed correspondence was two pharmacies with respect to the use of the 123-methods and the method for the pharmacy manager for correspondence with respect to the complete ranking. If all results were compared it was concluded that the 'complete' ranking (for example, product-process-customer) for thinking and acting corresponded for only two (product) cases, the 'double' ranking (for example, product-process)

corresponded for the same two cases also, and the 'single' ranking (for example, product) corresponded for 11 cases, four of which originated from a comparison of 123-method A and the method for the pharmacy manager. In addition, results of VNA/SAL pharmacies were compared with the results of additional pharmacies. *Non*-correspondence was observed for 11 VNA/SAL pharmacies and 11 additional pharmacies. Correspondence of *thinking* and *acting* was observed for one VNA/SAL pharmacy and for one additional pharmacy. The results of the 'single'-rank analysis showed that the main focus of thinking was mainly related to customer and product. The emphasis on the steering measures for acting was mainly related to product and process (figure 6). In addition, the number of clusters defined theoretically was three: a product cluster, a process cluster and a customer cluster. The empirical results of the actual situation, represented by acting of pharmacy managers, showed another clustering with four clusters.

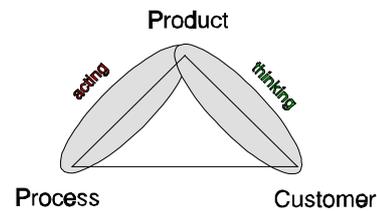


Figure 6 The triangle representing the main result of correspondence between *thinking* and *acting*.

Discussion

The results of the pilot study showed that *non*-correspondence between thinking and acting was observed, mostly. Organization Theory shows that this result could be expected. Related to this issue, Mintzberg [19 20] describes a difference between

intended strategy and realized strategy, in the APOM-project studied as thinking and acting respectively. Argyris [21] showed that people do not act in correspondence with their espoused theory. The actual behaviour is in correspondence with another theory: the theory in use. The theory in use must be traced back from behaviour. The theory in use does not correspond with the espoused theory. People are not aware of this behaviour. Within the pilot study *non*-correspondence between thinking and acting was observed. It seems likely that the espoused theory and the theory in use were visualized in the pilot study. The actual difference between these two phenomena will be studied in Phase 2 of the APOM-project in a large sample. In addition, if the results of the pilot study are used as a starting point, roughly the outcome in Phase 2 can be twofold. Firstly, *non*-correspondence in *thinking* and *acting*, and, secondly, correspondence in *thinking* and *acting* of pharmacy managers could be expected. Finally, phase 3 of the study can be made with respect to improvement of the correspondence. Mostly, the customer-related activities of the pharmacy managers would have to be improved. Correspondence relates to what pharmacy managers perceive as important and what they actually do. However, the APOM-project relates to consistency also. Does *non*-correspondence result in a logically consistent position? For example, does a pharmacy manager which perceives money to be the most important issue, but actually stresses customer-related activities, steer consistent? The answer could, under certain circumstances, be 'yes'. Within the APOM-project a margin will be defined; What is consistency exactly? How well is the fit between thinking and acting if both phenomena are analyzed more thoroughly? With respect to intended and realized strategies, Mintzberg [19] argues that some strategies get realized, some strategies do not get realized at all, perhaps because of unrealistic expectations or misjudgments about the environment, and some strategies were never intended but get realized. A more thorough analysis of these features and the relation of these features with (in)consistency will be made in Phase 3 of the APOM-project.

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