ANTECEDENTS AND CONSEQUENCES OF NEW PHARMACISTS' WORKPLACE CONTROL

by

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A dissertation submitted in partial fulfillment of

the requirements for the degree of

Doctor of Philosophy

(Social and Administrative Sciences in Pharmacy)

at the

UNIVERSITY OF WISCONSIN-MADISON

2001

ACKNOWLEDGMENTS

First of all I would like to thank my advisor, Jeanine K. Mount for her tireless devotion in guiding me to make this research better. Despite her meticulous attention to subtlety of meaning and detail where warranted, she more importantly lent a theoretical depth to our discussions. Her insight and questions were invaluable. She also helped me to expand my sense of perspective in analyzing a complex problem. In addition to her scholarly acumen, Jeanine had a sense of humor, fabulous dark chocolate, and Rosie the attack parakeet in her office every day. The generosity and friendship she displayed on a daily basis will be missed. I would also like to thank the members of my committee: Betty Chewning, Dave Mott, Mark Suchman and Bonnie Svarstad. Their comments, suggestions and encouragement were very much appreciated and helpful.

Next, and most importantly, I would like to thank my wife, Christine. Her constant love, support and understanding during the arduous process of my earning this degree has only deepened my appreciation for what a fine person I married. I really believe that she worked harder than I did during this long process. I would also like to thank my deceased parents, Bert and Della Clark who always encouraged my educational pursuits and taught me the meaning of hard work.

Lastly, I would like to dedicate this dissertation to the memory of Professor Joseph B. Wiederholt. Joe was a source of inspiration to us all at the University of Wisconsin-Madison, School of Pharmacy – both by the way he lived and the grace and courage with which he died. We will always remember this fine and brilliant man.

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ANTECEDENTS AND CONSEQUENCES OF NEW PHARMACISTS' WORKPLACE CONTROL

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Objectives: Research on employee participation in workplaces shows the importance professional and nonprofessional employees place on involvement in decisions related to their work. The objectives of this study are to examine the contributions of personal and worksite attributes in the development of newly licensed pharmacists' desires for and perceptions of participating in workplace decision making. The dependent variable for this study is organizational commitment. **Design and Setting:** Mail questionnaire surveys were sent to the 1999 graduates from 24 randomly selected U.S. schools and colleges of pharmacy during 1999 and 2000. **Participants:** Of the 1,850 pharmacy graduates who received surveys, 259 (14.0%) responded at Time 1 and 138 (7.46%) responded at Time 2. **Results:** Generally, respondents' descriptions of worksite attributes (Pharmacy Service Orientation and Organization of Work) were the strongest predictors of their perceived participation in workplace decision making (Perceived Control). Perceived Control was the strongest single statistical predictor of Organizational Commitment, and did not decrease in its contribution to explaining Organizational Commitment in the regression equation for the fitted model. **Conclusion:** New pharmacists who perceive that they are more involved in workplace decision making are more committed to their employing organizations.

Chapter 1. INTRODUCTION

1.1 Aim and Context of the Study

The major focus of this study is control of the pharmacy workplace: what it is derived from, whether employed pharmacists want it, whether they have it, and what results from it. The issue of employed professionals is an area that has, for some time, received much active interest from among those who study professions, occupations and organizations. In recent years, this has become an even more important topic within pharmacy's professional milieu. Pharmacy is increasingly a profession of employees. There is currently something of a perceived crisis among its practitioners and among aspects of their practice. This crisis is accompanied by a shortage of pharmacists and exacerbated by remarkably increasing work demands. For example, according to the National Association of Chain Drugstores (NACDS), there were 5,942 open pharmacy positions among their membership as of January 2001 while the number of prescriptions dispensed in U.S. community pharmacies will increase from the 2.84 billion dispensed in 2000 to approximately 4 billion in 2005. During this time, the supply of community pharmacists is projected to increase by only 4.5% (NACDS, 2001; HRSA, 2000).

The situation of professionals employed in this context presents a classic problem in modern form. The problem no longer is the venerable juxtaposition of coarchically organized professionals working in hierarchical, bureaucratic organizations. This was the interpretation of professional employees' work contexts that dominated the literature on

work, organizations, and professions during the middle and late 20th century. The issue is not the same issue anymore. Organizations have changed in form. The professionals (pharmacists) have changed in their training, preferences and expectations. Although the significance of the problem continues to be the logic of the profession versus the logic of the organization, it is no longer the neo-Marxist deprofessionalization interpretation that pertains. The problem is now more than a generation removed from when these arguments were made originally.

During that earlier time, although pharmacists increasingly were becoming employees rather than practicing as individual entrepreneurs, the independent pharmacy owner was the archetype. Mid-20th century pharmacy work literature focused on the dual roles of the pharmacist as both business operator and professional (e.g., Kronus, 1975). In fact there was much debate about whether, because of this dual role (or role conflict), pharmacy was indeed even fully professionalized. Some literature of the time referred to pharmacy as a marginal or quasi-professional occupation (e.g., Denzin and Mettlin, 1968). There was little if any attention paid to the pharmacist as an employee.

Now, at the beginning of the 21st century, much has changed. Organizations no longer, for the most part, resemble the Weberian ideal of bureaucracy and entrepreneurial pharmacists no longer dominate the pharmacy landscape. Instead, the trend of increasing numbers of pharmacists working as employees has continued while many work organizations have taken other, less bureaucratic, forms. Further, the work of pharmacists has continued to evolve in stride with changing patterns of professional socialization and role expectations.

It is in this context of changing professional expectations and changing organizational forms that this study examines the issue of workplace control. It is this dynamic that is making the pharmacy workplace one with potentially more role conflict, but between different roles from before. The problem addressed by this study is not a simple one. It is complicated, not only by professional and organizational changes, but also by the plasticity of new pharmacists who may not be sure what they want. As entrants into the profession, they are in a state of flux and are open to influence. And, it is against this backdrop that I hope to capture the simultaneous impact of new pharmacists' personal and worksite attributes as these combine to explain workplace control. The term "attribute" as used in this study means "an inherent characteristic" or something "closely associated with or belonging to a specific person, [or] thing" ("attribute." Merriam-Webster OnLine: Collegiate Dictionary, 2001).

1.2 Background

During the past several years, pharmacy's practitioners and professional associations alike have shown increasing interest in how the pharmacy workplace impacts the quality of both the work and work life of our nation's employee pharmacists (APhA Healthy Workplace 2000; Ukens, 1996a). At the same time, both regulators of the profession and the lay media have questioned whether clients of pharmacies regularly receive the minimum quality of service that state practice law and regulation require to protect the public safety (Anon, NABP Newsletter, 1993; Bounds, 1997; Headden, 1996).

Evidence citing the important role pharmacists can play in protecting patients from the dangers of inappropriate medication use is compelling. Manasse (1989a, 1989b) and others (Bounds, 1997; Johnson and Bootman, 1995) have made clear the costs (both human and financial) of "drug misadventuring" when patients receive or use their pharmacotherapeutic agents incorrectly. Further, legal responsibilities of pharmacists now extend well beyond the basics of accurate dispensing (OBRA '90: Public Law 101-508, '4401, 1990; Health Care Financing Administration, 1992; Catizone, et al., 1993). Such responsibilities were recognized legally when the pharmacist's patient counseling and drug utilization review functions were codified by the federal government as part of the Omnibus Budget Reconciliation Act of 1990 (OBRA '90: Public Law 101-508, '4401, 1990).

Subsequent federal regulations provided a framework for implementation of this legislation at the individual state level (Health Care Financing Administration, 1992). OBRA '90 and its regulations required that states develop standards for prospective drug utilization review, including an offer of patient medication counseling, for all Medicaid beneficiaries. The resulting initiatives enacted at the state level incorporated these requirements into the statutes and/or board of pharmacy rules of all 49 states participating in the Medicaid program. The vast majority of states then extended this new standard of practice to all patients (Catizone, et al., 1993). This change in pharmacy's regulatory environment is a codification of patient-serving professional activities by pharmacists heretofore unseen at a national level. It follows the paradigmatic shift in pharmacy practice and education that occurred when "pharmaceutical care" was introduced (Hepler and

Strand, 1990). Pharmaceutical care calls for pharmacists to work toward achieving definite therapeutic outcomes for a patient's drug therapy. This goal is accomplished through their thorough evaluation and application of patient and drug information and by working closely with physicians and other health care professionals (Hepler, 1990).

1.3 Significance of the Problem

As more aspects of healthcare delivery in the United States come under the control of those other than healthcare providers themselves (Fincham and Wertheimer, 1991; Ukens, 1996b), the working conditions of pharmacists and other healthcare workers are becoming an area of serious concern. For example, in 1999, 60% of community pharmacies were operated by chain pharmacy corporations. This percentage is expected to rise to 74% by the year 2004 (Cardinale, 1999).

External pressures on pharmacies are also involved. In a comment made in a pharmacy trade publication, the president of the Guild for Professional Pharmacists (an independent union based in Woodland Hills, CA) described plausible reasons for this trend in concentration of pharmacy ownership.

> It's gotten to the point where large employers aren't after the profit; they're after survival. They believe there will be only two or three chains in a few years. They want to become one of those winners. They truly believe, right or wrong, that the only way to be that winner is to have the lowest prescription price. The only way to do that is with reduced pharmacy staff. They are at the mercy of the third-party payers. The insurance companies are driving it (Ukens, 1996b).

Yet, this pressure for efficiency and other anecdotal pharmacy trade press descriptions (e.g.,

Ukens, 1996a) of pharmacists' working conditions fall short of providing a scientifically defensible basis for establishing a causal relationship between working environment and pharmacists' professional performance and attitudes.

To date, most studies of pharmacists' work have focused on dispensing accuracy or efficiency of pharmacy operations (Allan, et al., 1995; Ascione, et al., 1985; Buchanan, et al., 1991; Guernsey, et al., 1983; Kreling, 1981) and medication counseling attitudes and behaviors (Carroll and Gagnon, 1983; Dickson and Roodowskas, 1975; Mason, 1979; Mason and Svarstad, 1984; Ross, et al., 1981; Wiederholt, et al., 1992). Such studies have focused primarily on the dispensing and counseling behaviors of experienced pharmacists.

Likewise, studies that have focused on how workplace characteristics influence pharmacists' job satisfaction or organizational commitment have drawn their study samples from the general population of pharmacists (Desselle, 1998; Gaither, 1996; Gaither and Mason, 1992; Hughes and Larson, 1990; Kong, 1995; Roberts, et al., 1993; Wolfgang, 1994). And, while there is an extensive literature on first job experiences (e.g., Ashforth, et al., 1996, 1998; Corwin, 1961; Hatcher and Crook, 1988; Speeding, et al., 1981) generally, no studies have been done that examine how the workplace may influence newly licensed pharmacists' professional attitudes, concepts of workplace control, and organizational commitment in the early stages of their careers.

1.4 Rationale for Studying New Pharmacists

The choice to focus on new practitioners is based partially on the anticipation that as

newly hired employees with limited professional experience, they are more likely to demonstrate sensitivity to organizational characteristics of their immediate practice environment. Studies examining the phenomenon of "first job shock", the experience of a new entrant into the workforce finding their first job not to be what he or she expected, are found in the management and sociological literature (Ashforth and Saks, 1996; Ashforth, et al., 1998; Hatcher and Crook, 1988; Taris, et al, 1992). In the healthcare sector, the first job phenomenon has been demonstrated in studies about the initial employment experiences of nurses (Corwin, 1961; Speeding, et al., 1981) and of pharmacists (Picciano and White, 1990).

In view of the shift from private to corporate ownership of pharmacies noted by Cardinale (1999), a greater percentage of pharmacy graduates work as employees. This continuing trend to non-pharmacist control of pharmacy practice sites poses potential problems for recent pharmacy graduates who have been professionally socialized through their education to embrace pharmaceutical care as an essential part of their practices upon licensure. Thus, it becomes even more important to understand more about how they experience their profession through employment.

1.5 Chapter Preview

Chapter 2 presents the theoretical basis for this research in the context of a review of relevant literature on work, organizations, and professions (especially pharmacy). Chapter 3 outlines the methods employed in sample selection and in the development and refinement of

measures used in the survey instruments. Chapter 4 presents the results of the Time 1 survey that establish the extent of the relationships between new pharmacists' desire for control in their workplace and both their personal attributes and the attributes of their worksites at approximately the time of their licensure. Chapter 5 continues with the same theme as Chapter 4 by exploring these same relationships six months later, with the addition of the control respondents perceive that they have. Chapter 5 concludes with multivariate analyses among the variables predicting Desired Control, Perceived Control and new pharmacists' Organizational Commitment. Chapter 6 discusses the conclusion and implications of the findings with suggestions for further research and a description of the limitations of the study.

Chapter 2. LITERATURE REVIEW

2.1 Introduction

The theoretical framework of the study is presented in this chapter. This broad theoretical basis is then applied to development of a model that addresses the fundamental goal of this study. The major goal of this study is twofold. First, it is to understand how new pharmacists' concepts of control in their workplaces derive from their professional socialization and from the attributes of their practice sites. Further, it is to examine the outcome of that control. Specifically, this will be accomplished by developing an understanding of how: 1) personal attributes (professional orientation, work-related preferences and attitudes toward pharmaceutical care) affect the desire for and perception of workplace control; 2) worksite attributes such as site pharmacy service orientation, organization of work, size and workload affect the desire for and perception of workplace control; and 3) desire for and perception of workplace control affect organizational commitment.

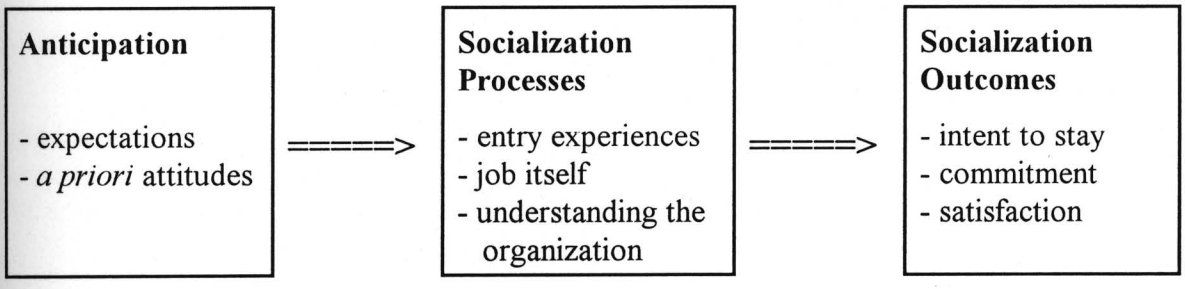
Many approaches have been taken in the psychological and industrial engineering literature to assess work, work outcomes and workplace contextual factors. Baker, Olson and Morriseau (1993) found that work practices and worker fatigue can impact the safe operation of nuclear power plants. Another Baker (1995), found that using circadian patterns of lighting brightness in nuclear power plant operations improved night shift workers' alertness. Tepas (1994), examined the varying success that technological remedies

have in managing both alertness and fatigue in the workplace. The adaptation of such strategies to create a "sterile cockpit" in pharmacy practice environments has been advocated by Davis and Cohen (1995). Analyzing such strategies as these for designing workplaces in order to increase safety or efficiency is **not** the focus of this study. Instead, this study is about how professional socialization that occurs during the didactic and experiential portions of the educational curriculum and on-the-job socialization combine simultaneously to produce desires for and perceptions of workplace control among new pharmacists. The framework for this study is derived primarily from the broad sociological literature on professions, organizations, work, professionals as employees, participation in workplace decision making, and organizational commitment. Research questions and related hypotheses are developed from this context.

2.2 Contrasting Views of the Socialization Process

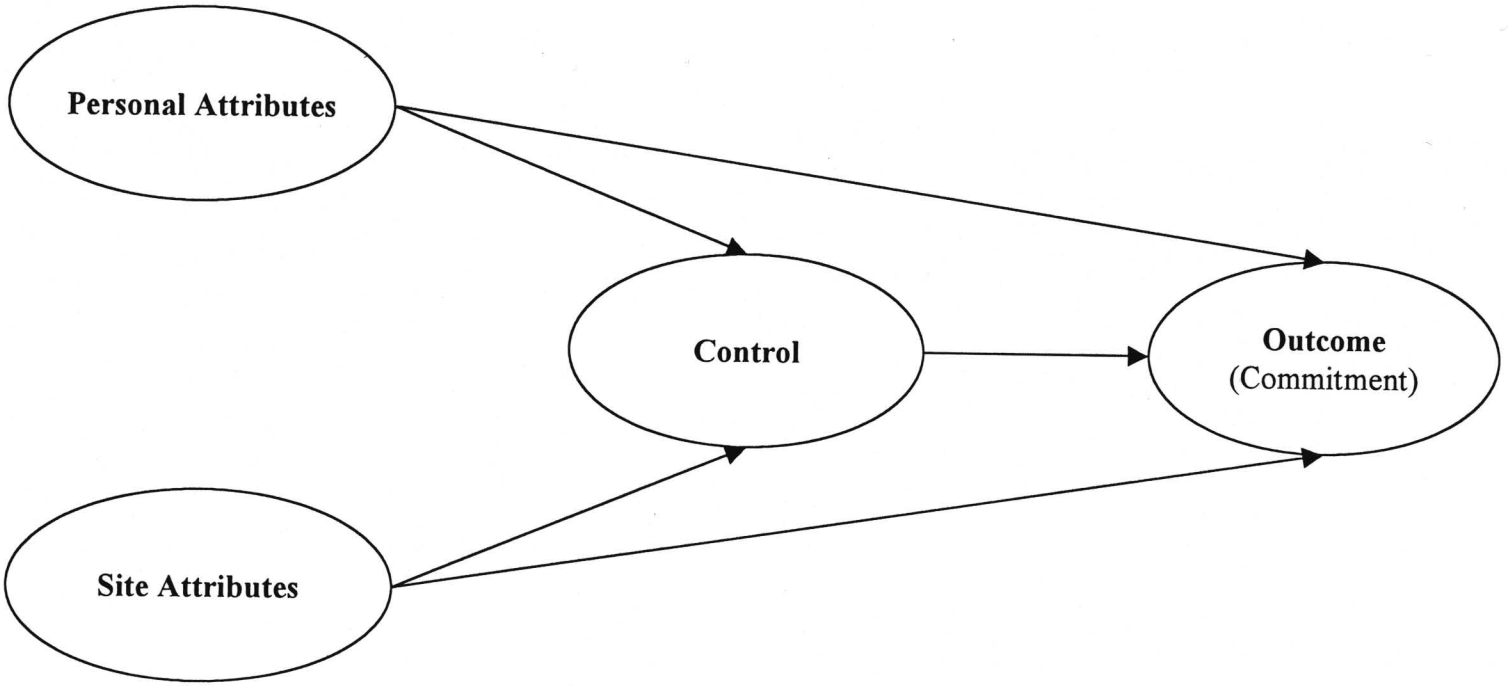
The theoretical approach of this study contrasts with previous interpretations of socialization as exemplified in Figure 1 where Holton and Russell (1997) describe the socialization process as linear. Their model moves along a time line from anticipatory expectations and attitudes to work experiences and eventually to attitudinal outcome. The theoretical approach of this study is illustrated in Figure 2 where the influences of personal and worksite experience combine and are brought to bear simultaneously on the desires for, and reality of, new pharmacists' workplace control. It is workplace control that then results in an attitudinal outcome, organizational commitment.

Figure 1. Linear Process Model of Work Socialization[1]



[1]Adapted from Holton and Russell (1997), p. 164.

Figure 2. Conceptual Model



The reasoning behind taking this tack in approaching the research problem is as follows. The theoretical approach seen in Figure 2, when contrasted with the Holton and Russell (1997) approach in Figure 1, is more consistent with contemporary socialization patterns experienced by pharmacy students. Pharmacy graduates do not enter the workplace *de novo*, without pharmacy workplace experience. Instead, the accreditation standards for U.S. schools and colleges of pharmacy require that they be involved in pharmacy workplace experiential modules throughout their curricula (American Council on Pharmaceutical Education, 1997). So, in addition to the socialization influences of the classroom, new pharmacists also accumulate experience in the pharmacy workplace before graduation. It is the combination of these influences, as illustrated in Figure 2, that provides the basis for their professional socialization. Their personal attributes and the attributes of their worksites then combine to produce both their desire for workplace control and the interpretations of control that they perceive to actually experience. The one outcome is the extent to which these new pharmacists are committed to their employing organizations.

This parallel socialization into workplace and profession provides the basis for role conflict in a more modern context when contrasted to the earlier descriptions of role conflict between business and professional roles that faced pharmacists in the mid-20th century (Kronus, 1975). Denzin and Mettlin (1968) highlighted the marginalization of pharmacy's professional status in this same context of business-professional role conflict. The model that I am offering instead looks at the potential marginalization of pharmacists' professional authority in the context of working environments where professional autonomy may not

automatically translate into workplace control. Role conflict for employed pharmacists in my model is between the professional role as pharmacist and the organizational role as employee.

2.3 The Conceptualization, Development and Significance of Workplace Control

Essentially, the question obtains as to how it is one can conceptualize the development of workplace control and what difference it makes to worker and organization alike. Organizational commitment is an important potential outcome of control and is being used in this study as the outcome variable because it has been found to be highly related to such attitudinal variables as job satisfaction and organizational citizenship behavior – propensities that are important both to the worker and to the employing organization (Bolon, 1997; Brooke, et al., 1988; Schappe, 1998). Organizational commitment will be discussed in the section following this one.

2.3.1 Personal Attributes and Participation in Decision Making

Factors involved in the development of professional attitudes include not only the professionally socializing influences accrued during the formal education process, but also the personal, self-derived norms that an individual develops through life experiences prior to becoming a professional or through the internalization of group norms (Ortiz, et al., 1992). The role of self-derived norms in shaping professional attitudes can be especially strong under conditions of role ambiguity in a profession such as pharmacy that is expanding or

changing its role. Discussions of pharmacy's changing role abound in the pharmacy literature (e.g., Bluml, et al, 2000, De Gier, 2000; Kania, 1997; Kettle, et al., 1996; Liu, et al., 1999; Shibley and Pugh, 1997). In his investigation of pharmacists' patient counseling behavior, Mason (1979) noted that the internalization of a group norm (counselor role orientation) can result through an observer effect, that is, the extent to which a pharmacist is observed performing a role by those who value it. Thus, as pharmacy students move through their curricula, the self-derived norms they brought to pharmacy school become entwined with the socializing effects of their education, work experiences, and peers. It is in this manner that, as new pharmacists entering the profession, their initial attitudes toward their profession and their professional orientation are formed. With these concepts in mind, I now turn to a discussion of how the personal attributes of employed pharmacist professionals are related to the development of attitudes toward participation in workplace decision making.

2.3.2 Professions and Organizations

Traditional descriptions of professions include numerous attributes, including: extensive learning, service to clients, a sense of calling, existence of a formal professional organization, an altruistic attitude, formal credentialing processes, a holistic orientation to complex tasks, and a high degree of autonomy (Angel, 1982; Bayles, 1981; Bledstein, 1976; Gross, 1984). Among these, autonomy is a most characteristic feature (Bayles, 1981) and is the only one focused on in this study. In contrast, the organizational structure of traditional

corporations has been described as being bureaucratic and vertical while in the traditional view, relationships among professionals are seen as horizontal and coarchical (Hall, 1982). More recently, less hierarchical participatory management styles have been incorporated into the operations of modern corporations to make them more flexible and adaptable to changing demands and market conditions (Freeman and Rogers, 1999; Piore and Sabel, 1984).

In virtually every environment, including both their academic training and on-the-job experiences, professionals face pressures to conform to or adopt either professional or organizational norms governing their behavior. When norms established by an employing organization differ from the professional norms of the professionals in its employ, role-conflict and the type of workplace degradation of professional work described by Abbott (1988, pp. 125-126) may result. Raelin (1986) describes this conflict from the management perspective.

> The issue of autonomy ... is perhaps the most critical problem in the management of professionals. ... [P]rofessionals wish to make their own decisions without external pressure from those outside the profession, including their managers. This right of autonomy, however, clashes with management's expectations regarding the proper role of the employee. Professional employees are expected to conform to the basic goals and procedures of the enterprise. ... But some professionals believe that their expert status gives them the right to decide what their precise agenda at work will be (Raelin, 1986, pp. 105, 107).

This dynamic points to development of an area of inquiry to develop a better understanding of professionals' relationships with their employers and their workplace culture (Hodson, et al., 1994). The potential for a professional to experience internal

conflict between organizational and professional norms is well-established.

> Because these individuals frequently identify themselves as members of a profession long before they join a particular organization and refer to themselves first or elementally as members of that profession, they may encounter expectations, values, and ideals in their employing organizations that conflict with those to which they were socialized. The effect on such individuals and the organizations that employ them may be substantial (Russo, 1998, p.73).

Again, as seen in the earlier discussion of Figure 2, this is not exactly the case for pharmacy graduates because they experience simultaneous orientation to both profession and to practice environment before licensure (American Council on Pharmaceutical Education, 1997). More traditional discussions of the bureaucratic-professional dynamic include Hall's (1968) contrasting of coarchical professions and hierarchical, bureaucratic organizations, Scott's (1966) analysis of conflict between professional and bureaucratic organizational ideals and the structural explanation proffered by Freidson (1984).

The structural interpretation emphasizes proletarianization and professional stratification at the profession-wide unit of analysis. These more macro level views of professionals in organizations examine this problem from the broad perspective of professions and organizational form. At a more personal level (for the professionals themselves) and in the context of this study, it is more salient to consider how employed professionals (simultaneously) view, interpret and respond to their professional role within the context of their workplace circumstances. A related question is how their individual preferences and professional socialization influence these interpretations and responses. Each of these relationships is explored in this study.

2.4 Workplace Attributes and Participation in Decision Making

A key aspect in any discussion of work organization and its impact on professional practice must address not only how work is organized, but by whom. How this organization takes place often is determined by the organizational culture of the employing organization and/or workplace. Smircich (1983) notes that both organizations and the work environments found within organizations can be conceptualized as organizational cultures. Organizational culture can be studied at the corporate, work unit, or within-work-unit levels (Coeling, 1994).

One way to conceptualize organizational culture in this context is through the three basic forms described by Martin (1992). These forms are the: 1) Integration, 2) Differentiation, and 3) Fragmentation. Respectively, these forms rely on: 1) consensus throughout the organization 2) subcultures as pieces of the mosaic that describes the culture, and 3) a context-dependent model wherein the organization's cultural manifestations coalesce and dissolve depending on the circumstances facing either the organization or one of its components -- such as the workplace. Martin (1992) describes a differentiated organizational culture as one where the culture forms the connecting point between overlapping, internal subcultures and the organization's permeable boundary to its external environment.

In situations where professionals have influence on organizational policies and decisions that determine how work organization decisions are made, they are able to establish the workplace context for their professional practice. Alternatively, it also is possible that concordance between the desires of the professional and the goals of the

organization is maintained via co-optation: an organization's employed professionals can perceive agreement between their organization's norms and their professional norms if their views of professional norms begin to reflect organizational values. This dichotomy has been described in comparisons of lawyers employed by law firms and lawyers employed in the legal departments of large corporations (Wallace, 1995). Despite their differences in professional focus, each of these examples represents the *integrative* organizational culture form.

Many pharmacy practice sites employ, in addition to pharmacists, non-pharmacy management personnel, pharmacy technicians, and workers unaffiliated with the pharmacy proper. Such a composite may give rise to a *differentiated* organizational culture. The workers are not necessarily in conflict, they just happen to be a heterogeneous group. Nonetheless, however it is that new pharmacists experience the culture of their workplaces, the extent to which they have professional autonomy and discretion in the organization of their work is manifest in their reports and perceptions of these aspects of their practice.

When professionals do not perceive concordance between their professional norms and the norms of their employing organization, plausible explanations include: 1) decisions regarding the organization of work are made centrally by the organization for which they work (Aiken and Hage, 1968) and/or; 2) the workplace context for their professional practice becomes institutionalized such that it is imbued with values and behaviors not of the profession. Such a phenomenon is consistent with Harrison's (1994) description of the influence of workplace context and with theoretical and empirical discussions of how some employees of an organization may form subcultures in response to the co-optation of other

employees (Sackmann, 1992).

Research examining how and to what extent professionals influence or are influenced by the cultural context of the workplace is necessary to expand our understanding of how employed professionals function and the extent to which they maintain their professional identity within the employing heteronomous organizations described by Hrebiniak and Alutto (1972) and Scott (1965). Examples of pertinent aspects of organizational culture with implications for employed professionals include the extent to which professional workers are involved in organizational decision-making relevant to their practice and the extent to which they maintain autonomy and discretion in their work.

Research on employee participation in U.S. workplaces has demonstrated the importance that both professional and non-professional employees place on being involved in decisions affecting their work.

> Most employees want more influence or decision-making power in their job, and believe this would improve company productivity as well as their working lives. Sixty-three percent of employees said they wanted more influence, compared to 35 percent who were content with things as they were. (Dunlop, 1994, p.100).

This sentiment is echoed by Freeman and Rogers (1999).

> American workers want more say/influence/representation/participation/ voice (call it what you will) at the workplace than they now have. We call the difference between the say that workers want and what they currently have the *representation/participation gap* [Emphasis in the original]. The gap varies among groups and across workplace issues, but it is ubiquitous. Employees want greater say both because they think it will directly improve the quality of their working lives and because they think it will make their firm more productive and successful (which also enhances their work lives in the long run) [Parentheses in original] (Freeman and Rogers, 1999, p. 4).

While Freeman and Rogers indicate that such employee views do not always lead to unionization, the distance between professional practice activities and decisions affecting the discretion of professionals who engage in them can result in collective action by professional employees. Budrys (1997) describes how physicians closed out of decisions affecting their practices have formed unions to further their professional concerns. Such actions have been taken both within and outside the context of employment. Budrys (1997) further describes how physicians represented by the Union of American Physicians and Dentists have taken the stance that they function as *de facto* employees in their relationships with third party payers. In Exit, Voice and Loyalty, Hirschman (1970) describes how loyal members of an organization, when faced with organizational policies with which they disagree, at first will attempt to change the organization from within. When such efforts are thwarted (and loyalty evaporates), exit from the organization is often the only remaining option. Thus, how employee pharmacists react to workplace policies that create their professional practice circumstances may indicate the degree to which they feel they have discretion in their work, are involved in decisions affecting it, and the consequences of such work circumstances. How these factors play out will likely depend on the extent to which employee pharmacists actually desire to have control of their work. This is one of the key elements of this study.

2.5 Determinants of Organizational Commitment

A number of workplace attributes and worker attitudes can contribute to the development of an employee's organizational commitment. Welsch and LaVan (1981) identified five categories of variables that can increase organizational commitment:

1) demographic characteristics, 2) job satisfaction, 3) job characteristics, 4) professional behavior, and 5) organizational climate. In their study of workers in a healthcare institution, they found that while role ambiguity and role conflict were damaging to commitment, a participative environment, power, job satisfaction and teamwork were all positively associated with organizational commitment (Welsch and LaVan, 1981).

Other studies examining organizational commitment among various classifications of employed professionals also point to job autonomy and/or participation in decision-making as key predictors of commitment. Baker and Baker (1999) found that involvement in decision-making increased organizational commitment in their study of psychiatrists employed in community mental health centers. McDermott, et al. (1996) found a significant positive relationship between nurses' perceptions of job-related empowerment and their reported commitment to their organization. Painter and Akroyd (1998) identified general working conditions and task autonomy as significant predictors of organizational commitment among occupational therapists working in ambulatory settings. Pearson and Chong (1997) found work autonomy to be a predictor of organizational commitment for nurses. Desselle (1998) found that pharmacists' job satisfaction correlated positively with both organizational commitment as well as both supervisor and co-worker support. Gaither and Mason (1992) found pharmacists' career commitment to precede organizational commitment. Kong (1995) also found supervisor support to be positively correlated with pharmacists' organizational commitment. Roberts, et al. (1993) found that autonomy and input into workplace decisions increased pharmacist morale and organizational commitment More generally, even in non-professional industrial settings participation in decision-making

and autonomy are often identified as key predictors of a positive labor-management relationship (Dunlop, 1994; Freeman and Rogers, 1999; Susman, 1983).

Information from such studies has been utilized in a variety of ways. Healthcare management literature (McDermott, et al., 1996; Thomason, 1990) promotes enhancement of healthcare worker empowerment as a tool to increase professional employee retention rates. This approach is also seen in the sociological literature where Wallace (1995) argues that employee lawyers' organizational commitment is maximized when they participate in organizational decision-making and when management allows for individual discretion and control in their jobs. Similar relationships are demonstrated in the nursing literature (Kreitzer, 1990; Pearson and Chong, 1997).

In her study of lawyers' organizational and professional commitment, Wallace (1995) examined how the relationships between the structural composition of professional (i.e., law firms) and heteronomous organizations (i.e., large companies with legal departments) were related to the organizational and professional commitment of lawyers. She found organizational commitment to be quite dependent up on how the lawyers in the study viewed their opportunities for career advancement and the criteria used in reward distribution. She also provided significant challenges to the thesis that the work of professionals is proletarianized by their employing organizations. Her view concerning how professionals working in a department of professionals can be insulated from the bureaucracy of their employing organization is similar to that of Hepler (1985) who maintains that "... professionalization can occur in a bureaucratic organization if the professionals are organized in a separate professional department headed by a person who is able and willing

to insulate the professionals from the bureaucracy" (Hepler, 1985, p. 1305).

In the results of her study, Wallace (1995) found that in heteronomous firms, "[S]taff professionals have consolidated formidable authority within their departments and have input into defining the objectives of their work and the direction of the organization" (Wallace, 1995, p. 248). Thus, in a sense, the employed professionals in these circumstances have reached a "critical mass" through which they can have impact on organization-wide policies. Wallace's (1995) finding that perceived co-worker support increased respondents' perceptions of having input into organizational objectives is supportive of this view.

Another striking result in Wallace's study was that "lawyers working in heteronomous organizations are significantly less committed to the profession than those working in professional organizations, even after structural characteristics and other factors are controlled" (Wallace, 1995, p. 251). Such findings raise interesting prospects for the investigation of pharmacists employed by heteronomous organizations. Wallace further examined how perceptions of autonomy and of local labor market conditions affected employed lawyers' organizational commitment. Professional autonomy correlated significantly with organizational commitment, while perceptions of the local labor market did not.

Zahara's (1985) ambiguous results in examining how role conflict and ambiguity are related to organizational commitment provide insight into Reicher's (1985) review and reconceptualization of organizational commitment. In that Zahara (1985) found that role conflict and ambiguity were not significantly related to organizational commitment, the following point by Reicher becomes more salient.

> ... [I]t should be emphasized that "the organization" is for many employees an abstraction – an abstraction that is represented in reality by co-workers, superiors, subordinates, customers, and other groups and individuals that collectively comprise the organization. ... [T]he concept of commitment can be usefully dismantled to reflect these multiple commitments, and that understanding of organizational commitment in its current, global sense may be enhanced by an attention to its multiple commitment components (Reichers, 1985, p. 472).

In operationalizing the concept of organizational commitment, Porter, et al. (1974, 1979) took into account the multidimensional nature of this construct in their development of the Organizational Commitment Questionnaire (OCQ). The OCQ encompasses three dimensions of organizational commitment. These are willingness to exert effort on behalf of the organization, the degree of goal and value congruency with the organization, and desire to maintain membership. These researchers later defined organizational commitment as "the relative strength of an individual's identification with and involvement in a particular organization" (Mowday, Porter, & Steers, 1982, p. 27). Porter and his colleagues did not divide (and have not divided subsequently) the OCQ into subscales and instead measured and analyzed organizational commitment as a single construct. "Although Porter conceived of commitment as having three aspects, this was never broken out in his measure. In fact, our factor analyses of the OCQ generally resulted in a single factor [solution]."(Personal communication, Richard Mowday, Nov. 14, 2000).

In a meta-analysis of variables related to nurses' job satisfaction, Blegen (1993) found that across 48 studies involving a total of 15,048 subjects, job satisfaction was most strongly correlated with stress ($r = -0.61$) and with organizational commitment ($r = 0.53$). No assertion of the causal ordering of job satisfaction and organizational commitment was

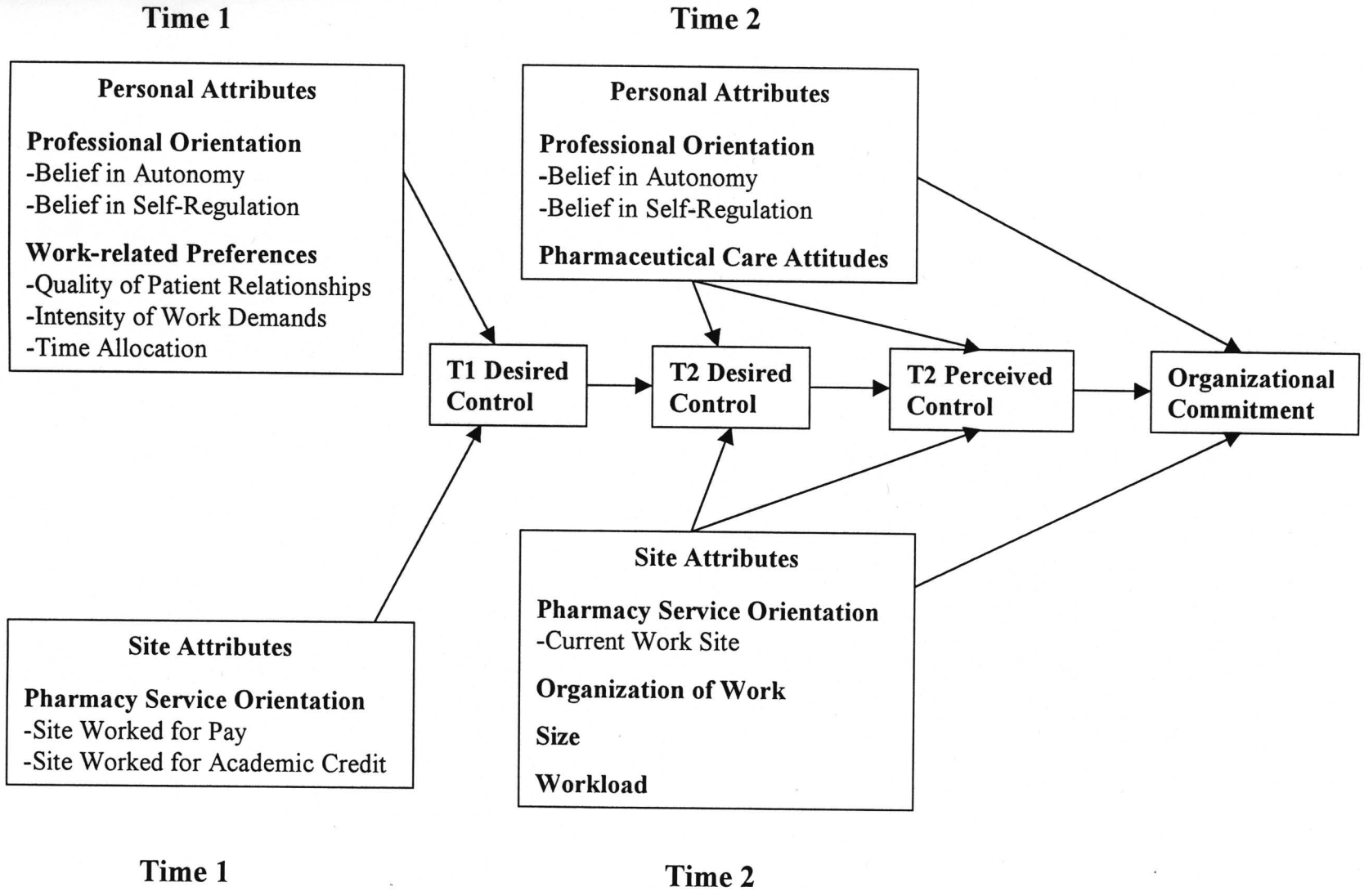
made. Yet, two significant predictors of job satisfaction (participation in decision-making and autonomy) identified for nurses in Blegen's (1993) meta-analysis are consistent with the relationship between these two variables and organizational commitment identified in Wallace's (1995) study of employee lawyers. Meyer et al. (1998) examined whether the organizational commitment of recent university graduates would be moderated by how the graduates valued their work experiences. Regression analysis revealed that the affective and normative components of recent graduates' organizational commitment were moderated by work experiences, with different combinations of work experiences and personal values producing differing results. Mayer and Schoorman (1998) also examined antecedents of organizational commitment and found that commitment to the organization based on shared values was enhanced by both felt participation and job involvement

The causal ordering of organizational commitment and job satisfaction is ambiguous in much of the literature discussed above. While some studies have posited that organizational commitment is a cause of job satisfaction, others have made organizational commitment the dependent variable. Still other studies look at both job satisfaction and/or organizational commitment as intervening variables with employees' intention to leave a job as the dependent variable. The goals of this study do not include disentangling this apparent conundrum.

In the context of the current well-publicized pharmacist shortage (HRSA, 2000) and its implications for maintaining adequate pharmacist staffing levels and patient care quality, developing the ability to predict pharmacists' intention to leave a job might seem to have been the most useful way to approach this study. However, exogenous factors not related to

the workplace (such as changing residence to accommodate a spouse's job transfer or other family obligations) can figure prominently in employees' intentions to leave their jobs. Organizational commitment has been chosen as the dependent variable for this study because it provides a clearer picture of the net effects of workplace environment and individual attitudes. Figure 3 presents the research model for this study. The research questions and related hypotheses follow. Hypotheses will be tested for both Time 1 and Time 2 measurements.

Figure 3. Research Model



2.6 Research Questions and Hypotheses

Research Question:

Q1: Are new pharmacists' personal attributes related to their desire for and perception of their participation in decisions affecting their work?

Hypotheses:

H1a: New pharmacists' professional orientations are related to their desire for participation in decisions affecting their work.

- H1a1: New pharmacists with a higher belief in professional autonomy desire more participation in decisions affecting their work.
- H1a2: New pharmacists with a higher belief in professional self-regulation desire more participation in decisions affecting their work.

H1b: New pharmacists' work-related preferences are related to their desire for participation in decisions affecting their work.

- H1b1: New pharmacists who prefer higher quality personal relationships with patients desire more participation in decisions affecting their work.
- H1b2: New pharmacists who prefer lower intensity of their work demands desire more participation in decisions affecting their work.
- H1b3: New pharmacists who prefer greater balance in the allocation of time between their work and private lives desire more participation in decisions affecting their work.

H1c: New pharmacists with a positive attitude toward pharmaceutical care desire more participation in decisions affecting their work.

H1d: New pharmacists' professional orientations are related to their perceived participation in decisions affecting their work.

- H1d1: New pharmacists with a higher belief in professional autonomy perceive participating more in decisions affecting their work.
- H1d2: New pharmacists with a higher belief in professional self-regulation perceive participating more in decisions affecting their work.

H1e: New pharmacists with a more positive attitude toward pharmaceutical care perceive participating more in decisions affecting their work.

Research Question:

Q2: Are new pharmacists' worksite attributes related to their desire for and perception of their participation in decisions affecting their work?

Hypotheses:

H2a: New pharmacists' worksite attributes are related to their desire for participation in decisions affecting their work.

H2a1: New pharmacists who describe the pharmacy service orientation of their worksites as less positive desire more participation in decisions affecting their work.

H2a2: New pharmacists who describe the organization of work at their worksites as less positive desire more participation in decisions affecting their work.

H2a3: New pharmacists who work in smaller worksites desire more participation in decisions affecting their work.

H2a4: New pharmacists who experience higher workloads desire more participation in decisions affecting their work.

H2b: New pharmacists' worksite attributes are related to their perceived participation in decisions affecting their work.

H2b1: New pharmacists who describe the pharmacy service orientation of their worksites as more positive perceive participating more in decisions affecting their work.

H2b2: New pharmacists who describe the organization of work at their worksites as more positive perceive participating more in decisions affecting their work.

H2b3: New pharmacists who work in smaller worksites perceive participating more in decisions affecting their work.

H2b4: New pharmacists who experience lower workloads perceive participating more in decisions affecting their work.

Research Question:

Q3: Controlling for personal attributes and site attributes, do desired and/or perceived participation in workplace decision making influence organizational commitment?

Hypotheses:

H3a: New pharmacists who have a higher desire for participation in workplace decision making have higher commitment to their employing organization.

H3b: New pharmacists who perceive having more participation in workplace decision making have higher commitment to their employing organization.

Chapter 3. METHODS AND MEASURES

In this chapter, I first describe the procedures used for developing the sampling frame and collecting data. Next, I present demographic data that describes the study sample. Then, I present measures beginning with the scales selected for analysis. Lastly, I present the variables derived from these scales. The descriptive statistics for these variables are presented in Chapters 4 and 5 where they are used in bivariate and multivariate analyses.

3.1 Study Population and Sample

The sample for the study group is a stratified random sample of school and colleges of pharmacy designed to ensure proportionate geographic representation of all the graduates from U.S. schools and colleges of pharmacy producing a graduating class in the spring of 1999.

With schools as the sampling unit, a stratified random sampling technique was employed. First, random numbers were assigned to each of the U.S. schools and colleges of pharmacy producing a graduating class in the spring of 1999. The list was based on information compiled by the American Association of Colleges of Pharmacy (AACP) for 1998 (AACP, Profile of Pharmacy Students, 1998). Second, these schools were placed into four strata based on their location within each of the four major U.S. Census Bureau regions (Northeast, Midwest, West and South). Schools were chosen within each region in numerical order starting with the lowest number according to their randomly assigned

number until the total number of graduates selected for the region approximated the percentage of U.S. graduates produced by that region. The number and national percentage of potential subjects selected from each region are: Northeast, n = 526 (26%), Midwest, n = 571 (28%), West, n = 291 (14%) and South, n = 653 (32%). When a school or college was selected, all of its graduates became part of the sample. Each region produced the following numbers (and national percentage) of graduates in 1997, the most recent year from which data were available (AACP, Profile of Pharmacy Students, 1998): Northeast, n = 2,224 (28.6%), Midwest, n = 2,081 (26.8%), West, n = 738 (9.5%), and South, n = 2,730 (35.1%).

3.2 Consent and Subject Recruitment

Consent

In February 1999, the University of Wisconsin Health Sciences Center Human Subjects Review Committee granted permission to conduct the study and pretests. Included in this permission was approval of consent procedures. For the both the pretest groups and for the Time 1 and Time 2 mailings[1], a Study Description (Appendix A) was provided to subjects. In this study description, all subjects were informed that by completing and returning the questionnaire they were consenting to participate in the study or pretest. For the study sample, the study description and questionnaires were accompanied by introductory letters (Appendix B) for both the Time 1 and Time 2 mailings.

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[1]Section 3.4 presents the description of questionnaire mailing procedures.

School/Subject Recruitment

Table 3.1 provides a summary of school participation and school offices responsible for release of alumni addresses. Beginning in May 1999, 30 schools and colleges of pharmacy were contacted by telephone. Requests were made for home address mailing lists of their class of 1999 graduates. Of the 30 institutions contacted, 24 (80%) participated in the study. Twelve institutions provided mailing lists in either hard copy or electronic format. Due to institutional privacy policies, another 12 schools declined to provide addresses but agreed to distribute surveys to their graduates. The remaining six institutions contacted were not included in the study: four institutions had administrative delays which precluded their participation, one agreed only to notify students of the survey before graduation and give them the option of contacting the researcher, and one school would neither release graduates' names nor assist in mailing surveys.

3.3 Pretests of Survey Instrumentation

The pretests of the Time 1 and Time 2 survey instruments were conducted in March and April of 1999, respectively. The pretest group for the Time 1 questionnaire was comprised of 77 out of a possible 106 student volunteers from the University of Wisconsin School of Pharmacy (72.6% participation rate). These students were completing their second semester of the next to last year in their pharmacy professional curriculum. This group was chosen to approximate the Time 1 study group in that they were not yet licensed as pharmacists. All pretest subjects were provided with copies of the study description

Table 3.1 Control of Subject Address and School Participation

Release of Subject Address Controlled by:	**Released List of Graduates**	**Distributed Surveys for Researcher**	**Did Not Participate**
Dean's Office (n = 14)	7	5	2
Registrar (n = 4)	1	2	1
Student Affairs (n = 10)	2	5	3
External Affairs (n = 1)	1	0	0
Admissions (n = 1)	1	0	0
Totals:	12	12	6

(Appendix A). Additionally, the pretest group for the Time 1 instrument was given a verbal introduction to the study.

The pretest group for the Time 2 survey questionnaire consisted of 99 University of Wisconsin School of Pharmacy graduates from the Class of 1998. This group was selected because they were new pharmacists who had graduated from pharmacy school less than one year previous to the pretest and would approximate the study group at Time 2. Questionnaires were mailed with an introductory letter (Appendix B), Study Description and an addressed, postage-paid return envelope. After 38 responses were received, personalized notes were attached to a follow-up mailing to the 61 non-respondents. This resulted in an additional five responses for a total response rate of 43 out of 99 (43.4%).

Analyses of pretest data for the Time 1 and Time 2 pretest instruments were conducted during April and May of 1999, respectively. Analyses included checking the validity of the instruments by determining whether respondents were able to answer the questions and whether any wording of items needed to be changed. Reliability analyses were also conducted to determine how well items scaled. No scales or items were dropped from either instrument subsequent to these analyses.

3.4 Survey of Class of 1999 Graduates by Mail Questionnaire

Distribution of the Time 1 questionnaires began in June 1999 and continued through September 1999. Distribution of Time 2 questionnaires began in January 2000 and continued through May 2000. Time 2 questionnaires were distributed to all subjects who

responded to the Time 1 instrument; a Time 2 questionnaire was mailed to each Time 1 respondent six months (plus or minus two weeks) after his or her Time 1 response was received. Announcement postcards preceded the mailing of Time 2 instruments only. At Time 1, participating schools that mailed instruments on behalf of the researcher were reluctant to also send an announcement postcard. Therefore, in order to not introduce a selection bias into the sampling process, no Time 1 announcement postcards were mailed. Reminder postcards followed mailing of Time 2 questionnaires at intervals of two weeks following the mailing of the instruments. Examples of postcards used are presented in Appendix C.

3.4.1 Distribution of Time 1 Questionnaires

Beginning in June 1999, Time 1 questionnaires were distributed to the 1999 graduates of institutions that had agreed to provide mailing addresses, assist in mailing questionnaires, or to distribute surveys on campus. Questionnaires were mailed directly to graduates of 12 participating institutions providing names and addresses of graduates. As for the other 12 institutions, 11 agreed to mail out surveys that were sent to them in sealed envelopes with postage and return address labels already affixed. One institution made surveys available to graduating students on campus during their last week of classes. The distribution process continued through September 1999. Recruitment efforts continued during this period until enough schools were recruited to provide the regional sample sizes reported in Section 3.1 above. As a result, subjects received their questionnaires anywhere

from two weeks before graduation to two months after. For the major study group, those respondents who responded at both Time 1 and at Time 2 (Two-Wave Respondents), this process resulted in 24.8% of the Two-Wave Respondents receiving their Time 1 questionnaires before becoming licensed and 75.2% receiving them after becoming licensed as pharmacists. Appendix D presents the first page of the Time 1 questionnaire and the items selected for data analysis.

3.4.2 Distribution of Time 2 Questionnaires

Beginning in December 1999, Time 2 questionnaires were mailed to those respondents who had responded at Time 1. The timing for distribution of Time 2 questionnaires was set to provide a six-month period between receipt of the Time 1 response and the mailing of the Time 2 instrument. This process continued at one-month intervals until May 2000. Appendix E presents the first page of the Time 2 questionnaire and the items selected for data analysis.

3.5 Response Rates

Table 3.2 summarizes response rates by region. For the Time 1 data collection period, 2,041 surveys were distributed. Of the surveys distributed, 94 were returned as undeliverable and, as well as could be determined, another 97 were never distributed by one school. This resulted in n = 1,850. Of these 1,850 surveys, 259 were returned for an effective response rate of 14.0%. Regionally, the response rates for all questionnaires

Table 3.2 Regional Response Rates

Region	Total Mailed		Single-Wave Respondents		Two-Wave Respondents		
	n	% of Total	n	% of Total Mailed	n	% of Single Wave Respondents	% of Total Mailed
Northeast	536	25.8	70	13.3	31	42.3	5.9
Midwest	571	28	71	12.4	45	64.3	7.9
West	291	14.3	46	15.8	27	58.7	9.3
South	653	32	72	11	32	44.4	4.9
Total	2041	100	259	12.7	138	53.3	6.8

distributed were as follows: Northeast 70/526, (13.3%); Midwest 71/571, (12.4%); West 46/291 (15.8%); and South 72/653 (11.0%). The regional percentages of Time 1 respondents were as follows: Northeast (27.0%); Midwest (27.0%); West (17.8%); and South (27.8%).

Of the 259 Time 1 respondents, 138 (53.3%) also responded at Time 2. This group of 138 respondents comprises the main study group for the study and they are referred to as *Two-Wave Respondents* from this point forward. Regional response rates for Time 2 were: Northeast 31/70 (42.3%); Midwest 48/71 (67.6%); West 27/46 (58.7%) and South 32/72 (44.4%).

The low overall response rate is likely attributable to several factors. First of all, the people in the sampling frame were in a stage of their lives filled with major changes: graduation, moving, preparing for licensure examinations, and possibly still seeking a pharmacist job. Due to this high mobility it is possible that a number of questionnaires never reached the intended person and were not returned as undeliverable. Further, with all the other major events occurring in their lives, many of these Class of 1999 graduates may simply have been too busy or unmotivated to respond to a mail questionnaire.

3.6 Description of Sample

Table 3.3 describes demographics for Single-Wave Respondents (i.e. all Time 1 respondents), Two-Wave Respondents (i.e., Time 1 respondents who also responded at Time 2), and Time 2 non-respondents. Demographic characteristics analyzed were age,

Table 3.3 Respondent Demographics[1]

	All U.S. Graduates 1999[2]		Single Wave Respondents (n = 259)		Two-Wave Respondents (n = 138)		Time 2 Non-Respondents (n = 121)	
Gender	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Male	2924	36.4	80	30.9	39	28.3	41	33.9
Female	5130	63.7	175	67.6	99	71.7	76	62.8
Missing	0	0	4	1.5	0	0	4	3.3
Education								
BS Pharmacy	3876	48.1	95	36.7	52	37.7	43	35.5
PharmD	3265	40.5	133	51.4	74	53.6	59	48.8
BS & PharmD	913	11.4	29	11.2	11	8.0	18	14.9
Missing	0	0	2	0.8	1	0.7	1	0.8
Additional Degree	NA[3]	NA	68	28.2	39	28.3	29	24.0
Associate's	NA	NA	5	1.9	3	2.2	2	1.7
BS/BA	NA	NA	66	25.5	35	25.4	31	25.6
Master's	NA	NA	2	0.8	1	0.7	1	0.8
	Mean	**sd**	**Mean**	**sd**	**Mean**	**sd**	**Mean**	**sd**
Age	NA	NA	27	4.71	27	4.61	27	4.83

[1] Mann-Whitney U and Kolmogorov-Smirnov tests were not significant when testing for differences in any of these variables between Two-Wave Respondents and Time 2 Non-Respondents.

[2] Meyer, S.M. and Patton, J.M. (2000). The pharmacy student population: Applications received 1998-99, Degrees conferred 1998-99, Fall 1999 enrollments, American Journal of Pharmaceutical Education, Vol.64, Winter Supplement, pp. 74S-84S.

[3] NA = Information is not available.

gender and education. Although it was not possible to test for a statistically significant difference without access to the AACP data file, respondent proportions for gender and professional degrees earned are somewhat different from those seen in the overall population of 1999 U.S. pharmacy graduates also presented in Table 3.3 (Meyer and Patton, 2000). Comparison of Time 2 respondents (i.e., Two-Wave Respondents) to Time 2 non-respondents reveals no substantive or statistically significant differences (Mann-Whitney U and Kolmogorov-Smirnov tests not significant) across the demographic categories presented, an indication favorable to the interpretation that there was little non-response bias at Time 2. Also, for virtually all the major study variables presented in subsequent sections, there were virtually no significant differences in responses when comparing early to late responders. This comparison was drawn between respondents at the 25th percentile or less and the 75th percentile or more for response time as measured in days (from mailing date to return date of the questionnaire). Table 3.4 presents this comparison for Single-Wave Respondents and shows that t-tests of differences in means were not significant for all Time 1 variables – an indication of little or no non-response bias. Table 3.5 presents this comparison for Two-Wave Respondents and shows that t-tests of differences in means for all the major study variables were significant for only three of eighteen variables – another indication favorable to the interpretation that there was little non-response bias in the study data.

Table 3.4 Tests for Significant Differences between Early and Late Responders at Time 1

	Percentile of Days to Respond[1]	N	Mean	Std. Deviation	t-test t, d.f.	Sig.
Quality of Patient Relationships	≤25th	66	7.67	1.53	1.55, 137	0.12
	≥75th	73	7.19	2.03		
Intensity of Work Demands	≤25th	66	5.74	1.75	0.10, 137	0.92
	≥75th	73	5.71	2.03		
Allocation of Time	≤25th	66	8.09	1.61	1.23, 137	0.22
	≥75th	73	7.71	2.02		
Pharmacy Service Orientation Site Worked for Pay	≤25th	63	6.35	1.90	-0.09, 130	0.93
	≥75th	69	6.38	1.93		
Pharmacy Service Orientation Site Worked for Academic Credit	≤25th	60	7.58	1.95	-0.70, 123	0.49
	≥75th	65	7.83	2.11		
Self-regulation	≤25th	65	0.13	0.67	-0.24, 136	0.81
	≥75th	73	0.16	0.68		
Autonomy	≤25th	65	0.75	0.64	-1.35, 136	0.18
	≥75th	73	0.88	0.55		
Desired Control	≤25th	64	3.11	0.59	0.51, 135	0.61
	≥75th	73	3.06	0.50		

[1]The 25th percentile for Days to Respond = 14 days & 75th percentile for Days to Respond = 40 days. Days to Respond descriptive statistics: Mean = 34.5, s.d. = 33.82, min = 7, max = 314.

Table 3.5 Tests for Significant Differences between Early and Late Responders at Time 2

	Percentile of Days to Respond[1]	N	Mean	Std. Deviation	t-test t, d.f.	Sig.
Quality of Patient Relationships	≤25th	34	7.89	1.55	1.45, 65	0.15
	≥75th	33	7.19	2.35		
Intensity of Work Demands	≤25th	34	5.33	1.75	-2.30, 65	< 0.03
	≥75th	33	6.30	1.75		
Allocation of Time	≤25th	34	8.24	1.56	-0.25, 65	0.81
	≥75th	33	8.35	1.94		
Pharmacy Service Orientation (PSO) Time 1 Site Worked for Pay	≤25th	33	6.17	2.05	-2.22, 64	0.03
	≥75th	33	7.17	1.61		
PSO Time 1 Site Worked for Academic Credit	≤25th	33	7.43	2.08	-0.79, 63	0.43
	≥75th	32	7.84	2.11		
Time 1 Self-regulation	≤25th	33	-0.04	0.87	-2.03, 64	< 0.05
	≥75th	33	0.35	0.71		
Time 1 Autonomy	≤25th	33	0.84	0.68	-0.24, 64	0.81
	≥75th	33	0.88	0.64		
Time 1 Desired Control	≤25th	32	3.16	0.54	1.43, 63	0.16
	≥75th	33	2.96	0.61		
Time 2 Self-regulation	≤25th	34	0.39	0.81	0.92, 62	0.36
	≥75th	30	0.19	0.92		
Time 2 Autonomy	≤25th	34	0.75	0.65	-1.07, 62	0.29
	≥75th	30	0.92	0.65		
Pharmacy Service Orientation Time 2 Current Site	≤25th	34	6.30	1.65	-0.08, 65	0.93
	≥75th	33	6.33	1.73		
Organization of Work	≤25th	33	0.41	0.83	0.29, 61	0.77
	≥75th	30	0.35	0.90		
Pharmaceutical Care Attitude	≤25th	34	1.04	0.67	0.34, 63	0.73
	≥75th	31	0.99	0.47		
Size	≤25th	32	0.12	0.74	1.81, 59	0.08
	≥75th	29	-0.21	0.69		
Workload	≤25th	31	-0.15	0.58	0.41, 58	0.69
	≥75th	29	-0.22	0.82		
Time 2 Desired Control	≤25th	34	3.18	0.59	0.42, 63	0.68
	≥75th	31	3.12	0.61		
Time 2 Perceived Control	≤25th	34	1.66	0.80	-0.79, 63	0.43
	≥75th	31	1.80	0.67		
Organizational Commitment	≤25th	33	0.54	1.33	-1.16, 61	0.25
	≥75th	30	0.92	1.27		

[1]The 25th percentile for Days to Respond = 18.5 days & 75th percentile for Days to Respond = 35 days. Days to Respond descriptive statistics: Mean = 30, s.d. = 22.17, min = 2, max = 175.

3.7 Measures

Next, I discuss the development of measures to address three basic areas of inquiry. The first area includes *Time 1 variables* that are Time 1 measures of respondents' Personal Attributes (Professional Orientation, Work-related Preferences, and Pharmaceutical Care Attitudes), and worksite attributes (Pharmacy Service Orientation, or "PSO"), and desired participation in workplace decision making (Desired Control). The second area includes *Time 2 variables* that are Time 2 measures of these same variables, namely, respondents' Personal Attributes, Worksite Attributes, desired participation in workplace decision making (Desired Control), with the addition of perceived participation in workplace decision-making (Perceived Control). The third area is comprised of the *dependent variable*, respondents' Organizational Commitment at Time 2.

3.7.1 Time 1 Variables

In Chapter 2, the theoretical bases for the impact of Personal Attributes (Professional Orientation and Work-related Preferences) and Site Attributes (Pharmacy Service Orientation) on worker desire for participation in decision-making (Desired Control) were discussed. In this section, these concepts are operationalized.

Professional Orientation at Time 1

Two, six-item scales from Schack and Hepler's (1979) adaptation of Hall's (1968) professionalism scale comprise the 12 items in the Time 1 questionnaire Item 9 (a-l). Responses are on a 5-point Likert scale (-2 to +2). These two scales measure belief in

professional self-regulation and belief in professional autonomy.

The first of these scales measures "belief in professional self-regulation" (Self-regulation). Table 3.6 presents the individual item and scale means, standard deviations, item to total correlations and Cronbach's Alpha for this scale. Although this scale originally contained six items, one item showed significantly lower item-to-total correlation (0.17) at Time 1 and was subsequently dropped from this and future analyses. For the five-item scale selected for analysis, Cronbach's Alpha overall scale reliability was 0.67 for Single Wave Respondents and 0.64 for Two-Wave Respondents. The Schack and Hepler (1979) results for this scale were as follows: n = 416, Alpha = 0.71, mean = 0.60, s.d. = 0.74.[1] Individual item means were not reported.

The second of the professional orientation scales measures "belief in professional autonomy" (Autonomy). Table 3.7 presents the individual item and scale means, standard deviations, item to total correlations and Cronbach's Alpha for this scale. Using Cronbach's Alpha, overall scale reliability for was 0.71 for Single-Wave Respondents and 0.74 for Two-Wave Respondents. With good individual item to total correlations, all six items were retained for analysis. The Schack and Hepler (1979) results for this scale were as follows:

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[1]Schack and Hepler (1979) scored each item 1 (for the most professional response) through 5 (the least professional response). The present study scored each item +2 (for the most professional response) through -2 (for the least professional response). For ease of comparison with present study results in Table 3.6, the Schack and Hepler results have been converted to the same response scale used in this study by the following calculation: [3 minus Schack and Hepler reported mean].

Table 3.6 Time 1 Belief in Professional Self-regulation Scale

	Single-Wave Respondents (n = 257) (Alpha = 0.67)		**Two-Wave Respondents (n = 137) (Alpha = 0.64)**	
Self-regulation Scale	**Mean (S.D.)**	**Item to Total Correl.**	**Mean (S.D.)**	**Item to Total Correl.**
	0.17 (1.13)		**0.13 (1.12)**	
Pharmacists should be the only ones who determine and set standards for their practice.	0.61 (1.15)	0.50	0.61 (1.17)	0.48
The only professional standards a pharmacist should accept are those established by his/her colleagues	-0.40 (1.08)	0.39	-0.36 (1.07)	0.43
Only another pharmacist is qualified to judge the competence of a pharmacist's work	0.23 (1.21)	0.45	0.26 (1.21)	0.41
Pharmacists who violate professional standards should be judged only by the pharmacy colleagues	0.14 (1.10)	0.47	0.14 (1.13)	0.43
Non-pharmacists should be allowed input into the development of standards for professional competence which guide a pharmacist's professional practice (Reverse coded)	0.06 (1.12)	0.29	0.02 (1.04)	0.26
A pharmacist should be willing to modify the basic standards which guide his/her practice in order to conform to the wishes of the public (Reverse coded). **Item dropped from analysis.**	0.36 (1.12)	0.17	0.30 (1.09)	0.22

Item Responses:

-2 = Strongly Disagree
-1 = Disagree
0 = Neither agree nor disagree
1 = Agree
2 = Strongly Agree

Table 3.7 Time 1 Belief in Professional Autonomy Scale

	Single-Wave Respondents (n = 256) Alpha = 0.71		**Two-Wave Respondents (n = 136) Alpha = 0.73**	
	Mean (S.D.)	**Item to Total Correl.**	**Mean (S.D.)**	**Item to Total Correl.**
Autonomy Scale	**0.87 (0.95)**		**0.84 (0.93)**	
Pharmacists' employers should establish specific guidelines for making professional decisions in pharmacy work (Reverse coded)	0.25 (1.18)	0.42	0.18 (1.21)	0.46
The opportunity to exercise professional judgment in a pharmacist's work should be determined by his/her employer (Reverse coded)	1.30 (0.75)	0.46	1.26 (0.74)	0.46
A pharmacist's employer has the right to review and change the professional decisions a pharmacist makes (Reverse coded)	1.10 (0.91)	0.51	1.05 (0.91)	0.47
As a pharmacist, I would depart from my employer's policies when I judge it professionally necessary	1.03 (0.83)	0.33	1.07 (0.79)	0.35
A pharmacist's employer has the right to change his/her professional decisions because the employer is the one who pays the pharmacist's salary (Reverse coded)	1.32 (0.80)	0.51	1.29 (0.74)	0.61
My employer has no right to place limitations on the decision I make concerning professional matters	0.18 (1.13)	0.42	0.13 (1.09)	0.41

Item Responses:

-2 = Strongly Disagree
-1 = Disagree
0 = Neither agree nor disagree
1 = Agree
2 = Strongly Agree

n = 416, Alpha = 0.65, mean = 1.18, s.d. = 0.62.[1] Individual item means were not reported.

For both the Self regulation and Autonomy scales, no substantively or statistically significant differences in item statistics or scale performance are seen when comparing Two-Wave Respondents to Single-Wave Respondents (two tailed t-test of scale means not significant).

Work-related Preferences

Respondent work-related preferences are measured using scales (Glaxo Pathway Evaluation Program)[2] that assess their preferences in three areas. The seven items that comprise the measures for these three areas were chosen from among 20 Glaxo Pathways Evaluation Program items included in the Time 1 questionnaire. The selection of the seven items comprising the three scales chosen for analysis was made after examining the face validity and inter-item correlations among the 20 items and constructing scales from the items that correlated well together. These items were included only in the Time 1 questionnaire because as personal preferences representing stable personal traits, they were not likely to change from in the six months from Time 1 to Time 2; hence only a baseline assessment was necessary.

Table 3.8 presents the individual item and scale means, standard deviations, item to

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[1]Again, for ease of comparison with present study results in Table 3.7, the Schack and Hepler results have been converted to the same response scale used in this study by the following calculation: [3 minus Schack and Hepler reported mean].

[2]The Glaxo Pathway Evaluation Program assists U.S. pharmacy students in evaluating the direction they would like to take in the pharmacy careers. This instrument is one of the methods they provide to students for self-assessment.

Table 3.8 Time 1 Work-related Preferences

		Single-Wave Respondents		Two-Wave Respondents	
		Mean (S.D.)	**Item to Total Correl.**	**Mean (S.D.)**	**Item to Total Correl.**
Quality of Patient Relationships Scale	**Single-Wave Rs Alpha = 0.81; n = 257 Two-Wave Rs Alpha = 0.82; n = 137**	**7.46 (2.07)**		**7.39 (2.16)**	
1 = Prefer spend *none* of my time (doing) counseling	10 = Prefer spend *most* of my time (doing) counseling	7.17 (1.92)	0.65	7.04 (1.96)	0.69
1 = Want *no* ongoing/long-term relationships at all	10 = Want *most* relationships to be ongoing long-term	7.65 (1.98)	0.70	7.61 (2.06)	0.72
1 = Impact of my work on people's well-being can be *indirect*	10 = Want to *directly* add to people's well-being	7.58 (2.30)	0.62	7.52 (2.43)	0.65
Intensity of Work Demands Scale	**Single-Wave Rs Alpha = 0.65; n = 259 Two-Wave 2 Rs Alpha = 0.65 n = 138**	**5.61 (2.20)**		**5.73 (2.03)**	
1 = Prefer *many* activities at once	10 = Prefer *one* activity at a time	5.73 (2.20)	0.49	5.92 (2.07)	0.48
1 = Can accept/prefer *high-pressure* environment	10 = Prefer *minimal-pressure* environment	5.49 (2.20)	0.49	5.55 (2.00)	0.48
Allocation of Time Scale	**Single-Wave Rs Alpha = 0.66; n = 258 Two-Wave Rs Alpha = 0.68; n = 137**	**7.80 (2.25)**		**7.92 (2.13)**	
1 = Can accept *irregular* &/or *long* hours	10 = Prefer *regular, predictable* hours	7.40 (2.61)	0.50	7.56 (2.55)	0.52
1 = Need *little* free time	10 = Want *ample* free time	8.19 (1.81)	0.50	8.27 (1.56)	0.52

total correlations and Cronbach's Alpha for these three work-related preference scales. The Work-related Preferences scales address: 1) quality of patient relationships, 2) intensity of work demands, and 3) allocation of time. The first of these preference measures, Quality of Patient Relationships, asked respondents to rate their preferences for closeness, continuity, and meaningfulness in their relationships with patients. Using Cronbach's Alpha, overall scale reliability for was 0.81 for Single-Wave Respondents and 0.82 for Two-Wave Respondents.

The second scale assesses respondent preferences concerning work pressure and activity levels (Intensity of Work Demands). Using Cronbach's Alpha, scale reliability for was 0.65 for Intensity of Work Demands both Single-Wave Respondents (mean = 5.61) and Two-Wave Respondents (mean = 5.73). The third scale measures respondent preferences for allocation of time between home and work and for predictability of work schedule (Allocation of Time). Again, no substantial differences in item statistics or scale performance are seen when comparing Single-Wave Respondents (mean = 7.80, Alpha = 0.66) to Two-Wave Respondents (mean = 7.92, Alpha = 0.68). For each of these three scales, there was no statistically significant difference when comparing the means of Single-Wave Respondents to the means of Two-Wave Respondents (Mann-Whitney U and two tailed t-tests not significant).

Table 3.9 presents a comparison of study performance of these items to the results obtained by Glaxo in a 1993 sample of practicing pharmacists. The comparisons are drawn for three major groups of practitioners: chain pharmacy staff, independent pharmacy staff

Table 3.9 Comparison of Glaxo[1] Results to Study Results: Two-Wave Respondents

	Chain Staff		Independent Staff		Hospital Staff	
	Glaxo n = 144 Mean (s.d.)	**Study** n = 63 Mean (s.d.)	**Glaxo** n = 135 Mean (s.d.)	**Study** n = 15 Mean (s.d.)	**Glaxo** n = 713 Mean (s.d.)	**Study** n = 23 Mean (s.d.)
Quality of Patient Relationships	**6.4 (2.1)**	**7.9 (1.8)**	**6.9 (1.8)**	**8.6 (1.3)**	**4.7 (2.3)**	**5.9 (2.2)**
Counseling	5.2 (2.1)	7.3 (1.7)	5.3 (1.8)	8.3 (1.2)	3.3 (2.0)	5.8 (2.2)
Continuity	6.1 (2.4)	8.3 (1.5)	7.6 (1.8)	9.1 (1.0)	3.2 (2.5)	5.6 (2.0)
Helping People	7.8 (1.8)	8.0 (2.1)	7.9 (1.7)	8.5 (1.7)	7.5 (2.4)	6.2 (2.5)
Intensity of Work Demands	**3.3 (2.2)**	**6.0 (2.0)**	**4.1 (2.3)**	**6.0 (2.1)**	**3.2 (1.9)**	**5.8 (2.1)**
Multi-tasking	3.0 (2.0)	6.3 (2.0)	3.9 (2.4)	5.8 (1.6)	3.2 (1.9)	5.9 (2.3)
Pressure	3.6 (2.4)	5.6 (1.9)	4.2 (2.2)	6.2 (2.5)	3.2 (1.8)	5.6 (1.9)
Allocation of Time	**5.4 (2.8)**	**8.2 (1.9)**	**6.5 (2.8)**	**8.2 (2.0)**	**6.4 (2.7)**	**7.7 (2.2)**
Work Schedule	5.2 (3.3)	7.8 (2.4)	6.6 (3.0)	8.2 (2.1)	6.1 (3.1)	7.4 (2.6)
Leisure-Family	5.6 (2.3)	8.5 (1.4)	6.4 (2.5)	8.2 (1.9)	6.7 (2.2)	7.9 (1.7)

[1]Glaxo Pathway Evaluation Program for Pharmacy Professionals, 2nd Edition (1993).

and hospital pharmacy staff. While some of the differences between study and Glaxo data are striking, without access to the Glaxo data set, statistical tests of significance in differences were not possible. Nonetheless, it is likely that the differences observed between study and Glaxo data are due to differing amounts of practice experience. The Glaxo study drew its respondents from the broad population of practicing pharmacists while this study is confined to newly licensed 1999 graduates. Also, changes in practices over time and the fact that the socialization of the two groups occurred about six years apart likely contributed to the observed differences.

Pharmacy Service Orientation (PSO)

Respondents' descriptions of the Pharmacy Service Orientation (PSO) of their worksites were measured using three semantic differential items. Response for each was made by placing a mark on a line having a response anchor at each end, but having no numerical identifiers; numerical identifiers ranting from 1 to 10 were assigned when responses were coded. These items asked for assessment of : 1) the *orientation* of the site, i.e., patient versus product; 2) the *focus* of the site, i.e., quality versus quantity; and 3) the nature of the *pharmacist's work,* i.e., professional versus technical. A mean of these items was computed to obtain each respondent's Time 1 assessment of the most recent sites where they worked for pay and also sites where they worked most recently for academic credit.

Table 3.10 presents individual item and scale means, standard deviations, item to total correlations and Cronbach's Alpha for the most recent sites where respondents worked for pay as well as the most recent sites where they worked for academic credit. Using

Table 3.10 Time 1 Pharmacy Service Orientation (PSO)

		Single-Wave Respondents		Two-Wave Respondents	
		Mean (S.D.)	**Item to Total Correl.**	**Mean (S.D.)**	**Item to Total Correl.**
PSO Site Worked for Pay	**Single-Wave Alpha = 0.78 (n = 243)** **Two-Wave Alpha = 0.78 (n = 134)**	**6.38 (2.33)**		**6.35 (2.29)**	
	Orientation				
1 = Product	10 = Patient	6.42 (2.38)	0.60	6.53 (2.38)	0.57
	Focus				
1 = Quantity	10 = Quality	6.22 (2.50)	0.62	6.05 (2.46)	0.58
	Pharmacist's Work				
1 = Technical	10 = Professional	6.49 (2.09)	0.64	6.46 (1.99)	0.68
PSO Site Worked for Academic Credit	**Single-Wave Alpha = 0.87 (n = 232)** **Two-Wave Alpha = 0.88 (n = 135)**	**7.66 (2.25)**		**7.62 (2.31)**	
	Orientation				
1 = Product	10 = Patient	7.80 (2.25)	0.77	7.74 (2.36	0.80
	Focus				
1 = Quantity	10 = Quality	7.57 (2.27)	0.77	7.54 (2.34)	0.78
	Pharmacist's Work				
1 = Technical	10 = Professional	7.62 (2.23)	0.73	7.57 (2.24)	0.72

Cronbach's Alpha, overall Pharmacy Service Orientation (PSO) scale reliability (site worked for pay) was 0.78 for both Single-Wave Respondents and for Two-Wave Respondents. The PSO scale reliability for the most recent site worked for academic credit was 0.87 for Single-Wave Respondents and 0.88 for Two-Wave Respondents. Looking at both the Worked for Pay and Worked for Academic Credit sites, no substantially or statistically significant differences in item statistics seen when comparing Single-Wave Respondents to Two-Wave Respondents for either site type (two tailed t-tests not significant). Comparing Two-Wave Respondents' assessments of Worked for Pay and Worked for Academic Credit sites, sites where they worked for academic credit (mean = 7.62, s.d.= 2.31) were significantly higher than where they worked for pay (mean = 6.35, s.d. = 2.38; paired samples t-test, $p < 0.01$). Reasons for this difference can include more consistency in the sites worked for academic credit, and a ceiling effect in responses.

Time 1 Normative Belief in Workplace Decision-making (Desired Control)

The Participation Gap Questionnaire (PGQ) developed by Graham and Verma (1991) was adapted for use with pharmacist respondents by making slight changes in wording. This was done so that, where applicable, either the pharmacist or the pharmacy was the referent in each item. The PGQ contains two primary components and a derivative participation gap measure. The first primary component is a measure of respondents' expectations (i.e., desire) for pharmacists' participation in decision-making in various areas of their jobs (Desired Control). The second primary component asks respondents to assess how much pharmacists actually participate in the decisions affecting the same job areas

(Perceived Control). The participation gap is then calculated by subtracting Perceived Control from Desired Control.

For Single-Wave Respondents, Desired Control averages 3.07 on a scale of 0 to 4 and has a 0.87 Cronbach's Alpha. These figures are 3.06 and 0.89, respectively, for Two-Wave Respondents. All items in this 12-item scale had good item to total correlations. As shown in Table 3.11, the individual item and scale statistics are similar when comparing the two groups. Respondents have a fairly high desire for participating in workplace decision-making and there were no substantively or statistically significant differences between means when comparing Single-Wave and Two-Wave Respondents (Mann-Whitney U and two tailed t-tests not significant).

In this section, only the Time 1 Desired Control is presented and only the Time 1 Desired Control is used in subsequent analyses. The Time 1 Perceived Control scale was reliable (Alpha = 0.85) but its validity questionable for the following reasons. Recall that at the time that respondents were responding to this series of items, they were either not yet licensed as pharmacists or had just become licensed within the past two months. Thus, their ability to accurately and consistently report how much pharmacists actually participated in workplace decision-making was limited. Yet, the desire for participation in workplace decision-making is a more personal, enduring quality.

Table 3.11 Time 1 Normative Belief in Workplace Decision-making (Desired Control)

	Single-Wave Respondents (n=249) Alpha = 0.87		**Two-Wave Respondents (n = 133) Alpha = 0.89**	
*How much "say" do you think pharmacists **should** have in the following areas of the job?*	**Mean (S.D.)**	**Item to Total Correl.**	**Mean (S.D.)**	**Item to Total Correl.**
Desired Control Scale	**3.07 (0.85)**		**3.06 (0.86)**	
The way work is done	3.47 (0.57)	0.55	3.49 (0.57)	0.62
Keeping track of quality	3.44 (0.63)	0.35	3.47 (0.62)	0.36
How fast work is done	3.34 (0.73)	0.55	3.32 (0.70)	0.59
How much work pharmacy staff should do in a day	3.22 (0.72)	0.59	3.25 (0.75)	0.59
Who should do what job in your pharmacy	3.29 (0.74)	0.59	3.29 (0.77)	0.63
When work day begins and ends	2.64 (1.01)	0.54	2.71 (1.00)	0.61
Who should be fired if they do a bad job or don't come to work	2.86 (1.00)	0.62	2.85 (1.03)	0.69
Who should be hired to work in your pharmacy	3.27 (0.83)	0.64	3.21 (0.87)	0.67
Handling complaints or grievances	2.88 (0.93)	0.59	2.83 (0.96)	0.66
Who gets promoted	2.63 (1.02)	0.67	2.56 (1.05)	0.74
The use of new technology	3.19 (0.78)	0.60	3.17 (0.75)	0.66
The selection of your supervisor	2.63 (1.06)	0.47	2.62 (1.01)	0.47
Responses: 0 = None 1 = Little 2 = Some 3 = Quite a Bit 4 = Very Much				

3.7.2 Time 2 Variables

In this section, the Time 2 variables measuring respondents' Personal Attributes (Professional Orientation and Pharmaceutical Care Attitudes), Site Attributes (Pharmacy Service Orientation, Organization of Work, Size, and Workload), desired participation in decision-making (Desired Control), and perceived participation in decision-making (Perceived Control) at Time 2 are presented.

Professional Orientation at Time 2

The two six-item scales from Schack and Hepler's (1979) adaptation of Hall's (1968) professionalism scale that were used at Time 1 were used again in the Time 2 measurement of professional orientation. These two scales measure belief in professional self-regulation (Self-regulation) and belief in professional autonomy (Autonomy). Table 3.12 contains individual item and scale means, standard deviations, item to total correlations and Cronbach's Alpha for Self-regulation. To retain consistency with the Time 1 Self-regulation scale retained for analysis, the same item which had a low item to total correlation was dropped. Using Cronbach's Alpha, overall scale reliability for was 0.77 for the five items retained in Self-regulation. Some differences in item statistics and scale performance are seen when comparing the Time 1 measure to the Time 2 measure for Two-Wave Respondents. The Time 2 measure (mean = 0.27, s.d = 1.17) is slightly higher (paired samples t-test significant, 2-tailed $p < 0.05$) than the Time 1 measure (mean = 0.13, s.d = 1.12) and Cronbach's Alpha increased from 0.64 to 0.77 (see Table 3.6).

Table 3.13 presents the individual item and scale means, standard deviations, item to

Table 3.12 Time 2 Belief in Professional Self-regulation

	Two-Wave Respondents (n=133) Alpha = 0.77	
	Mean (S.D.)	**Item to Total Correl.**
Self-regulation Scale	**0.27 (1.17)**	
Pharmacists should be the only ones who determine and set standards for their practice.	0.55 (1.21)	0.61
The only professional standards a pharmacist should accept are those established by his/her colleagues	-0.20 (1.09)	0.52
Only another pharmacist is qualified to judge the competence of a pharmacist's work	0.60 (1.09)	0.53
Pharmacists who violate professional standards should be judged only by the pharmacy colleagues	0.32 (1.16)	0.55
Non-pharmacists should be allowed input into the development of standards for professional competence which guide a pharmacist's professional practice (Reverse coded)	0.08 (1.17)	0.50

Item Responses:

-2 = Strongly Disagree
-1 = Disagree
0 = Neither agree nor disagree
1 = Agree
2 = Strongly Agree

Table 3.13 Time 2 Belief in Professional Autonomy

	Two-Wave Respondents (n = 130) Alpha = 0.72	
	Mean (S.D.)	**Item to Total Correl.**
Autonomy Scale	**0.84 (0.96)**	
Pharmacists' employers should establish specific guidelines for making professional decisions in pharmacy work (Reverse coded)	0.10 (1.15)	0.32
The opportunity to exercise professional judgment in a pharmacist's work should be determined by his/her employer (Reverse coded)	1.17 (0.81)	0.44
A pharmacist's employer has the right to review and change the professional decisions a pharmacist makes (Reverse coded)	1.03 (1.00)	0.62
As a pharmacist, I would depart from my employer's policies when I judge it professionally necessary	1.17 (0.77)	0.33
A pharmacist's employer has the right to change his/her professional decisions because the employer is the one who pays the pharmacist's salary. (Reverse coded)	1.34 (0.86)	0.57
My employer has no right to place limitations on the decision I make concerning professional matters	0.24 (1.08)	0.40
Item Responses: **-2 = Strongly Disagree** **-1 = Disagree** **0 = Neither agree nor disagree** **1 = Agree** **2 = Strongly Agree**		

total correlations and Cronbach's Alpha for the second of the professional orientation scales, belief in professional autonomy (Autonomy). Using Cronbach's Alpha, overall scale reliability for was 0.72 for Autonomy. This scale's performance and statistics are virtually identical to those seen at Time 1 (see Table 3.7) and there was no statistically significant difference between them (paired samples t-test, 2-tailed p = 0.93).

Pharmaceutical Care Attitudes

This 10-item scale (Johansen, 1999), presented in Table 3.14, measures respondent attitudes toward pharmaceutical care. Of the 10 items, six were stated in the affirmative, while 4 items were stated negatively and subsequently reverse coded. Respondents were asked the extent to which they agree or disagree with this series of statements about pharmaceutical care along a five-point scale from -2 (strongly disagree) to +2 (strongly agree). As can be seen by examining Table 3.14, respondent attitudes toward pharmaceutical care were fairly positive with an overall scale mean of 0.99 (s.d. = 0.93). This scale's reliability (Cronbach's Alpha = 0.81) was also good. Table 3.15 illustrates the similarity between results obtained in this study and those of Johansen (1999).

Pharmacy Service Orientation (PSO) – Time 2

Table 3.16 presents means, standard deviations, and Cronbach's Alpha for one of respondents' descriptions of their worksites' attributes, PSO. This measure used the same three-item scale of semantic differentials used at Time 1. Again, responses were made by placing a mark on a line having a response anchor at each end, but having no numerical identifiers. The three items asked for descriptions of the site in each of

Table 3.14 Pharmaceutical Care Attitudes Time 2

	Two-Wave Respondents (n = 133) Alpha = 0.81	
Pharmaceutical Care Attitude Scale	**Mean (S.D.)**	**Item to Total Correl.**
	0.99 (0.93)	
Practicing pharmaceutical care is more rewarding than traditional (i.e., dispensing-focused) pharmacy practice	1.06 (0.99)	0.49
Pharmaceutical care is <u>not</u> revolutionizing the practice of pharmacy. (Reverse coded)	0.43 (1.16)	0.57
The practice of pharmaceutical care is an obligation of all pharmacists.	0.92 (1.03)	0.23
Practicing pharmaceutical care does <u>not</u> endanger the physician-patient relationship.	1.27 (0.85)	0.43
Pharmaceutical care is a giant step forward in the practice of pharmacy.	1.05 (0.84)	0.66
The improvement of the public health does <u>not</u> require pharmaceutical care. (Reverse coded)	1.20 (0.80)	0.47
Following up on the success or failure of the drug therapy of patients is <u>not</u> the job of the staff in a pharmacy. (Reverse coded)	0.85 (0.89)	0.43
Pharmaceutical care allows all pharmacy staff to more effectively apply their knowledge than previously has been possible.	1.03 (0.81)	0.57
Practicing pharmaceutical care gives pharmacy greater professional status.	1.15 (0.80)	0.56
Pharmaceutical care is just an impressive name for the job of doing the physician's unwanted chores. (Reverse coded)	0.94 (1.05)	0.42
Item Responses: **-2 = Strongly Disagree** **-1 = Disagree** **0 = Neither agree nor disagree** **1 = Agree** **2 = Strongly Agree**		

Table 3.15 Comparison of Study Pharmaceutical Care Results to Johansen (1999) Results

	Present Study n = 133 Mean (S.D.)	**Johansen[1] n = 27 Mean (S.D.)**
Pharmaceutical Care Attitude Scale	**0.99 (0.93)**	**1.16 (0.57)**
Practicing pharmaceutical care is more rewarding than traditional (i.e., dispensing-focused) pharmacy practice	1.06 (0.99)	1.3 (0.90)
Pharmaceutical care is not revolutionizing the practice of pharmacy. (Reverse coded)	0.43 (1.16)	0.3 (1.20)
The practice of pharmaceutical care is an obligation of all pharmacists.	0.92 (1.03)	1.1 (0.70)
Practicing pharmaceutical care does not endanger the physician-patient relationship.	1.27 (0.85)	1.3 (0.71)
Pharmaceutical care is a giant step forward in the practice of pharmacy.	1.05 (0.84)	1.2 (0.77)
The improvement of the public health does not require pharmaceutical care. (Reverse coded)	1.20 (0.80)	1.2 (0.83)
Following up on the success or failure of the drug therapy of patients is not the job of the staff in a pharmacy. (Reverse coded)	0.85 (0.89)	1.1 (0.65)
Pharmaceutical care allows all pharmacy staff to more effectively apply their knowledge than previously has been possible.	1.03 (0.81)	1.1 (0.87)
Practicing pharmaceutical care gives pharmacy greater professional status.	1.15 (0.80)	1.0 (0.81)
Pharmaceutical care is just an impressive name for the job of doing the physician's unwanted chores. (Reverse coded)	0.94 (1.05)	1.2 (0.83)

Study Item Responses:

-2 = Strongly Disagree
-1 = Disagree
0 = Neither Agree nor Disagree
1 = Agree
2 = Strongly Agree

[1]Johansen, (1999) results are for staff pharmacists and used response codes: 0 = Strongly Disagree, 1 = Disagree, 2 = Neither Agree nor Disagree, 3 = Agree, 4 = Strongly Agree. For ease of comparison, the table displays Johansen's individual item and overall scale mean statistics minus 2.

Table 3.16 Time 2 Pharmacy Service Orientation (PSO) of Current Site

	Two-Wave Respondents (n = 137) Alpha = 0.79	
	Mean (S.D.)	**Item to Total Correl.**
PSO Current Site Scale	**6.35 (2.01)**	
Orientation 1 = Product 10 = Patient	6.28 (2.04)	0.56
Focus 1 = Quantity 10 = Quality	6.41 (2.13)	0.66
Pharmacist's Work 1 = Technical 10 = Professional	6.36 (1.85)	0.68

three areas: 1) the *orientation* of the site, patient or product; 2) the *focus* of the site, quality or quantity; and 3) the nature of the *pharmacist's work,* professional or technical. These items were used to obtain respondents' Time 2 assessments of their current worksite. When compared to the Time 1 descriptions of the most recent site worked for pay (Table 3.10), this scale performs very similarly with virtually the same Alpha (Time 1 Alpha = 0.78; Time 2 Alpha = 0.79), as well as mean and standard deviation (Time 1, mean = 6.38, s.d. = 2.33; Time 2 mean = 6.35, s.d. = 2.01).

Table 3.17 presents descriptive statistics and Cronbach's Alpha for a second attribute of the Time 2 worksite, the Organization of Work scale. This scale, of original construction, measured respondent description of how well work is organized at their current Time 2 site. Respondents were asked to respond to a series of items describing the organization of work at their site along a five-point scale from -2 (strongly disagree) to +2 (strongly agree). This scale originally contained 14 items but was trimmed to the eight items presented based on factor analysis and reliability assessment. The eight items retained and presented for this scale loaded on a single factor with an Eigenvalue of 3.36 that explained 42% of the variance.

Size and Workload

Respondents were asked to report the following information about their worksite at Time 2: number of prescriptions dispensed per week (for community or outpatient pharmacies), the average daily patient census (for hospital inpatient pharmacy), the total number of hours their pharmacy is open each week, and the number of full-time and part-

Table 3.17 Time 2 Current Site: Organization of Work

	Two-Wave Respondents (n = 130) Alpha = 0.80	
	Mean (S.D.)	**Item to Total Correl.**
Organization of Work Scale	**0.38 (1.13)**	
The level of pharmacist staffing is adequate to meet our patient care needs.	0.15 (1.28)	0.49
Pharmacy technicians create more work for me than they save. (Reverse coded)	0.86 (1.02)	0.51
The staff in my pharmacy works on how to make our work flow more smoothly.	0.48 (1.14)	0.53
The number of technicians on duty usually is sufficient to meet patient care needs.	0.15 (1.18)	0.48
My pharmacy has less than adequate administrative support (for example: support for inventory control and ordering, scheduling and computer upgrades). (Reverse coded)	0.18 (1.08)	0.37
The pharmacy technicians are competent and well-trained for their jobs.	0.43 (1.12)	0.59
The flow of work in my pharmacy is very well-organized.	0.17 (1.13)	0.63
Pharmacy technicians understand the difference between their work and the pharmacist's.	0.62 (1.11)	0.46

Item Responses:

-2 = Strongly Disagree
-1 = Disagree
0 = Neither agree nor disagree
1 = Agree
2 = Strongly Agree

time pharmacists employed at the site. From this information, two variables (Size and Workload) were calculated as follows. Workload is the z-score of the number of prescriptions per pharmacist per hour (for community pharmacies) or the number of patients per pharmacist (for institutional pharmacies). Size is the z-score of the weekly prescription total (for community pharmacies) or the average daily census (for institutional pharmacies). Z-scores were used to because a common unit of measurement was needed when measuring both number of prescriptions and number of patients. Also, the distributions of the raw data for this information were significantly skewed and conversion to a z-score made them more useful (more normally distributed).

Time 2 Normative Belief in Participation in Decision-Making: Desired Control

Respondent desire for participation in workplace decision making was assessed again at Time 2. Table 3.18 presents the descriptive statistics and Cronbach's Alpha for this scale. Again, this scale proved reliable and fairly consistent with Time 1 Desired Control (T1 mean = 3.06, Alpha = 0.89; T2 mean = 3.08, Alpha = 0.87). When compared to the equivalent measure from Time 1 (Table 3.11), very little change occurred in the aggregate from Time 1 to Time 2. Respondents' desire for control still averages over 3.0 on a 0 to 4 scale. Bivariate analysis in the next chapter will examine the degree to which Time 1 and Time 2 responses correlate at the individual respondent level.

Time 2 Perceived Participation in Decision-Making: Perceived Control

Table 3.19 presents the descriptive statistics and Cronbach's Alpha for this scale. With their responses to these items, respondents drew a rather clear distinction between their

Table 3.18 Time 2 Normative Belief in Workplace Decision-making (Desired Control)

	Two-Wave Respondents (n = 131) Alpha = 0.87	
*How much "say" do you think pharmacists **should** have in the following areas of the job?*	**Mean (S.D.)**	**Item to Total Correl.**
Desired Control Scale	**3.08 (0.94)**	
The way work is done	3.63 (0.53)	0.36
Keeping track of quality	3.45 (0.69)	0.46
How fast work is done	3.46 (0.66)	0.44
How much work pharmacy staff should do in a day	3.24 (0.76)	0.48
Who should do what job in your pharmacy	3.38 (0.79)	0.65
When work day begins and ends	2.62 (1.13)	0.52
Who should be fired if they do a bad job or don't come to work	2.88 (1.16)	0.70
Who should be hired to work in your pharmacy	3.08 (1.04)	0.73
Handling complaints or grievances	2.82 (1.03)	0.62
Who gets promoted	2.50 (1.19)	0.71
The use of new technology	3.20 (0.85)	0.64
The selection of your supervisor	2.63 (1.12)	0.44
Item Responses: 0 = None 1 = Little 2 = Some 3 = Quite a Bit 4 = Very Much		

Table 3.19 Time 2 Perceived Control

	Two-Wave Respondents (n = 130) Alpha = 0.86	
*How much "say" do you **actually** have in the following areas of your job?*	**Mean (S.D.)**	**Item to Total Correl.**
Perceived Control Scale	**1.73 (1.11)**	
The way work is done	2.58 (0.89)	0.61
Keeping track of quality	2.62 (0.93)	0.53
How fast work is done	2.23 (1.12)	0.51
How much work pharmacy staff should do in a day	1.75 (1.09)	0.56
Who should do what job in your pharmacy	2.29 (1.05)	0.59
When work day begins and ends	0.94 (1.13)	0.44
Who should be fired if they do a bad job or don't come to work	1.31 (1.23)	0.62
Who should be hired to work in your pharmacy	1.58 (1.29)	0.60
Handling complaints or grievances	2.35 (1.20)	0.50
Who gets promoted	1.06 (1.15)	0.54
The use of new technology	1.48 (1.20)	0.51
The selection of your supervisor	0.65 (0.92)	0.38
Item Responses: 0 = None 1 = Little 2 = Some 3 = Quite a Bit 4 = Very Much		

Desired Control and their Perceived Control. Compared to Desired Control, Perceived Control averaged 1.35 less on a scale from 0 to 4, (mean = 1.73, Alpha = 0.86). This indicates that respondents feel that they have less control over decisions affecting their work than they expect (or desire) to have. Comparison of the instrument performance information presented above to the Graham and Verma (1991) results is possible only for the participation gap variable (Desired Control minus Perceived Control) as their study presented neither individual item performance nor values for the Desired Control and Perceived Control variables. Graham and Verma (1991) studied employees at a Fortune 500 company that manufactures high-technology engineering products and found the following for the participation gap scale: n = 571, mean = 1.26, s.d. = 0.89, and Cronbach's Alpha = 0.86. For the present study, except for "n", these values are very similar: n = 130, mean = 1.35, s.d. = 1.17, and Cronbach's Alpha = 0.80. No other studies using this measure subsequent to Graham and Verma (1991) were found in the literature.

3.7.3 Dependent Variable: Organizational Commitment

Commitment to the current employer at Time 2 was measured using the Organizational Commitment Questionnaire (OCQ, Porter et al., 1974, 1979). Table 3.20 presents the descriptive statistics and Cronbach's Alpha for this scale. The reliability for the 12-item scale retained for analysis is very good (Alpha = 0.94) and the distribution of item responses is normal (mean = 0.94, s.d. = 1.56). Originally comprised of 15 items, only 12 items are retained for subsequent analysis. This decision was based on factor analysis that

Table 3.20 Organizational Commitment

Two-Wave Respondents (n = 131) Alpha = 0.94	**Mean (S.D.)**	**Item to Total Correl.**
Organizational Commitment Scale	**0.87 (1.56)**	
I am willing to put in a great deal of effort beyond what is normally expected. **(Item dropped from analysis)**	1.95 (1.06)	0.33
I talk up this organization to friends as a great one to work for.	0.91 (1.73)	0.82
I feel very *little* loyalty to this organization. (Reverse coded)	1.05 (1.66)	0.72
I would accept almost type of job assignment in order to work for this organization. **(Item dropped from analysis)**	-1.20 (1.50)	0.39
I find that my values and this organization's values are very similar.	0.49 (1.57)	0.74
I am proud to tell others that I am a part of this organization.	1.15 (1.46)	0.85
I could just as well be working for a different organization as long as the type of work is similar. (Reverse coded). **(Item dropped from analysis)**	-0.51 (1.46)	0.25
This organization really inspires the very best in me in the way of job performance.	0.45 (1.48)	0.80
It would take very little change in my present circumstances to cause me to leave this organization. (Reverse coded)	0.82 (1.57)	0.55
I am extremely glad that I chose this organization over others I was considering at the time I joined.	1.08 (1.49)	0.86
There's *not* too much to be gained by sticking with this organization indefinitely. (Reverse coded)	0.88 (1.58)	0.53
I often find it difficult to agree with this organization's policies on important matters relating to its employees. (Reverse coded)	0.37 (1.63)	0.73
I really care about the fate of this organization.	1.03 (1.45)	0.58
For me, this is the best of all possible organizations for which to work.	0.27 (1.72)	0.82
Deciding to work for this organization was a definite *mistake* on my part. (Reverse coded)	1.89 (1.38)	0.77

-3 = Strongly Disagree
-2 = Moderately Disagree
-1 = Slightly Disagree
0 = Neither Agree nor disagree
3 = Strongly Agree
2 = Moderately Agree
1 = Slightly Agree

revealed cross-loading of factors on items A, D and G (indicated as dropped in Table 3.20) and a two-factor solution. The 12 items retained had an Eigenvalue of 7.78 and explained 51.6% of the variance. The second factor had an Eigenvalue of 1.11 and explained only an additional 7.4% of the variance with the three dropped items loading most heavily on it. Not surprisingly, it is these three items that had the lowest item-to-total correlation in the reliability analysis. Comparison of these three items to the 12 items retained reveals a different focus: items dropped involve work effort or job assignments, while the other 12 items have to do with the extent to which respondents identify with the organization and share its values.

3.8 Plan for Analysis

The scales presented in this chapter are converted to variables for use in the analyses that follow in Chapters 4 and 5. In each chapter, relevant univariate statistics are provided and described. Chapter 4 presents bivariate and multivariate analyses of Time 1 results for the statistical prediction of desired participation in decision making (Desired Control). Chapter 5 follows with bivariate and multivariate analyses of Time 2 data for the statistical prediction of Time 2: 1) Desired Control, 2) Perceived Control, and 3) Organizational Commitment.

Chapter 4. TIME 1 RESULTS

4.1 Introduction

In this chapter I examine respondents' Time 1 desires for workplace decision-making (Desired Control) and two sets of predictor variables: 1) Personal Attributes (Professional Orientation and Work-related Preferences); and 2) Site Attributes (Pharmacy Service Orientation, or "PSO"). For each of the following sections, corresponding tables of results are presented.

4.2 Predictors of Time 1 Desired Control

Before addressing relationships statistically predicting Desired Control, it is necessary to present the univariate distributions of Desired Control and its predictor variables. Results are presented for both Single-Wave and Two-Wave Respondents. The Two-Wave Respondents group is used for all analyses, discussion and conclusions that follow in Chapters 5 and 6.

4.2.1 Univariate Results

Tables 4.1 and 4.2 present descriptive statistics for Time 1 Desired Control and its predictor variables for Single-Wave Respondents and Two-Wave Respondents, respectively. The PSO Site Worked for Academic Credit had a higher value as coded when comparing the PSO Site Worked for Pay to the PSO Site Worked for Academic Credit variables. Though

Table 4.1 Descriptive Statistics Predictors of Time 1 Desired Control – Single-Wave Respondents

Variable	N	Minimum	Maximum	Mean	Std Dev	Skewness (S.E.)
Work-related Preferences						
Quality of Patient Relationships	259	1.00	10.00	7.49	1.78	-1.14 (0.15)
Intensity of Work Demands	259	1.50	10.00	5.61	1.90	0.26 (0.15)
Allocation of Time	259	1.00	10.00	7.83	1.91	-0.83 (0.15)
Site Attributes						
PSO[1] Site Worked for Pay	245	1.50	10.00	6.37	1.94	-0.27 (0.16)
PSO Site Worked for Academic Credit	233	1.00	10.00	7.65	2.02	-1.37 (0.16)
Professional Orientation						
Self-regulation	258	-2.00	2.00	0.12	0.73	-0.09 (0.15)
Autonomy	258	-1.00	2.00	0.87	0.60	-0.09 (0.15)
Desired Control	253	1.50	4.00	3.07	0.55	-0.37 (0.15)

[1]PSO = Pharmacy Service Orientation.

Table 4.2 Descriptive Statistics: Predictors of Time 1 Desired Control – Two-Wave Respondents

Variable	N	Minimum	Maximum	Mean	Std. Dev.	Skewness (S.E.)
Work-related Preferences						
Quality of Patient Relationship	138	1.67	10.00	7.39	1.85	-1.19 (0.21)
Intensity of Work Demands	138	2.50	10.00	5.73	1.75	0.19 (0.21)
Allocation of Time	138	2.50	10.00	7.92	1.83	-0.82 (0.21)
Site Attributes						
PSO[1] Site Worked for Pay	136	1.50	10.00	6.38	1.90	-0.42 (0.21)
PSO Site Worked for Academic Credit	135	1.00	10.00	7.62	2.08	-1.56 (0.21)
Professional Orientation						
Self-regulation	137	-2.00	2.00	0.13	0.72	-0.29 (0.21)
Autonomy	137	-1.00	2.00	0.83	0.60	-0.12 (0.21)
Desired Control	136	1.50	4.00	3.05	0.58	-0.23 (0.21)

[1]PSO = Pharmacy Service Orientation.

none of the distributions of the predictor variables is severely skewed, the PSO Worked for Academic Credit variable shows a more left-skewed distribution, with a mean of 7.62 (sd = 2.08) and a -1.56 skewness compared to PSO Worked for Pay (mean = 6.38, sd = 1.90, skewness -0.42). So, when comparing the means of these two site description variables a more conservative nonparametric test was run in addition to a t-test. The differences in these ratings was highly significant for both tests (Paired Samples t-test, 2-tailed, $p < 0.01$ and Wilcoxon Paired Sign Ranks Test, $p < 0.01$). This significantly lower PSO Worked for Pay description (mean = 6.38, sd = 1.90) indicates that Two-Wave Respondents' impressions or experiences were better in the sites where they worked for academic credit. The negative skew and higher mean of the PSO Worked for Academic Credit description indicates that, when compared to their Worked for Pay sites, these Two-Wave Respondents possibly had an overall more uniform and positive experience in the Worked for Academic Credit sites.

Desired Control averaged about 3 on a 0 to 4 scale for Two-Wave Respondents (mean = 3.05, sd = 0.58). There was no statistically significant difference between Single-Wave Respondents and Two-Wave Respondents on this measure (Independent Samples t-test, not significant). This indicates that respondent attitudes about Desired Control were fairly consistent between Single-Wave and Two-Wave Respondents.

4.2.2 Bivariate Correlations among Predictor Variables

Table 4.3 presents the bivariate relationships (Pearson Product Moment

Table 4.3 Inter-item Correlations for Time 1 Predictor Variables

		1.	2.	3.	4.	5.	6.	7.
1. Self-regulation	Pearson's r Sig. (2-tailed) N		.332** .000 258	.109 .081 258	.139* .025 258	.130* .025 258	-.077 .231 244	-.080 .223 232
2. Autonomy	Pearson's r Sig. (2-tailed) N	.236** .006 137		.228** .000 258	.060 .338 258	.099 .114 258	.030 .638 244	-.095 .150 232
3. Quality of Patient Relationships	Pearson's r Sig. (2-tailed) N	.105 .223 137	.165 .054 137		-.068 .275 259	.133* .033 259	.074 .249 245	.031 .638 233
4. Intensity of Work Demands	Pearson's r Sig. (2-tailed) N	.101 .241 137	.032 .711 137	-.082 .339 138		.181** .004 259	-.072 .264 245	-.008 .900 233
5. Allocation of Time	Pearson's r Sig. (2-tailed) N	.064 .456 137	.080 .354 137	.146 .088 138	.142 .097 138		.001 .984 245	-.042 .526 233
6. PSO Site Worked for Pay	Pearson's r Sig. (2-tailed) N	-.040 .645 135	.111 .199 135	.066 .445 136	.070 .420 136	-.068 .434 136		.044 .503 231
7. PSO Site Worked for Academic Credit	Pearson's r Sig. (2-tailed) N	-.089 .306 134	-.084 .334 134	-.038 .658 135	.127 .143 135	.032 .713 135	-.016 .855 134	

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

Single-Wave Respondents above the diagonal.
Two-Wave Respondents below the diagonal.

Correlations, 2-tailed tests) among predictor variables for Two-Wave and Single-Wave Respondents. Correlations for Single-Wave Respondents are presented above the diagonal. Correlations for Two-Wave Respondents are presented below the diagonal. The reason for examining these correlations is to see if there are relationships among respondents' Personal Attributes or Site Attributes prior to licensure.

For Two-Wave Respondents, the only significant correlation between the possible pairs is between Self-regulation and Autonomy ($r = 0.236$, 2-tailed $p < 0.01$). There are three correlations that are marginal: 1) Allocation of Time and Quality of Patient Relationships ($r = 0.146$, 2-tailed $p < 0.1$), 2) Quality of Patient Relationships and Autonomy ($r = 0.165$. 2-tailed $p < 0.1$), and 3) Allocation of Time and Intensity of Work Demands ($r = 0.142$, 2-tailed $p < 0.1$). For Single-Wave Respondents, there are three correlations significant at the 0.01 level: 1) Self-regulation and Autonomy ($r = 0.332$, 2-tailed $p < 0.01$), 2) Quality of Patient Relationships and Autonomy ($r = 0.228$, 2-tailed $p < 0.01$), and 3) Allocation of Time and Intensity of Work Demands ($r = 0.181$, 2-tailed $p < 0.01$). Three other correlations are significant at the 0.05 level: 1) Self-regulation and Intensity of Work Demands, 2) Self-regulation and Allocation of Time, and 3) Quality of Patient Relationships and Allocation of Time. Next, I examine the bivariate correlations between Time 1 predictor variables and Time 1 Desired Control.

4.2.3 Bivariate Correlations between Predictor Variables and Desired Control

Table 4.4 presents all bivariate correlations between predictor variables and Desired

Table 4.4 Correlations of Time 1 Predictor Variables with Time 1 Desired Control

	Single-Wave Respondents			Two-Wave Respondents		
	Mean (Std. Dev.)	**Skew (S.E.)**	**Correlation[1] with Time 1 Desired Control (Significance)**	**Mean (Std. Dev.)**	**Skew (S.E.)**	**Correlation[1] with Time 1 Desired Control (Significance)**
Personal Attributes: Professional Orientation						
Autonomy (Single-Wave, n = 258; Two-Wave, n = 135)	0.87 (0.60)	-0.09 (0.15)	0.27 (0.00)	0.83 (0.60)	-0.12 (0.21)	0.22 (0.01)
Self-regulation (Single-Wave, n = 258; Two-Wave, n = 135)	0.12 (0.73)	-0.09 (0.15)	0.18 (0.00)	0.13 (0.72)	-0.29 (0.21)	0.19 (0.02)
Personal Attributes: Work-related Preferences						
Quality of Patient Relationships (Single-Wave, n = 259; Two-Wave, n = 136)	7.49 (1.78)	-1.14 (0.15)	0.23 (0.00)	7.40 (1.85)	-1.19 (0.21)	0.30 (0.00)
Intensity of Work Demands (Single-Wave, n = 259; Two-Wave, n = 136)	5.61 (1.90)	0.26 (0.15)	-0.05 (0.22)	5.73 (1.75)	0.19 (0.21)	-0.01 (0.45)
Allocation of Time (Single-Wave, n = 259; Two-Wave, n = 136)	7.83 (1.91)	-0.83 (0.15)	0.20 (0.00)	7.92 (1.90)	-0.82 (0.21)	0.24 (0.00)
Site Attributes: Pharmacy Service Orientation						
PSO Site Worked for Pay (Single-Wave, n = 245; Two-Wave, n = 135)	6.37 (1.94)	-0.27 (0.16)	-0.08 (0.11)	6.38 (1.90)	-0.42 (0.21)	-0.15 (0.04)
PSO Site Worked for Academic Credit (Single-Wave, n = 233; Two-Wave, n = 133)	7.65 (2.02)	-1.37 (0.16)	-0.04 (0.28)	7.62 (2.08)	-1.56 (0.21)	-0.07 (0.21)

[1] Pearson Product Moment Correlation (r): 1-tailed test

Control for both Single-Wave and Two-Wave Respondents.

Professional Orientation

The personal attribute compared to Time 1 Desired Control is respondent attitude toward professionalism (Professional Orientation) as measured by belief in professional autonomy (Autonomy) and by belief in professional self-regulation (Self-regulation). Each of these beliefs was assessed on a five-point scale numbered from -2 to +2 (Schack and Hepler, 1979). There are positive, significant correlations with Desired Control for both Autonomy ($r = 0.22$, $p = 0.01$) and Self-regulation ($r = 0.19$, $p = 0.02$) among Two-Wave Respondents. These relationships are substantially similar in their magnitude and significance for Single-Wave Respondents. Although these correlations are positive and significant in each group, they are weak.

Next, the relationships between respondent Work-related Preferences and Desired Control are examined. Recall that these Work-related Preferences involve three basic areas: 1) the extent to which respondents prefer to have ongoing relationships with their patients (Quality of Patient Relationships); 2) whether respondents prefer to work in a high-pressure, multi-tasking or low-pressure, "one thing at a time" mode (Intensity of Work Demands); and 3) respondents' preferences for allocation of time between their work and private lives (Allocation of Time). All three measures were along a 10-point scale numbered from 1 to 10. Among Two-Wave Respondents, the correlations with Desired Control for both Quality of Patient Relationships ($r = 0.30$, $p < 0.01$) and Time Allocation ($r = 0.24$, $p < 0.01$) are positive and highly significant ($p < 0.01$). These relationships are substantially similar among

Single-Wave Respondents, though somewhat weaker. For both Two-Wave and Single-Wave Respondents, Intensity of Work Demands shows a correlation that is essentially zero.

Site Attributes

Next, I examine the bivariate relationships between respondent descriptions of the site attributes (Pharmacy Service Orientation) of their Time 1 workplaces and Desired Control. The rationale for examining these correlations is to see if there is a relationship between the descriptions of practice environments that respondents encountered prior to licensure and their expectations for (i.e., desires for) future control of the practice environment. The Pharmacy Service Orientation[3] variables used in these comparisons are those for two types of sites where respondents currently or most-recently worked prior to graduation and licensure: sites where respondents worked for pay (PSO Site Worked for Pay) and, sites where respondents worked as part of the experiential component of their pharmacy education (PSO Site Worked for Academic Credit). Table 4.4 presents the bivariate relationships (Pearson Product Moment Correlations, 1-tailed tests) between Site Attributes and Desired Control.

In examining these correlations, again we see little divergence between results for Single-Wave Respondents and Two-Wave Respondents. The correlations of PSO Site Worked for Pay ($r = -0.08$, $p = 0.11$) and PSO Site Worked for Academic Credit ($r = -0.04$,

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[3] Recall from Chapter 3 that the Pharmacy Service Orientation variables are each the mean of a three-item semantic differential scale that asked respondents to rate the orientation of their site along three, unnumbered, 10-point continua. These three continua were coded as follows: Site Focus: 1 = product, 10 = patient; Site Orientation: 1 = quantity, 10 = quality; and Pharmacist's Work: 1 = technical, 10 = professional.

$p = 0.28$) with Desired Control for Single-Wave Respondents are both essentially zero and non-significant. In the Two-Wave Respondents group, however, we see that there is a negative, significant correlation between PSO Site Worked for Pay and Desired Control ($r = -0.15$, $p < 0.05$), while the correlation with PSO Site Worked for Academic Credit remains small and non-significant ($r = -0.07$, $p = 0.21$). This weak correlation indicates that Two-Wave Respondents had no significant relationship between how they described the Pharmacy Service Orientation at their Worked for Pay environments and their Desired Control.

4.3 Multivariate Predictors of Time 1 Desired Control

Tables 4.5 and 4.6 present the multivariate relationships (Ordinary Least Squares Regression) between predictor variables and Time 1 Desired Control. Table 4.5 presents these relationships for Single-Wave Respondents. Table 4.6 presents the same relationships for Two-Wave Respondents. In each of these analyses, two separate blocks of variables are entered into the regression equation. In Model 1, only the block of variables representing Personal Attributes (Autonomy, Self-regulation, Quality of Patient Relationships, Intensity of Work Demands, and Allocation of Time) are entered. In Model 2, only the Site Attributes variables (PSO Site Worked for Pay and PSO Site Worked for Academic Credit) are entered. In Model 3, the regression is run with all variables included. The analysis that follows compares the statistically predictive power of each of these blocks of variables separately and taken together. The Single-Wave Respondents and Two-Wave Respondents

Table 4.5 Ordinary Least Squares Regression Predicting Time 1 Desired Control for Single-Wave Respondents (n = 259)

	Model 1		Model 2		Model 3	
	beta	**Sig.**	**beta**	**Sig.**	**beta**	**Sig.**
Model 1: Personal Attributes						
Autonomy	0.194	(0.00)			0.198	(0.00)
Self Regulation	0.091	(0.08)			0.082	(0.11)
Quality of Patient Relationships	0.145	(0.01)			0.152	(0.01)
Intensity of Work Demands	-0.093	(0.07)			-0.098	(0.06)
Allocation of Time	0.164	(0.00)			0.165	(0.01)
Model 2: Site Attributes						
PSO Site Worked for Pay			-0.078	(0.12)	-0.098	(0.06)
PSO Site Worked for Academic Credit			-0.035	(0.30)	-0.007	(0.45)
R		0.372		0.087		0.384
R^2		0.138		0.008		0.148
Adjusted R^2		0.121		0.001		0.121
F; d.f.(residual), d.f. (model)		7.90; 246, 5		0.87; 227, 2		5.50; 222, 7
Significance, 1-tailed		0.000		0.42		0.000

Table 4.6 Ordinary Least Squares Regression Predicting Time 1 Desired Control for Two-Wave Respondents (n = 138)

	Model 1		Model 2		Model 3	
	beta	**Sig.**	**beta**	**Sig.**	**beta**	**Sig.**
Model 1: Personal Attributes						
Autonomy	0.142	(0.05)			0.159	(0.03)
Self Regulation	0.118	(0.08)			0.101	(0.11)
Quality of Patient Relationships	0.237	(0.00)			0.249	(0.00)
Intensity of Work Demands	-0.034	(0.34)			-0.013	(0.44)
Allocation of Time	0.189	(0.01)			0.175	(0.02)
Model 2: Site Attributes						
PSO Site Worked for Pay			-0.148	(0.04)	-0.165	(0.02)
PSO Site Worked for Academic Credit			-0.072	(0.20)	-0.044	(0.29)
R	0.413		0.164		0.446	
R^2	0.171		0.027		0.199	
Adjusted R^2	0.139		0.012		0.154	
F; d.f.(residual), d.f. (model)	7.77; 129, 5		1.79; 130, 2		4.44; 125, 7	
Significance	0.00		0.09		0.000	

groups are compared in these analyses.

Model 1: Personal Attributes Only

When the Personal Attributes block of variables is entered into the regression equation (Model 1) for Single-Wave Respondents, Autonomy, Quality of Patient Relationships and Allocation of Time emerge as significant, and the strongest, predictors of Desired Control (betas = 0.194, 0.145, and 0.164, respectively). In the bivariate correlations between Personal Attributes variables, these were also the strongest predictors of Desired Control (Pearson r's = 0.27, 0.23, and 0.20, respectively). At the bivariate level, Self-regulation was also a statistically significant predictor of Desired Control ($r = 0.18$, $p < 0.01$) but here in the multivariate analysis, this relationship is only marginal (beta = 0.091, $p = 0.08$). The remaining variable, Intensity of Work Demands (beta = -0.093, $p = 0.07$) is marginal in the multivariate analysis and was not significant in the bivariate ($r = -0.05$, $p = 0.22$).

When comparing the Two-Wave Respondents to the Single-Wave Respondents group, the patterns of significance are substantially similar with two minor exceptions: 1) Autonomy makes a weaker but still significant contribution (beta = 0.142, $p = 0.05$) than it did for Single-Wave Respondents (beta = 0.194, $p < 0.01$) and 2) Quality of Patient Relationships is a somewhat stronger predictor for the Two-Wave Respondents (beta = 0.237, $p < 0.01$) versus the Single-Wave Respondents (beta = 0.145, $p < 0.01$). Three percent more of the variance is explained by Personal Attributes for the Two-Wave Respondents ($R^2 = 0.171$, $p < 0.01$) than for the Single-Wave Respondents ($R^2 = 0.138$,

$p < 0.01$). Overall, Personal Attributes appear to have some statistically predictive power in explaining Time 1 Desired Control.

Model 2: Site Attributes Only

For Model 2, the Personal Attributes variables are removed from the regression equation and Site Attributes added. Only the Pharmacy Service Orientation (PSO) of the site where respondents worked for pay emerges as statistically significant and only for the Two-Wave Respondents (beta = -0.148, $p < 0.05$). This is consistent with the bivariate prediction where only PSO Site Worked for Pay was significant and only for Two-Wave Respondents ($r = -0.15$, $p < 0.05$). In the Single-Wave Respondents group, neither of these variables had a significant beta or Pearson correlation. In either case, Site Attributes demonstrate little statistically predictive power in explaining Time 1 Desired Control with only 2.7% of the variance explained for the Two-Wave Respondents ($R^2 = 0.027$, $p = 0.09$) and less than one percent explained for the Single-Wave Respondents ($R^2 = 0.008$, $p = 0.42$). In neither case are the overall results significant.

Model 3: All Variables Included

In Model 3, all Personal Attribute and Site Attribute variables are entered in the regression model. Consistent with the observations of statistically predictive power for Models 1 and 2, only the betas for Autonomy (beta = 0.159, $p < 0.05$), Quality of Patient Relationships (beta = 0.249, $p < 0.01$), Allocation of Time (beta = 0.175, $p = 0.02$) and PSO Site Worked for Pay (beta = -0.165, $p = 0.02$) contribute significantly to predicting Desired

Control for Two-Wave Respondents. Again, these relationships are consistent with bivariate predictions of Time 1 Desired Control shown in Table 4.4. These relationships are substantially similar for Single-Wave Respondent results shown in Table 4.5, with two minor exceptions: 1) the coefficient for PSO Site Worked for Pay is significant for the Two-Wave Respondents (beta = -0.165, p = 0.02) while it is marginal for Single-Wave Respondents (beta = -0.098, p = 0.06), and 2) Intensity of Work Demands (beta = -0.013, p = 0.44) for Two-Wave Respondents is non-significant while for Single-Wave Respondents it is marginal (beta = -0.098, p = 0.06). This is relatively consistent with the bivariate analysis where Intensity of Work Demands was not significant for either Single-Wave Respondents (r = -0.05, p = 0.22) or Two-Wave Respondents (r = -0.01, p = 0.45).

Compared to Model 1, little explanatory power is gained by the addition of Site Attributes in Model 3 for either respondent group (Two-Wave Respondents $R^2 = 0.199$, $p < 0.01$ and Single-Wave $R^2 = 0.148$, $p < 0.01$). It is interesting to note, however, the direction of the limited statistically predictive power for the PSO Worked for Pay variable. Desired Control goes up when the description of the site PSO goes down, consistent with the bivariate correlation (r = -0.15, $p < 0.05$). Nonetheless, it is clearly the Personal Attributes variables that are mostly responsible for the predictive power of this equation.

Fitted Model for Two-Wave Respondents

In the Fitted Model presented in Table 4.7, only those variables that had significant betas in earlier regressions are included. In all models run, the variables Autonomy, Quality

Table 4.7 Fitted Ordinary Least Squares Regression Predicting Time 1 Desired Control for Two-Wave Respondents (n = 138)

	Fitted Model	
	beta	**Sig.**
Fitted Model		
Autonomy	0.186	(0.01)
Quality of Patient Relationships	0.259	(0.00)
Allocation of Time	0.174	(0.02)
Pharmacy Service Orientation (PSO) Site Worked for Pay	-0.173	(0.02)
R		0.432
R^2		0.187
Adjusted R^2		0.162
F; d.f.(residual), d.f. (model)		7.46; 130, 4
Significance		0.00

of Patient Relationships, Allocation of Time and PSO Worked for Pay were significant predictors of Desired Control; as expected, they remain significant in the Fitted Model. Quality of Patient Relationships (beta = 0.259, $p < 0.01$) remains the strongest individual predictor of Desired Control. Next in descending order of contribution to the Fitted Model's explanatory power are Autonomy (beta = 0.186, $p < 0.01$), Allocation of Time (beta = 0.174, $p = 0.02$), and PSO Worked for Pay (beta = -0.173, $p = 0.02$). With an $R^2 = 0.187$ ($p < 0.01$) the Fitted Model provides the most parsimonious prediction of Desired Control of all the models tested.

Chapter 5. TIME 2 RESULTS

5.1 Introduction

The purpose of this chapter is to examine predictors and outcomes of workplace control among new pharmacy graduates who have transitioned into positions as licensed pharmacists. After presenting descriptive result for study variables, I explore the relationships between groups of Time 2 predictor variables (Personal Attributes and Site Attributes) and control of workplace variables (Desired Control and Perceived Control). I then examine how these predictor variables and control of workplace variables combine in the statistical prediction of organizational commitment for new pharmacists.

The areas examined in this chapter are Bivariate Correlations between Time 1 and Time 2 Variables (Section 5.2), Predictors of Time 2 Desired Control (Section 5.3), Predictors of Time 2 Perceived Control (Section 5.4) , and Predictors of Organizational Commitment (Section 5.5). Starting with section 5.3, each section begins with a presentation of univariate results for the variables to be examined. Then, I present bivariate relationships between variables. Each section concludes with a multivariate analysis.

5.2 Bivariate Correlations between Time 1 and Time 2 Variables

Table 5.1 presents the correlations between Time 1 and Time 2 variables. Significant correlations are discussed below. For Quality of Patient Relationships (Time 1) the only significant correlations with Time 2 variables are with Pharmaceutical Care Attitudes

Table 5.1. Correlations between Time 1 and Time 2 Variables

Time 2 Variables → / ↓ Time 1 Variables		Self-Regulation	Autonomy	PSO Current Site	Organization of Work	P-Care Attitudes	Size	Workload	Desired Control Time 2	Perceived Control Time 2`	Organizational Commitment
Self-regulation	Pearson's r	.457	.260	-.126	.059	-.041	.119	-.137	.129	-.032	.018
	Sig. (1-tail)	.000	.001	.073	.254	.319	.097	.072	.068	.357	.420
	N	134	134	136	129	135	120	115	134	134	132
Autonomy	Pearson's r	.230	.601	-.079	-.086	.181	-.009	-.147	.188	-.057	-.042
	Sig. (1-tail)	.004	.000	.181	.167	.018	.460	.059	.015	.257	.315
	N	134	134	136	129	135	120	115	134	134	132
Quality of Patient Relationships	Pearson's r	.099	.105	.012	-.012	.150	.007	-.063	.210	.046	.069
	Sig. (1-tail)	.127	.112	.444	.446	.041	.470	.250	.007	.299	.215
	N	135	135	137	130	136	121	116	135	135	133
Intensity of Work Demands	Pearson's r	.186	-.039	-.165	-.095	-.071	-.074	.115	-.146	-.076	-.067
	Sig. (1-tail)	.015	.328	.027	.140	.206	.210	.109	.045	.191	.222
	N	135	135	137	130	136	121	116	135	135	133
Allocation of Time	Pearson's r	.175	-.061	-.110	-.020	-.095	.010	-.003	.118	.056	.033
	Sig. (1-tail)	.021	.242	.101	.410	.137	.455	.488	.087	.261	.354
	N	135	135	137	130	136	121	116	135	135	133
PSO Site for Pay	Pearson's r	-.138	-.006	.354	.165	.132	-.073	.011	-.083	.106	.117
	Sig. (1-tail)	.057	.471	.000	.031	.064	.214	.456	.173	.113	.092
	N	133	133	135	128	134	119	114	133	133	131
PSO Site for Academic Credit	Pearson's r	.006	-.221	-.100	-.039	.091	.084	-.006	-.068	-.008	.009
	Sig. (1-tail)	.472	.006	.125	.333	.150	.184	.474	.219	.465	.461
	N	132	132	134	127	133	118	113	132	132	130
Desired Control Time 1	Pearson's r	.052	.236	.018	.066	.061	.059	.049	.569	.181	.131
	Sig. (1-tail)	.277	.003	.417	.231	.242	.263	.303	.000	.019	.068
	N	133	133	135	128	134	119	114	133	133	131

($r = 0.150$, $p < 0.05$) and with Time 2 Desired Control ($r = 0.210$, $p = 0.007$). These correlations indicate that the desire for high quality relationships with patients and a positive attitude toward pharmaceutical care at Time 1 vary positively with the desire for control in the workplace at Time 2.

Next, Intensity of Work Demands at Time 1 varies positively with Self-regulation at Time 2 ($r = 0.186$, $p = 0.015$). This correlation likely indicates that respondents whose preferences for intense work demands also believe in little outside interference professionally. Intensity of Work Demands correlates negatively with both the Pharmacy Service Orientation (PSO) of the Current Site ($r = - 0.165$, $p = 0.027$) and with Time 2 Desired Control ($r = -0.146$, $p < 0.05$). These correlations indicate that the greater a respondent's preference for lower intensity of the work demands, the more positive their description of the Pharmacy Service Orientation (PSO) of their Time 2 worksite (PSO Current Site) and the more they desire to have control in that worksite. The only significant correlation between Allocation of Time at Time 1 and a Time 2 variable is with Self-regulation ($r = 0.175$, $p = 0.21$). This correlation indicates that respondents with a greater preference for control over their personal time also expect to experience less outside professional interference at Time 2.

Both Self-regulation and Autonomy at Time 1 correlate positively with Self-regulation and Autonomy at Time 2. These relationships indicate consistency of attitude toward these constructs from Time 1 to Time 2. Autonomy at Time 1 also correlates positively with Pharmaceutical Care Attitudes ($r = 0.181$, $p = 0.018$) and with Desired

Control at Time 2 ($r = 0.188$, $p = 0.015$). These correlations indicate that respondents who expressed a greater belief in professional autonomy at Time 1 also exhibited a more positive attitude toward pharmaceutical care and a greater desire for workplace control at Time 2. Further, there is moderate support for the relationship between Time 1 Autonomy and Time 2 Workload ($r = -0.147$, $p = 0.059$). This weak relationship suggests that Two-Wave Respondents who expressed a more positive belief in professional autonomy at Time 1 work in sites at Time 2 with slightly lower workload.

The Time 1 description of the Pharmacy Service Orientation where respondents worked for pay (PSO Site Worked for Pay) correlates positively and significantly with PSO Current Site ($r = 0.354$, $p < 0.001$) and with Organization of Work ($r = 0.165$, $p = 0.031$). These relationships suggest that respondents work in sites at Time 2 that are similar in their professional orientation to those worked at for pay before graduation. The Time 1 descriptions of the sites where respondents worked for academic credit prior to graduation (PSO Site Worked for Academic Credit) significantly correlate (negatively) only with the Time 2 Autonomy indicating that the lower the description of the Pharmacy Service Orientation of the Site Worked for Academic Credit, the greater the Time 2 belief in professional autonomy.

There are three positive, significant relationships between Time 1 Desired Control and Time 2 variables. Not surprisingly, these relationships are with Autonomy ($r = 0.236$, $p < 0.01$), Time 2 Desired Control ($r = 0.569$, $p < 0.001$) and with Perceived Control ($r = 0.181$, $p < 0.02$). These relationships indicate first of all that the desire for control in the

workplace remains fairly consistent from Time 1 to Time 2. Further, the desire for workplace control at Time 1 is consistent with a belief in professional autonomy and with Perceived Control at Time 2. Receiving only moderate support is the relationship between Time 1 Desired Control and Organizational Commitment at Time 2 ($r = 0.131$, 1-tailed $p = 0.068$) indicating that a desire for workplace control at Time 1 varies slightly positively with commitment to the employing organization at Time 2.

5.3 Predictors of Time 2 Desired Control

This section begins with an examination of the descriptive statistics for variables predicting Time 2 Desired Control (Univariate Results) and concludes with bivariate and multivariate analyses of the relationships between predictor variables and Time 2 Desired Control.

5.3.1 Univariate Results

Table 5.2 presents descriptive statistics for Time 2 Desired Control and its predictor variables for Two-Wave Respondents. When comparing the Time 1 and Time 2 measures, the means and standard deviations of Time 1 and Time 2 Self-regulation are very close to one another (Time 1 mean = 0.13, sd = 0.72; Time 2 mean = 0.28, sd = 0.83). There is a significant difference when they are compared (Paired Samples t-test, 2-tailed $p < 0.05$), with paired comparisons indicating a lower rating by individual respondents at Time 1. The comparison of Autonomy between Time 1 and Time 2 revealed no significant difference

Table 5.2 Descriptive Statistics for Predictors of Time 2 Desired Control – Two-Wave Respondents

Variable	N	Minimum	Maximum	Mean (Std. Dev.)	Skewness (S.E.)
Self-regulation	135	-1.80	2.00	0.28 (0.83)	-0.09 (0.21)
Autonomy	135	-0.83	2.00	0.83 (0.60)	-0.31 (0.21)
Pharmaceutical Care Attitudes	136	-0.50	2.00	1.00 (0.55)	-0.21 (0.21)
PSO Current Site	137	1.50	10.11	6.35 (1.69)	-0.35 (0.21)
Organization of Work	130	-1.25	1.88	0.37 (0.73)	-0.28 (0.21)
Size	121	-1.29	7.59	0 (1.00)	4.21 (0.22)
Workload	116	-1.46	5.48	0 (1.00)	2.01 (0.23)
Time 1 Desired Control	136	1.50	4.00	3.05 (0.58)	-0.23 (0.21)

(Paired Samples t-test, 2-tailed $p = 0.93$). Pharmaceutical Care Attitudes, rated on a scale from -2 to +2, had a mean = 1.00, and sd = 0.55 with a distribution that did not show any significant skew (skewness = -0.35).

The PSO Current Site variable (mean = 6.35, s.d. = 1.69) appears similar to the Time 1 PSO Site Worked for Pay variable (mean = 6.38, s.d. = 1.90). Thus, the sites chosen for professional practice at Time 2 appear quite similar to the sites where respondents worked for pay prior to graduation and licensure with respect to this scale. Respondents' rating of how well work is organized at their current practice sites (Organization of Work) is close to zero on a scale from -2 to +2 (mean = 0.37, sd = 0.73) with no significant skew in this variable (skewness = -0.28). Size and Workload, though converted to z-scores (mean = 0, sd = 1.00) from the original data, are still relatively skewed (see Table 5.2).

5.3.2 Bivariate Correlations among Predictor Variables

Table 5.3 presents the bivariate relationships (Pearson Product Moment Correlations, 2-tailed tests) among predictor variables. As was the case at Time 1, Self-regulation and Autonomy are again significantly correlated ($r = 0.198$, $p < 0.05$). Autonomy is also significantly correlated with PSO Current Site ($r = 0.224$, $p < 0.01$), and with Time 1 Desired Control ($r = 0.236$, $p < 0.01$). This contrasts with the Time 1 findings where there was no significant relationship between PSO Site Worked for Pay and Autonomy (see Table 4.3). There are highly significant correlations between Pharmaceutical Care Attitudes and PSO Current Site ($r = 0.291$, $p < 0.01$) and between Organization of Work and PSO Current

Table 5.3 Correlations for Time 2 Predictor Variables: Two-Wave Respondents (n = 138)

		1.	2.	3.	4.	5.	6.	7.	8.
1. Self-regulation	Pearson's r Sig. (2-tailed) N								
2. Autonomy	Pearson's r Sig. (2-tailed) N	.198 .021 135							
3. Pharmaceutical Care Attitude	Pearson's r Sig. (2-tailed) N	.090 .301 135	-.085 .327 135						
4. PSO Current Site	Pearson's r Sig. (2-tailed) N	.224 .009 137	-.124 .154 134	.291 .001 135					
5. Organization of Work	Pearson's r Sig. (2-tailed) N	.004 .965 127	-.069 .442 127	.058 .518 128	.358 .000 129				
6. Size	Pearson's r Sig. (2-tailed) N	.012 .898 118	-.056 .546 118	.038 .681 119	-.126 .170 121	-.103 .262 120			
7. Workload	Pearson's r Sig. (2-tailed) N	-.013 .892 113	-.127 .179 113	.026 .785 114	-.002 .986 116	-.011 .911 115	.485 .000 116		
8. Time 1 Desired Control	Pearson's r Sig. (2-tailed) N	.052 .555 133	.236 .006 133	.061 .485 134	.018 .834 135	.066 .462 128	.059 .525 119	.049 .606 114	

Site ($r = 0.358$, $p < 0.01$). Finally, and not surprisingly, there is a highly significant correlation between Workload and Size ($r = 0.485$, $p < 0.01$).

5.3.3 Bivariate Relationships between Predictor Variables and Desired Control

Next, I examine the bivariate correlations between these predictor variables and Time 2 Desired Control. The reason for examining these correlations is to see if there are relationships between respondents' Time 1 Desired Control, Time 2 Personal Attributes or Time 2 Site Attributes and their Time 2 Desired Control. Table 5.4 presents the bivariate relationships (Pearson Product Moment Correlations, 1-tailed tests) between these predictor variables and Time 2 Desired Control. The first statistically significant predictor of Time 2 Desired Control presented is Time 1 Desired Control ($r = 0.57$, $p < 0.01$). The mean and standard deviation of Time 1 Desired Control (3.05, 0.58) are virtually identical to those of Time 2 Desired Control (3.09, 0.60). This similarity indicates that in the aggregate, respondent desires for participation in workplace decision-making remained substantially consistent in the six-month interval between Time 1 and Time 2.

As seen in Table 5.4, the correlations with Time 2 Desired Control for both Autonomy and Self-regulation are positive. When compared to the same correlations at Time 1, though, there is a change in the relative strength of their relationships to Desired Control (see Table 4.3). At Time 2, Autonomy correlates more strongly ($r = 0.36$, $p < 0.01$) with Desired Control than it did at Time 1 ($r = 0.22$, $p = 0.01$). For Self-regulation, the correlation with Desired Control has decreased from Time 1 ($r = 0.19$, $p = 0.02$) to a

Table 5.4 Correlations with Time 2 Desired Control

	Mean (Std. Dev.)	Skew (Std. Error)	Correlation[1] with Time 2 Desired Control (Significance)
Time 1 Desired Control			
Desired Control (n = 133)	3.05 (0.58)	-0.23 (0.21)	0.57 (0.00)
Personal Attributes			
Self-regulation (n = 134)	0.28 (0.83)	-0.09 (0.21)	0.13 (0.07)
Autonomy (n = 134)	0.83 (0.60)	-0.31 (0.21)	0.36 (0.00)
Pharmaceutical Care Attitudes (n = 135)	1.00 (0.55)	-0.21 (0.21)	0.09 (0.15)
Site Attributes			
PSO Current Site (n = 134)	6.35 (1.69)	-0.35 (0.21)	0.04 (0.32)
Organization of Work (n = 128)	0.37 (0.73)	-0.28 (0.21)	0.07 (0.23)
Size[2] (n = 118)	0.00 (1.00)	4.21 (0.22)	-0.14 (0.06)
Workload[3] (n = 113)	0.00 (1.00)	2.01 (0.23)	-0.01 (0.48)

[1] Pearson Product Moment Correlation (r): 1-tailed test

[2] Size = z-score of weekly Rx total [community] OR of patient census [institutional]

[3] Workload = z-score of Rxs/Pharmacist /Hour for community OR Patients/Pharmacist for institutional

weaker, non-significant correlation at Time 2 ($r = 0.13$, $p = 0.07$). This trend may indicate that as respondents have gained some experience in their practice roles as pharmacists, they tended to equate non-interference with their workplace autonomy more so with the desire for participation in workplace decision-making.

The next Time 2 variable presented is Pharmaceutical Care Attitudes. This variable is derived from a scale of items that assessed respondents' views about Pharmaceutical Care (Johansen, 1999). The Pharmaceutical Care variable is the mean of responses to items on a five-point scale numbered from -2 to +2. The scale assessed respondent attitudes about how they believe the pharmaceutical care paradigm is actually related to pharmacy practice as they understand it. With a mean of 0.91 (s.d. = 0.42), respondents were fairly positive in their views about pharmaceutical care. Yet, there was no significant correlation between Pharmaceutical Care and Time 2 Desired Control ($r = -0.02$, $p = 0.42$). This non-relationship provides little support for the notion that pharmacists who view pharmaceutical care positively would also have a greater desire for participation in workplace decision-making. One interpretation of this relationship is that there is no relationship between valuing the pharmaceutical care paradigm and desire for control of the work environment where this practice model could be incorporated.

Next in Table 5.4 are the correlations between the Site Attributes variables and Time 2 Desired Control. PSO Current Site ($r = 0.04$, $p = 0.32$) and Organization of Work ($r = 0.07$, $p = 0.23$) were not significantly correlated with Time 2 Desired Control, indicating no relationship between these two variables and a desire for workplace control through

participation in decision-making. Last among the relationships with Time 2 Desired Control are measures of Workload and Size of practice site. Of these two correlations, only the correlation between Size and Desired Control is close to being significant ($r = -0.14$, $p = 0.06$). *The distributions of the these variables are significantly skewed, violating the* assumption of normality essential to a meaningful interpretation of the Pearson Product Moment statistic. Because these distributions are not normal, the less rigorous but more appropriate Spearman's Rho was also calculated (not shown in Table 5.1). Spearman's Rho is a nonparametric correlation coefficient calculated based on rank order of the data. Spearman's Rho and (significance) for the Workload and Size variables are as follows: for Workload, rho = 0.02 (1-tailed p = 0.41); for Size, rho = -0.12 (1-tailed p = 0.11). Because neither of these Spearman's correlations is significant, there is no relationship between Time 2 Desired Control and either workload or size of pharmacy. Thus, little support is given to the view that somehow pharmacists who experience high workload or who work in large pharmacies would be more likely to expect or desire control of their practice circumstances.

5.3.4 Multivariate Analysis Predicting Time 2 Desired Control

In this section, the regression equations presented in Table 5.5 are discussed. In this analysis, with Time 2 Desired Control as the dependent variable, blocks of independent variables are entered into and removed from the equations to examine what areas posited by this study's research questions best explain Desired Control at Time 2. These areas are Time 1 Desired Control, Personal Attributes (Autonomy, Self-regulation, and

Table 5.5 Ordinary Least Squares Regression Predicting Time 2 Desired Control

	Model 1		Model 2		Model 3		Model 4	
	beta	**Sig**	**beta**	**Sig**	**beta**	**Sig**	**beta**	**Sig**
Model 1: Time 1 Desired Control	0.569	(0.00)					0.515	(0.00)
Model 2: Personal Attributes								
Autonomy			0.352	(0.00)			0.230	(0.00)
Self Regulation			0.051	(0.27)			0.064	(0.22)
Pharmaceutical Care Attitude			0.082	(0.16)			0.033	(0.34)
Model 3: Site Attributes								
PSO Current Site					0.001	(0.50)	0.034	(0.35)
Organization of Work					0.049	(0.32)	0.015	(0.43)
Size					-0.176	(0.06)	-0.203	(0.01)
Workload					0.080	(0.23)	0.097	(0.13)
R	0.569		0.369		0.167		0.644	
R^2	0.324		0.136		0.028		0.415	
Adjusted R^2	0.318		0.116		-0.008		0.370	
F; d.f. (residual), d.f. (model)	62.67; 131, 1		6.81; 130, 3		0.77; 108, 4		9.22; 104, 8	
Significance	0.000		0.000		0.545		0.000	

Pharmaceutical Care Attitude), and Site Attributes (PSO Current Site, Organization of Work, Size and Workload).

Model 1: Time 1 Desired Control

This model provides no new information over what was discussed in Section 5.3.3 in the bivariate analysis. The R value of 0.569 ($p < 0.01$) is the Pearson Product Moment correlation. Explaining 32.4% of the variance in predicting Time 2 Desired Control, this result indicates the stability of desire for control from Time 1 to Time 2.

Model 2: Professional Orientation

As was seen in the Chapter 4 discussion of Time 1 Desired Control predictors (Section 4.2), the Personal Attribute variable, Autonomy, remains the strongest predictor of Desired Control (beta = 0.352, $p < 0.01$). Neither Self-regulation nor Pharmaceutical Care Attitude contributed significantly to the statistical prediction of Time 2 Desired Control. Taken as a group, these variables explain 13.6% of the variance ($R^2 = 0.136$), very similar to the 13.8% of the variance explained by Personal Attributes in the prediction of Time 1 Desired Control but with two fewer variables (see Table 4.5).

The variance explained by this group of variables is statistically significant ($F = 6.81$; d.f. = 130, 3; $p < 0.01$). The Personal Attributes variable group does, however, explain almost 19% less variance than does Time 1 Desired Control.

Model 3: Site Attributes

Among the Site Attributes variables, the only variable that is even suggestive of predicting (negatively) Time 2 Desired Control is Size (beta = -0.176, $p = 0.06$). This

relationship suggests that respondents in larger practice sites desire less control. Neither PSO Current Site, Organization of Work, nor Workload have any predictive association with Time 2 Desired Control. Taken as a group, Site Attributes is not a statistically significant predictor of Time 2 Desired Control ($F = 0.77$; d.f. = 108, 4; $p = 0.55$) with only 2.8% of the variance explained ($R^2 = 0.028$).

Model 4: All Variables Included

When Time 1 Desired Control, Professional Orientation and Site Attributes are all included in the regression equation (Model 4), Time 1 Desired Control beta remains relatively unchanged (beta = 0.515, $p < 0.01$) when compared to that of Model 1 (beta = 0.569, $p < 0.01$). Again, both Autonomy (beta = 0.23, $p < 0.01$) and Size (beta = -0.203, $p = 0.01$) remain the only statistically significant predictors from among their respective variable groups, with Size going from suggestive to significant. This combination of all variables explains only 9.1% more variance than is explained by Time 1 Desired Control alone.

Fitted Model for Time 2 Desired Control

Table 5.6 presents the fitted model for prediction of Time 2 Desired Control. For this model, only those three variables with significant beta values in Model 4 are included in the regression equation. With $R^2 = 0.401$ ($F = 25.40$; d.f. = 114, 3; $p < 0.01$), an additional 7.7% of the variance is explained in comparison to Model 1 and only 1.4% less than when all variables are included. This model indicates that Desired Control (beta = 0.526, $p < 0.01$) remained consistent from Time 1 to Time 2. It also indicates that Autonomy (beta = 0.222,

Table 5.6 Fitted Model for Predicting Time 2 Desired Control

	Fitted Model	
	beta	**Sig.**
Fitted Model		
Time 1 Desired Control	0.526	(0.00)
Autonomy	0.222	(0.00)
Size	-0.160	(0.02)
R		0.633
R^2		0.401
Adjusted R^2		0.385
F; d.f.(residual), d.f. (model)		25.40; 114, 3
Significance		0.000

$p < 0.01$) is a statistically strong predictor of Desired Control. Size of the Time 2 worksite (beta = -0.160, $p < 0.02$) is negative predictor of Desired Control. Thus, respondents who desired greater control of the workplace at Time 1, believe in greater professional autonomy at Time 2, and who work in relatively smaller pharmacies generally desire greater participation in decisions affecting their work.

5.4 Predictors of Time 2 Perceived Control

The inter-item correlations among variables statistically predicting Perceived Control are the same as those presented for the variables predicting Time 2 Desired Control shown in Table 5.3 with two exceptions: 1) Time 1 Desired Control is not among the predictors of Perceived Control, and 2) Perceived Control is not included in the correlation matrix. Table 5.7 presents all correlations between predictor variables and Perceived Control.

5.4.1 Bivariate Relationships between Predictor Variables and Perceived Control

With one exception, Table 5.7 contains all the same predictor variables seen in Table 5.3 in its presentation of the bivariate relationships (Pearson Product Moment Correlations, 1-tailed tests) between predictor variables and Time 2 Perceived Control. The only difference is the addition of Time 2 Desired Control as a predictor variable.

Correlations between Professional Orientation measures and Time 2 Perceived Control show a positive, significant correlation between Autonomy and Time 2 Perceived Control ($r = 0.15$, $p = 0.05$) with no correlation between Self-regulation and Time 2 Desired

Table 5.7 Correlations with Time 2 Perceived Control

	Mean (Std. Dev.)	Skew (Std. Error)	Correlation[1] with Perceived Control (Significance)
Desired Control			
Time 2 Desired Control (n = 135)	3.09 (0.60)	0.29 (0.21)	0.50 (0.00)
Personal Attributes			
Self-regulation (n = 134)	0.28 (0.83)	-0.09 (0.21)	0.00 (0.49)
Autonomy (n = 134)	0.83 (0.60)	-0.31 (0.21)	0.15 (0.05)
Pharmaceutical Care Attitudes (n = 135)	0.91 (0.42)	-0.15 (0.21)	-0.02 (0.42)
Site Attributes			
PSO Current Site (n = 134)	6.35 (1.69)	-0.35 (0.21)	0.29 (0.00)
Organization of Work (n = 128)	0.37 (0.73)	-0.28 (0.21)	0.31 (0.00)
Size[2] (n = 118)	0.00 (1.00)	4.22 (0.22)	-0.14 (0.06)
Workload[3] (n = 113)	0.00 (1.00)	2.01 (0.23)	0.07 (0.23)

[1] Pearson Product Moment Correlation (r): 1-tailed test

[3]Workload = z-score of Rxs/Pharmacist /Hour for community OR Patients/Pharmacist for institutional

[2] Size = z-score of weekly Rx total [community] OR of patient census [institutional]

Control ($r = 0.00$, $p = 0.49$). The significant, though weak, correlation suggests that newly licensed pharmacists to some extent have selected into practice environments that share their values concerning professional autonomy. The weakness of the correlation, however, indicates that this is not consistently the case. Pharmaceutical Care Attitudes and Perceived Control show no correlation ($r = -0.02$, $p = 0.42$). This non-relationship indicates that newly licensed pharmacists' beliefs about the pharmaceutical care paradigm have no relationship to the actual control that they perceive to experience in their workplaces.

The correlations between the first two Time 2 Site Attributes variables (PSO Current Site and Organization of Work) and Time 2 Desired Control are both positive and significant. As described earlier, the PSO Current Site variable represents respondents' descriptions of their current practice sites' focus along three continua which have the anchors of product, quantity and technical at one end and anchors of patient, quality and professional, at the other end. Organization of Work is their report of how well work is organized at their site. In each case, the positive correlation indicates that respondents who describe their sites as more professional and better organized also report having a higher level of participation in decisions affecting their work. The hypothesized direction of the relationships between PSO Current Site and Perceived Control ($r = 0.29$, $p < 0.01$) and between Organization of Work and Perceived Control ($r = 0.31$, $p < 0.01$) is positive and supported here. Yet, it is reasonable to think that the causal ordering of this relationship is reversed. Pharmacists who perceive themselves as having greater participation in decision-making at their practice sites also could be likely to describe their worksites more positively.

The last among the bivariate relationships with Time 2 Perceived Control presented in Table 5.7 are the measures Workload and Size. As was described earlier, the distributions of these variables are significantly skewed. In examining the Pearson's correlation coefficient for these relationships, neither is significant and the correlation for Size is merely suggestive ($r = -0.14$, $p = 0.06$). Again, however, the assumptions of normality necessary for meaningful interpretation of the Pearson's correlation coefficient are violated. To allow for this, Spearman's Rho has again been calculated for the Workload and Size relationships with Time 2 Perceived Control. The Workload correlation remains close to zero and non-significant (rho = -0.01, $p = 0.46$). For Size, the change is more dramatic. The correlation for Size goes from being only suggestive ($r = -0.14$, $p < 0.1$) to slightly more negative and statistically significant (rho = -0.22, $p < 0.01$). These results indicate that the level of perceived participation in decision-making (Perceived Control) is independent of the workload experienced by respondents. Yet, there is a significant negative correlation between the size of a pharmacy practice site (measured as prescription volume for community sites or as patient census for institutional sites) and the level of Perceived Control experienced by Two-Wave Respondents. This interpretation is consistent with the bureaucratic tendencies of larger organizations.

5.4.2 Multivariate Analysis Predicting Time 2 Perceived Control

In this section, the regression results presented in Tables 5.8 and 5.9 are discussed. In this analysis, with Time 2 Perceived Control as the dependent variable, blocks

Table 5.8 Ordinary Least Squares Regression Results Predicting Time 2 Perceived Control

	Model 1		Model 2		Model 3		Model 4	
	beta	**Sig**	**beta**	**Sig**	**beta**	**Sig**	**beta**	**Sig**
Model 1: Workplace Control								
Time 2 Desired Control	0.497	(0.00)	0.517	(0.00)	0.463	(0.00)	0.461	(0.00)
Model 2: Personal Attributes								
Autonomy			-0.032	(0.35)			0.023	(0.39)
Self-Regulation			-0.054	(0.25)			0.001	(0.50)
Pharmaceutical Care Attitude			-0.042	(0.27)			-0.116	(0.08)
Model 3: Site Attributes								
PSO Current Site					0.182	(0.02)	0.222	(0.01)
Organization of Work					0.206	(0.01)	0.201	(0.01)
Size					-0.093	(0.15)	-0.084	(0.18)
Workload					0.121	(0.09)	0.122	(0.09)
R	0.497		0.503		0.607		0.617	
R^2	0.247		0.253		0.368		0.381	
Adjusted R^2	0.241		0.256		0.339		0.333	
F; d.f. (residual), d.f. (model)	43.55; 133, 1		10.91; 129, 4		12.46; 107, 5		8.00; 104, 8	
Significance	0.000		0.000		0.000		0.000	

of predictor variables are entered into and removed from the equation to examine what best explains Perceived Control at Time 2. These blocks of variables are Time 2 Desired Control, Personal Attributes (Autonomy, Self-regulation, and Pharmaceutical Care Attitude), and Site Attributes (PSO Current Site, Organization of Work, Size and Workload). In each of the models presented in this section, Time 2 Desired Control is not removed from the equation. This is because Time 2 Desired Control is posited to be statistically predicted by both Personal Attributes and Site Attributes which, in turn, are posited to predict respondents' Perceived Control. Desired Control also is hypothesized to predict Perceived Control. This arrangement of variables in the models allows examination of the effects of Personal Attributes and Site Attributes while controlling for Time 2 Desired Control. Figure 3 (Chapter 2) presents a visual depiction of these relationships.

Model 1: Time 2 Desired Control

This model provides the same information that was discussed Section 5.4.1 in the bivariate analysis. The R value of 0.497 ($p < 0.01$) is the Pearson Product Moment correlation. Explaining 24.7% of the variance in predicting Time 2 Perceived Control ($R^2 = 0.247$, $p < 0.01$), this result indicates a strong statistical prediction of Perceived Control.

Model 2: Professional Orientation

The addition of Personal Attributes (Autonomy, Self-regulation, and Pharmaceutical Care Attitude) provides no additional explanatory power to the equation already containing Time 2 Desired Control. With less than one additional percent of the variance explained, the

overall equation remains significant ($F = 10.91$; d.f. = 129, 4; $p < 0.01$). Of interest here is the small magnitude (almost zero) of all three beta coefficients for the Personal Attributes variables. These non-relationships may indicate respondents not being able to translate their beliefs in professional values into the reality of being involved in decisions affecting their work.

Model 3: Site Attributes

The removal of Personal Attributes and addition of Site Attributes into the regression equation produces an improvement of 12% in variance explained ($R^2 = 0.368$, $F = 12.46$; d.f. = 107,5; $p < 0.01$). Among the Site Attribute variables, only PSO Current Site (beta = 0.182, $p < 0.02$) and Organization of Work (beta = 0.206, $p < 0.01$) have coefficients that are statistically significant. Neither Size nor Workload add any further explanatory power to the equation. This situation indicates that Site Attributes having to do more with the focus, orientation, nature of the pharmacist's work, and organization of work are more important than objective measures (i.e., Size and Workload) in predicting Perceived Control.

Model 4: All Variables Included

When all the variable groups posited to predict Time 2 Perceived Control (Time 2 Desired Control, Personal Attributes and Site Attributes) are entered into the regression equation, little additional explanatory power is gained over the combination of variables used in Model 3. As was the case in Model 2, none of the Personal Attribute variables contributes significantly to the equation. Likewise, among the Site Attributes, only PSO Current Site and Organization of Work contribute. Also, the contribution of Time 2 Desired

Control remains consistent with previous iterations of the equation. So, when controlling for Time 2 Desired Control, it is the Site Attributes, (i.e. PSO Current Site and Organization of Work), that go the farthest in explaining Perceived Control.

Fitted Model for Perceived Control

Table 5.9 presents the fitted model for prediction of respondents' Perceived Control. For this model, the only three variables with significant beta values in from any and all of the four models presented are entered into the regression. With $R^2 = 0.356$ ($F = 22.85$; d.f. = 124, 3; $p < 0.01$) and only three predictor variables, this model provides a parsimonious prediction of Perceived Control. Compared to Model 4, only 2.5% less of the variance is explained by three variables as compared to the eight variables in Model 4. This fitted model indicates that pharmacists who want to participate more in decisions affecting their work and who describe their worksites more positively generally report that they have greater control through participation in decision-making in their workplaces. Personal Attributes did not enter into the equation.

5.5 Predictors of Organizational Commitment

In this section I begin by examining the Time 2 bivariate relationships between Time 2 predictor variables and Organizational Commitment. The Time 2 predictor variables examined are: 1) Personal Attributes (Autonomy, Self-regulation and Pharmaceutical Care Attitudes; 2) Site Attributes (PSO Current Site, Size and Workload); and 3) Workplace Control measures (Desired Control and Perceived Control). These relationships are

Table 5.9 Fitted Model for Perceived Control

	Fitted Model	
	beta	**Sig.**
Fitted Model		
Time 2 Desired Control	0.475	(0.00)
PSO Current Site	0.192	(0.01)
Organization of Work	0.210	(0.00)
R		0.597
R^2		0.356
Adjusted R^2		0.340
F; d.f.(residual), d.f. (model)		22.85; 124, 3
Significance		0.000

presented in Table 5.10. Multivariate regression analysis for the prediction of Organizational Commitment follows the bivariate analysis.

5.5.1 Bivariate Relationships between Predictor Variables and Organizational Commitment

The first set of variables hypothesized to predict Organizational Commitment in Table 5.10 is Personal Attributes (Autonomy, Self-regulation and Pharmaceutical Care Attitudes). The Time 2 measures of both Autonomy and Self-regulation have non-significant, almost zero, correlations with Organizational Commitment. This indicates that respondents' Organizational Commitment is not contingent upon their beliefs in professional autonomy or in professional self-regulation. However, there is a positive and significant correlation between Pharmaceutical Care Attitudes and Organizational Commitment ($r = 0.22$, $p = 0.01$). This correlation could indicate a job selection effect whereby some respondents who believe strongly in Pharmaceutical Care have chosen to work for organizations that share their values.

Presented next in Table 5.10 are the correlations between Site Attributes (PSO Current Site, Organization of Work, Workload, and Size) and Organizational Commitment. These are the same Site Attributes variables described above in Sections 5.3 and 5.4 as statistically predictive of Desired Control and Perceived Control. For PSO Current Site and Organization of Work, the correlations are positive, strong and highly significant ($p < 0.01$). With correlation coefficients of 0.47 and 0.45, respectively, PSO Current Site and Organization of Work are strong statistical predictors of Organizational Commitment.

Table 5.10 Correlations with Organizational Commitment

	Mean (Std. Dev.)	Skew (Std. Error)	Correlation[1] with Organizational Commitment (Significance)
Personal Attributes			
Self-regulation	0.28 (0.83)	-0.09 (0.21)	-0.09 (0.16)
Autonomy	0.83 (0.60)	-0.31 (0.21)	-0.06 (0.25)
Pharmaceutical Care Attitudes	0.91 (0.42)	-0.15 (0.21)	0.22 (0.01)
Site Attributes			
PSO Current Site	6.35 (1.69)	-0.35 (0.21)	0.47 (0.00)
Organization of Work	0.37 (0.73)	-0.28 (0.21)	0.45 (0.00)
Size[2]	0.00 (1.00)	4.21 (0.22)	0.08 (0.18)
Workload[3]	0.00 (1.00)	2.00 (0.23)	0.07 (0.23)
Workplace Control			
Desired Control	3.09 (0.60)	-0.29 (0.21)	0.11 (0.10)
Perceived Control	1.77 (0.72)	0.49 (0.21)	0.43 (0.00)

[1] Pearson Product Moment Correlation (r): 1-tailed test

[2] Size = z-score of weekly Rx total [community] OR of patient census [institutional]

[3] Workload = z-score of Rxs/Pharmacist /Hour for community OR Patients/Pharmacist for institutional

These relationships emphasize the influence that Site Attributes can have on Organizational Commitment. These relationships have possible implications for recruitment and retention of prospective pharmacist employees.

Although these first two Site Attributes variables play an important role in determining respondents' commitment to an employing organization, neither the Size nor Workload measures showed any significant correlations with Organizational Commitment when using the Pearson's Product Moment correlation coefficient. As discussed in Sections 5.3 and 5.4, the non-normality of the Workload and Size distributions violate the assumptions of normality inherent in a meaningful interpretation of Pearson's correlation coefficient. So, as was done in Section 5.4, the Spearman's Rho was calculated; there were no significant nonparametric correlations between either Size ($rho = -0.034$, $p = 0.36$) or Workload ($rho = -0.012$, $p = 0.451$) and Organizational Commitment. This indicates respondents' Organizational Commitment is dependent on neither the size of their practice site nor the workload they experience in it.

Last among the bivariate correlations with Organizational Commitment presented in Table 5.10 are those of Desired Control and Perceived Control. The correlation of Desired Control is slightly positive and non-significant ($r = 0.11$, $p = 0.10$). The correlation of Perceived Control is both positive and highly significant ($r = 0.43$, $p < 0.01$). Because a perception of having actual control is viewed as more proximate to commitment, this relationship indicates how important being involved in workplace decision-making is to respondents' commitment to their employing organization

In summary, the three Time 2 variables that most strongly statistically predict Organizational Commitment are PSO Current Site, Organization of Work, and Perceived Control. These relationships, absent the predictive significance of Personal Attribute and Size or Workload measures, reflect how significant the environment within which respondents practice is to their organizational commitment. Further examination of these relationships is presented in the multivariate regression analysis for the prediction of Organizational Commitment that follows in Section 5.5.2 below.

5.5.2 Multivariate Analysis Predicting Organizational Commitment

In this section, the regression equations presented in Tables 5.11 and 5.12 are discussed. In this analysis, with Organizational Commitment as the dependent variable, blocks of independent variables again are entered into and removed from the equation to examine what areas posited by this study's research questions best explain Organizational Commitment. These areas are Workplace Control (Desired Control and Perceived Control), Personal Attributes (Autonomy, Self-regulation, and Pharmaceutical Care Attitude), and Site Attributes (PSO Current Site, Organization of Work, Size and Workload).

Models 1 and 2: Perceived Control and Desired Control

In Model 1 (Table 5.11), the first variable entered into the equation, Perceived Control, is a fairly strong statistical predictor of Organizational Commitment with a beta of 0.431 and an $R^2 = 0.186$ ($p < 0.01$). This result reproduces the bivariate relationship seen

Table 5.11 Ordinary Least Squares Regression Results Predicting Organizational Commitment

	Model 1		Model 2		Model 3		Model 4		Model 5	
	beta	**Sig**	**beta**	**Sig**	**beta**	**Sig**	**beta**	**Sig**	**beta**	**Sig**
Model 1: Workplace Control										
Perceived Control	0.431	(0.00)	0.498	(0.00)	0.505	(0.00)	0.317	(0.00)	0.346	(0.00)
Model 2: Workplace Control										
Desired Control			-0.135	(0.07)	-0.126	(0.09)	-0.045	(0.30)	-0.058	(0.26)
Model 3: Personal Attributes										
Autonomy					-0.047	(0.28)			-0.012	(0.44)
Self Regulation					-0.086	(0.13)			-0.043	(0.30)
Pharmaceutical Care Attitude					0.274	(0.00)			0.175	(0.02)
Model 4: Site Attributes										
PSO Current Site							0.316	(0.00)	0.242	(0.00)
Organization of Work							0.262	(0.00)	0.268	(0.00)
Size							0.215	(0.01)	0.203	(0.01)
Workload							-0.052	(0.28)	-0.055	(0.27)
R	0.431		0.447		0.533		0.642		0.663	
R^2	0.186		0.200		0.284		0.412		0.439	
Adjusted R^2	0.180		0.187		0.256		0.378		0.390	
F; d.f. (residual), d.f. (model)	29.73; 130, 1		16.11; 129, 2		10.01; 126, 5		12.26; 105, 6		8.87; 102, 9	
Significance	0.000		0.000		0.000		0.000		0.000	

earlier (Table 5.10). When Desired Control is added to the equation in Model 2, the beta for Perceived Control increases to 0.498 and the beta for Desired Control is negative and marginal (beta = -0.135, $p < 0.1$) while the R^2 increases only by 0.014, explaining only 1.4% more of the variance. The increase in beta for Perceived Control when Desired Control is added indicates that some of the effect of Perceived Control was being suppressed by Desired Control. So, controlling for Desired Control, Perceived Control and Desired Control, together, predict 20% of the variance in Model 2.

Model 3: Personal Attributes Added

In Model 3, both Desired Control and Perceived Control remain in the equation while the Personal Attributes variables (Autonomy, Self-regulation, and Pharmaceutical Care Attitude) are entered. Of these three variables, only Pharmaceutical Care Attitude makes a meaningful contribution to the variance explained. With a beta = 0.274 ($p < 0.01$), this result is consistent with the bivariate correlations seen in Table 5.10 where Pharmaceutical Care Attitude was the only Personal Attributes variable to correlate with Organizational Commitment. Model 3 has an increase in R^2 to 0.284, explaining 8.4% more of the variance over Model 2. The betas for Perceived Control and Desired Control change only slightly (to 0.505 and -0.126, respectively) with this addition.

Model 4: Personal Attributes Removed, Site Attributes Added

In Model 4, again both Perceived and Desired Control remain in the equation while Personal Attributes variables are removed and Site Attributes variables are added. Here, we see a dramatic increase in R^2 from 0.200 to 0.412, when compared to Model 2. The beta for

Perceived Control drops to 0.317 ($p < 0.01$) while the beta for Desired Control becomes even less significant, by increasing to -0.045, ($p = 0.30$). What this means is that although Perceived Control remains statistically predictive of Organizational Commitment, it is not as strong a predictor when Site Attributes are take into account. Three of the four Site Attributes variables make a significant contribution to Model 4, with Workload as the only non-statistically significant predictor. The relationship that Workload has with Organizational Commitment is small and non-significant (beta = -0.045, $p = 0.30$). It is PSO Current Site, Organization of Work and Size that contribute the most to the increase in R^2 with PSO Current Site as the most significant contributor. This indicates the importance of respondents' views of the orientation, focus and nature of the pharmacist's work, and (secondarily) the Size and Organization of Work at their practice sites when predicting their Organizational Commitment. Comparing Models 3 and 4 shows that Site Attributes are much more important than Personal Attributes in the statistical prediction of Organizational Commitment.

Model 5: All Predictor Variables Entered

The importance of Site Attributes is borne out further in Model 5 where the Personal Attributes variables are re-entered while all other variables remain. This equation explains only 2.7% more of the variance than did Model 4. Betas for Desired and Perceived Control remain stable and virtually unchanged. Likewise, Personal Attributes betas from Model 3 to Model 5, have virtually no change. Autonomy and Self-regulation remain non-significant, while Pharmaceutical Care Attitude becomes slightly weaker but remains significant.

In conclusion, these results indicate that Perceived Control, PSO Current Site, Organization of Work and Size are, collectively, the strongest statistical predictors of Organizational Commitment. Further, Autonomy and Self-regulation make essentially no contributions to predicting Organizational Commitment. Of the Personal Attributes variables, only Pharmaceutical Care Attitude made a small contribution. Interestingly, though, when controlling for Site Attributes (Model 5), the beta for Pharmaceutical Care Attitude decreases from its Model 3 value of 0.274 ($p < 0.01$) to 0.175 ($p = 0.02$). This indicates that those respondents who value Pharmaceutical Care also likely evaluate their sites positively. This is borne out by examining the bivariate correlations between Pharmaceutical Care Attitude and PSO Current Site ($r = 0.291$, $p < 0.001$, t-tailed test). The PSO Current Site variable takes into account the focus, orientation and nature of the pharmacist's work at the site and correlates significantly with Pharmaceutical Care Attitude, while none of the other Site Attribute variables do so. Yet, even when controlling for these Site Attribute variables, Perceived Control (beta = 0.346, $p < 0.01$) remains the strongest contributor to this equation in predicting Organizational Commitment.

Fitted Model Predicting Organizational Commitment

Table 5.12 presents the fitted model for the statistical prediction of Organizational Commitment. For this model, only the five variables with significant beta values from previous models are entered into the regression. With $R^2 = 0.432$ ($F = 16.87$; d.f. = 111, 5; $p < 0.01$), and only five predictor variables, this model provides a parsimonious explanation of Organizational Commitment.

Table 5.12 Fitted Model for Organizational Commitment

	Fitted Model	
	beta	**Sig.**
Fitted Model		
Perceived Control	0.300	(0.00)
Pharmaceutical Care Attitudes	0.161	(0.04)
PSO Current Site	0.265	(0.00)
Organization of Work	0.270	(0.00)
Size	0.182	(0.01)
R		0.657
R^2		0.432
Adjusted R^2		0.406
F; d.f.(residual), d.f. (model)		16.87; 111, 5
Significance		0.000

While Perceived Control remains the strongest individual contributor (beta = 0.300, $p < 0.01$) the effect that three of the Site Attributes variables (PSO Current Site, Organization of Work, and Size) can be seen in this model. When comparing Model 2 to Model 3, there is virtually no change in the beta for Perceived Control, but when Site Attributes are added to the equation, as in Models 4 and 5 (and in this Fitted Model), beta for Perceived Control decreased by approximately 0.2. This pattern is consistent with the bivariate and multivariate relationships between Site Attributes and Perceived Control seen in Tables 5.7 and 5.8, respectively. The exception to this pattern for the prediction of Organizational Commitment is Size. There was a weak negative relationship between Size and Perceived Control (see Tables 5.7 and 5.8). But, when controlling for other factors, Size is positively related to Organizational Commitment. The relationship between Size and Organizational Commitment may indicate that there is some contribution from, for example, the relative job security that can be found in larger, busier workplaces.

In summary, pharmacists in the present study who 1) are more positive about pharmaceutical care, 2) describe the pharmacy service orientation of their worksites more positively, 3) describe the work at their sites as organized, 4) work for relatively larger pharmacies, and 5) perceive that they have greater participation in decisions affecting their work, generally are more committed to their employing organizations.

Chapter 6. DISCUSSION AND CONCLUSION

6.1 Introduction

The research questions addressed in this study ask how personal attributes and worksite attributes influence new pharmacists' desired and perceived workplace control and whether the perception of having greater control results in greater commitment to the employing organization.

In this chapter, I first discuss the significance of this research in terms of whether, and to what extent, support for study hypotheses provides insight into answers to the research questions posed. This discussion includes a summary of the significant findings that provide support for hypotheses, but also of those findings that do not. Often, we can learn as much or more about a problem by trying to understand why some hypotheses are not supported by the data. I next discuss the limitations of the study and what might have been done differently to improve it. I continue by discussing theory and research implications for how we think about and address issues surrounding the pharmacy workplace. I conclude by proposing areas where work remains to be done in researching employee pharmacists and their working environments.

6.2 Summary of Findings

In this section, I discuss whether and to what extent study findings support the hypotheses associated with the study's research questions. Again, these research questions

are:

Q1: Are new pharmacists' personal attributes related to their desire for and perception of their participation in decisions affecting their work?

Q2: Are new pharmacists' worksite attributes related to their desire for and perception of their participation in decisions affecting their work?

Q3: Controlling for personal attributes and site attributes, do desired and/or perceived participation in workplace decision making influence organizational commitment?

See Figure 3 (Chapter 2) for a visual representation of the proposed relationships among the concepts that generated these research questions. Tables 6.1, 6.2 and 6.3 briefly summarize where findings support or do not support study hypotheses.

6.2.1 Personal Attributes and Workplace Control

Table 6.1 presents a summary of support for hypotheses associated with Research Question #1. The evidence is clear at Time 1 that greater belief in professional autonomy, belief in professional self-regulation, preferences for high-quality relationships with patients, and preferences for a reasonable balance between work and private life all led to a greater desire for workplace control (Desired Control) through participation in decision making at Time 1. (See support for H1a1, H1a2, H1b1 and H1b3 in Table 6.1). The hypothesized relationship between Intensity of Work Demands and Desired Control (H1b2) is not supported, however. At Time 1, the combination of attitudes, beliefs, professional socialization and pre-licensure pharmacy work experiences are viewed as contemporaneous with the formation of new pharmacists' desires for control in the pharmacy workplace.

Table 6.1 Summary of Support for Research Question #1 Hypotheses

Research Question #1: Are new pharmacists' personal attributes related to their desire for and perception of their participation in decisions affecting their work?	**Bivariate Relationship Supported?**		**Multivariate Relationship Supported?**	
	Time 1	**Time 2**	**Time 1**	**Time 2**
H1a: Professional Orientation and Desired Control				
1. Autonomy ⊕	Yes	Yes	Yes	Yes
2. Self-regulation ⊕	Yes	M	M	No
H1b: Work-related Preferences and Desired Control				
1. Quality of Patient Relationships ⊕	Yes		Yes	
2. Intensity of Work Demands ⊖	No		No	
3. Time Allocation between Private and Work Lives ⊕	Yes		Yes	
H1c: Pharmaceutical Care Attitude and Desired Control ⊕		No		No
H1d: Professional Orientation and Perceived Control				
1. Autonomy ⊕		Yes		No
2. Self-regulation ⊕		No		No
H1e: Pharmaceutical Care Attitude & Perceived Control ⊕		No		No

Note: The signs ⊕ and ⊖ indicate the direction of the hypothesized relationship.

Shaded areas indicate no relationship hypothesized.

Levels of Support: Yes ($p \leq 0.05$)
M = Marginal Support ($0.05 < p < 0.10$).
No ($p \geq 0.10$)

The relationship between preferences for work-private life balance and desired workplace control indicates that respondents who want to control their jobs do not want to be controlled by them. The fact that there is no relationship between preferences about the intensity of work demands and desired control of the workplace (H1b2), however, may indicate an acquiescence to the realities of day-to-day work demands in contemporary pharmacies.

At both Time 1 and Time 2, new pharmacists who were more positive in their beliefs in autonomy and self-regulation also desired greater workplace control (although H1a2 was less strongly supported than H1a1). Looking forward to the day when they would themselves become pharmacists, respondents who at Time 1 desired to have closer, higher quality relationships with their future patients – relationships where they could have an ongoing impact and involvement in patient care – generally desired workplace control. Pharmacists having this type of relationship with patients is a core component of the pharmaceutical care paradigm (Hepler and Strand, 1990). Respondents were not asked again at Time 2 about their expectations for their relationships with their patients because such expectations are of a more enduring, personal, quality and were not likely to change in the six months from the Time 1 to Time 2 survey administrations.

At Time 2, hypotheses about belief in professional autonomy (H1d1), professional self-regulation (H1d2) and attitudes toward pharmaceutical care (H1e) generally were not supported in the prediction of perceived participation in workplace decision-making (Perceived Control) with support seen only for the bivariate relationship hypothesized

(H1d1). These results indicate that, generally, new pharmacists who expressed more positive beliefs in professional ideals (Autonomy and Self-regulation) and a more positive attitude toward pharmaceutical care, did not perceive themselves as having greater (or lesser) control in their workplaces through participation in decision making.

6.2.2 Worksite Attributes and Workplace Control

Table 6.2 presents a summary of support for hypotheses associated with Research Question #2. At Time 1, only the relationship between a Site Attribute and Desired Control to receive support (H2a1) was that with Pharmacy Service Orientation of the Site Worked for Pay. This negative bivariate relationship indicates that a lower descriptions of the PSO at sites where respondents worked prior to licensure generally resulted in their desiring more workplace control. There was no statistically significant relationship between the Site Worked for Academic Credit PSO and Desired Control. The difference in these relationships may be attributable to the lower mean PSO for sites where respondents worked for pay prior to licensure.

For the Time 2 prediction of Desired Control, neither the PSO Current Site (H2a1), Organization of Work (H2a2), nor Workload (H2a4) hypotheses were supported. Only Size (negatively) received marginal bivariate support (H2a3). These non-significant relationships indicate that respondent descriptions of these worksite attributes had no statistically significant predictive effect on their Desired Control.

This study also identified attributes of the worksite described by new pharmacists

Table 6.2 Summary of Support for Research Question #2 Hypotheses

Research Question #2: Are new pharmacists' worksite attributes related to their desire for and perception of their participation in decisions affecting their work?	**Bivariate Relationship Supported?**		**Multivariate Relationship Supported?**	
	Time 1	**Time 2**	**Time 1**	**Time 2**
H2a: Site Attributes and Desired Control				
1. Pharmacy Service Orientation (PSO)				
PSO Time 1 Site Worked for Pay ⊖	Yes		Yes	
PSO Time 1 Site Worked for Academic Credit ⊖	No		No	
PSO Time 2 Current Site ⊖		No		No
2. Organization of Work ⊖		No		No
3. Size ⊖		M		Yes
4. Workload ⊕		No		No
H2b: Site Attributes and Perceived Control				
1. PSO Time 2 Current Site ⊕		Yes		Yes
2. Organization of Work ⊕		Yes		Yes
3. Size ⊖		M		No
4. Workload ⊖		No		M

Note: The signs ⊕ and ⊖ indicate the direction of the hypothesized relationship.

Shaded areas indicate no relationship hypothesized.

Levels of Support: Yes ($p \leq 0.05$)
M = Marginal Support ($0.05 < p < 0.10$).
No ($p \geq 0.10$)

that contribute to the perception of the amount of actual control they perceive to have in these workplaces. For the Time 2 prediction of Perceived Control, the worksite attributes most closely related to how new pharmacists develop a perception of the control in their work circumstances are their descriptions of the Pharmacy Service Orientation (H2b1) and Organization of Work (H2b2) at their worksites. Positive descriptions of Site Attributes in these areas combined to predict new pharmacists' perceptions of having control of their pharmacy workplaces. The Size (H2b3) of the practice site and the Workload (H2b4) experienced, at best, only provided marginal support for the notion that overworked pharmacists in large sites perceive themselves as having less control of their work circumstances.

The implications for these findings are critical to our developing a better understanding of not only how it is that pharmacists process their experiences in the workplace, but also for exploring how workplace authority structures may be involved. Because the size of the worksite was negatively (though marginally) related to the actual control reported by respondents, these findings suggest that smaller workplaces (with possibly flatter organizational structures) may be more conducive to front line pharmacists perceiving that they have the opportunity to be involved in decisions affecting their work. Yet, taken together, the predictor variables Organization of Work and PSO Current Site describe the focus and structuring of work in the pharmacy and are more significantly associated with perceptions of having workplace control (Perceived Control).

6.2.3 Workplace Control and Organizational Commitment

As seen in Table 6.3, the strongest individual predictor of new pharmacists' Organizational Commitment is their perception of having greater control of their work through participation in decision making (Perceived Control, H3b), while Desired Control (H3a) received only marginal bivariate support. The development of commitment is not a simple phenomenon, however.

Greater commitment to their employing organization was found among pharmacists who have more positive attitudes toward pharmaceutical care, who describe their worksites' pharmacy service orientation and organization of work more positively, and who experience greater participation in decision affecting their work. Among all of these predictors, the extent to which new pharmacists report being involved in decisions affecting their work most strongly predicts how committed they are to their employing organization. There is more to this relationship, however. Part of what explains Perceived Control's contribution to statistically predicting Organizational Commitment are the contributions of two Site Attributes variables (PSO Current Site and Organization of Work). The prediction of Organizational Commitment by Perceived Control alone decreases when respondents' descriptions of their worksites' attributes are taken into account. Further, because Workload and Size have no significant influence on Organizational Commitment, one way to interpret these relationships is that new pharmacists don't mind working hard if they at least have some participation in decisions affecting their work. While it is the level of control they feel that they have in their workplaces that increases or decreases new

Table 6.3 Summary of Support for Research Question #3 Hypotheses

Research Question #3: Controlling for personal attributes and site attributes, do desired and/or perceived participation in workplace decision making influence organizational commitment?	**Bivariate Relationship Supported? Time 2**	**Multivariate Relationship Supported? Time 2**
H3a: Desired Control and Organizational Commitment ⊕	M	No
H3b: Perceived Control and Organizational Commitment ⊕	Yes	Yes

Note: The signs ⊕ and ⊖ indicate the direction of the hypothesized relationship.

Shaded areas indicate no relationship hypothesized.

Levels of Support: Yes ($p \leq 0.05$)
M = Marginal Support ($0.05 < p < 0.10$).
No ($p \geq 0.10$)

pharmacists' commitment to their employing organizations, the nature of the site itself is important in generating that sense of control that the pharmacist experiences.

This connection is a logical one when considering the nature of organizational commitment as measured in this study. Much of organizational commitment involves how much the employee can identify with the values and policies of the organization, how proud the employee is to work for it and how much effort the employee is will to exert on behalf of the organization. As Freeman and Rogers (1999) discussed in What Workers Want, employees of all persuasions and occupations in the United States value being able to participate in decisions affecting their work.

An organization that fosters, encourages and values employees' participation in decision making is one that employees should not have too much trouble being committed to. The mean ratings for Perceived Control and Organizational Commitment left room for them to either go up or down. Organizational Commitment had a mean of 0.83 on a scale from -3 to +3 and Perceived Control averaged 1.73 on a scale from zero to 4. While no subsequent use of the Graham and Verma (1991) Participation Gap Questionnaire was found in the literature, the difference between Desired Control and Perceived Control in this study, a "participation gap" of 1.35, is virtually identical to the 1.26 reported by Graham and Verma in their 1990 study. Also, one study of the organizational commitment of Australian hospital pharmacists (Savery and Syme, 1996), found a mean Organizational Commitment of 1.68 on a - 3 to +3 scale (s.d. = 1.13) which is only slightly higher than the average for this study. This study found a strong, positive relationship between participation in decision

making (Perceived Control) and Organizational Commitment near the midpoints of their possible ranges of values.

6.3 Study Limitations

Although every effort was made to recruit for the study a large and nationally representative group of pharmacy graduates from the U.S. Class of 1999, the first and most obvious limitation of this study is the low response rate. Whether these findings are can be generalized to the entire U.S. Class of 1999 is open to speculation. There are several factors in support of being able to generalize, though. First is the lack of statistically significant differences in responses that was seen when comparing early and late responders at both Time 1 and Time 2 as reported in Tables 3.4 and 3.5. Other factors in support of being able to generalize study results include Table 3.3 report of similarity in demographic variables between the study group and the general population of U.S. pharmacy graduates in 1999 and the Table 3.2 report of regional response rates.

Another related limitation here is the nature of the sampling frame. Choosing to study new graduates drastically reduces such problems as comparability of respondents due to widely varying degrees of professional experience. It also introduces the problem of tracking and eliciting responses from members of a highly mobile group who are experiencing many new life circumstances and pressures that very likely reduce their motivation to respond to a survey. Yet, the choice of such a homogeneous sampling frame is also a strength of the study. Respondents generally were of similar age and experience.

This allowed for less concern about interactions effects among variables describing their personal attributes and demographics.

Another limitation is that with only two data collection points (immediately after graduation and six months later), the ability of subjects to report may not yet have been fully formed (e.g., as new pharmacists they may not yet have a good sense of how much they are actually involved in decision affecting their work). Further, because organizational commitment is a relatively deeply held construct, it may not be possible to acquire a stable measurement of it only 6 months after starting a job.

Some instrumentation and measurement issues were also a concern. The measures Size and Workload may not have captured the full extent of their intended meanings. Size did not really assess the size of the employing organization; it assessed the size of the worksite. Further, a workload measure that takes into account the practice activities and responsibilities that contribute to pharmacists' workload is needed. The measure used in this study was based solely on prescription volume at the worksite. More fundamentally, each of these measures was based on the report of a new employee and the measures themselves were not validated in the pretest phase. More direct assessment of size and workload data worksite would have been less subject to misestimation and reporting error.

Another measurement issue is that three-fourths (74.6%) the Two-Wave Respondents actually completed surveys after becoming licensed as pharmacists. This was because recruitment of potential subjects continued during the early phase of distributing Time 1 questionnaires. Having earlier access to the full sampling frame would have allowed

these respondents to receive their questionnaires earlier and would have allowed for a more accurate assessment of pre-licensure expectations for practice. Further, respondents may also have received their questionnaires before they moved after graduation – a factor that may have increased response rate.

Another limitation is ambiguity of some causal ordering. For example, respondents who positively described their worksites' attributes also perceived being involved in decisions affecting their work. Despite direction of the relationship indicated in Figure 3 (Chapter 2) the causal ordering between these variables may be ambiguous. It is quite possible that being involved in decisions affecting their work led to more positive respondent descriptions of worksite attributes.

The Participation Gap Questionnaire itself may have presented a problem in this study. By developing a possible response set in the way the questions were posed, this instrument may have shrouded a more accurate assessment of how much respondents actually participated in decisions affecting their work. Because people often feel that they have less than they want, respondents may not have accurately reported the amount of actual participation they felt they had in decisions at their worksite. Because the Perceived Control variable was a strong statistical predictor of commitment to the employing organization, future researchers may want to restrict application of this measure to the Perceived Control side of the questionnaire.

6.4 Issues for Theory and Research

Professional Issues

One of the instruments adopted for use in this study has implications for both theory and future research. The Participation Gap Questionnaire (Graham and Verma, 1991) was used to measure respondents' perceived experience of, and expectations for, workplace control. One aspect of this instrument that was not included in the analysis is the *participation gap*. The gap is calculated by simply subtracting the control perceived to be experienced from that which is desired. In this study's design, the *participation gap* variable was not as strong a statistical predictor and was not as strongly predicted as Perceived Control and was therefore not included in the analysis. It does, however, have implications for future research. Without referring to or using the Graham and Verma measure, Freeman and Rogers (1999) also discussed a participation gap when emphasizing the importance that workers place on being involved in decisions affecting their work.

Recall that at Time 2, only those who described positively their worksites' attributes were likely to perceive experiencing workplace control in those sites. This finding has implications for how it is that pharmacists evaluate their worksites and develop personal criteria for evaluation of future employment opportunities. It also has implications for how it is that employing organizations do or do not respond to the beliefs in autonomy and the expectations or desires of pharmacists that they employ. Do the focus and authority structures of the employing organization accommodate pharmacists' beliefs in professional autonomy and their related desires for participation in workplace decision-making?

Because both commitment and perceived participation in decision-making were below their possible upper limits in this study of new pharmacists using Organizational Commitment as the final dependent variable, the *participation gap* may be important in predicting employee pharmacist attitudes other than commitment that are nonetheless closely associated with commitment. For example, the current shortage of pharmacists and recruiting crisis being experienced by National Association of Chain Drug Stores member organizations (discussed in Chapter 2) may be relevant. What if *participation gap,* a relatively weaker predictor of organizational commitment than was Perceived Control, were found to be highly associated with employees' intentions to leave their current employer? Would the response of employing organizations be to increase the amount of participation in decision-making employee pharmacists have in order to close the gap? Alternatively, would finding ways to lower employee expectations be just as effective?. The participation in decision-making issue has many implications for employees and employers alike.

Issues for Pharmacy Education and Professional Socialization

Because pharmacy educators regularly strive to prepare and socialize their students for their professional roles as pharmacists, more research into the desires, expectations and motivations of pharmacy students is needed. This study revealed a disparity between the sites where students worked for academic credit and the sites where they worked for pay prior to graduation. A better understanding of the effects of socializing influences that students encounter when they are working in sites both inside and outside the curriculum may provide pharmacy educators with strategies to insulate students from unprofessional

influences.

From the standpoint of the pharmacy profession, development of research instrumentation to assess a *pharmaceutical care gap* would have implications for the professional socialization strategies of pharmacy educators. A *pharmaceutical care gap* measure would parallel the participation gap measure used in this study with one additional line of questioning. As in the Graham and Verma instrument (1991), pharmacists would be asked about how much pharmaceutical care they believe they should provide and how much they actually provide. The additional question would ask about how much they want to provide.

Investigation of Alternative Explanations of Organizational Commitment

As mentioned in the discussion of study limitations, there may be problems of meaningful interpretation of results based on new graduates having possible problems in making some of the kinds of assessment they were asked to make. Thus, there is a need for more longitudinal data that would follow new graduates for several years to determine in more depth how their desire for control, perceived experience of control and organizational commitment change during the first few years after graduation. This would also allow for examination of other exogenous variables related to organizational commitment that were not assessed in this study. For example, the influence of family obligations and attachments on decisions to stay at or leave a job may have significant impact on the extent of an employee's organizational commitment.

Other research examining the antecedents, correlates and outcomes of organizational

commitment discusses what other variables may be significantly related to organizational commitment. For example, Mathieu and Zajak (1990) performed a meta-analysis of in this area and found that personal characteristics, job characteristics and organizational characteristics were antecedents of organizational commitment (as measured by the OCQ) in 48 studies. Mathieu and Zajak (1990) also found that organizational commitment was highly correlated with intention to search for job alternatives (mean weighted r corrected for attenuation = -0.599) and with intention to leave one's job (mean r = -0.464). Organizational commitment was not strongly related to employees' perceptions of job alternatives, however (mean weighted r corrected for attenuation = -0.085). Yet, Mathieu and Zajak did find a positive relationship between monetary rewards (pay) organizational commitment (mean weighted r corrected for attenuation = 0.323).

As described in Chapter 1, pharmacists are currently in high demand in the job market – a fact not lost on contemporary pharmacy graduates. As job market conditions change, pharmacists' perceptions of the ease of finding a new job may also change. Future research examining the interaction between perceptions of the job market and actual participation in decision making as these combine to predict organizational commitment may reveal a change their relationship. For a brief discussion of the relationship between organizational commitment and both monetary rewards (hourly wage) and perceptions of job alternatives in the present study, see Appendix F.

Exploration of Interaction Effects

This study identified a number of personal and organizational factors involved in the

development of workplace control as a predictor of organizational commitment. The small sample size of this study precluded meaningful exploration of the effects of site type or personal demographics on workplace control and organizational commitment. Future application of the research model developed in this study should take into account how the effects of personal and site characteristics may interact in this model. This could be accomplished by applying the research model to specific practice site types or companies and the variety of pharmacists who work in them. Alternatively, pharmacists with closely related sociodemographic characteristics could be studied to examine how their desires and perceptions of control develop in different types of pharmacy worksites.

6.5 Conclusion

Whether or not new pharmacists perceive controlling the workplace context through which they experience and practice their profession is a complex and important problem with significant implications for both pharmacists and their employers. This study explained personally held beliefs and desires that contribute to whether or not new pharmacists perceive themselves as actually experiencing control in their workplaces.

The main goal of this study was to identify and understand the antecedents and consequences of workplace control for new pharmacists. This goal was relatively well-achieved. Despite its limitations, this study has improved our understanding of how pharmacists interpret, experience and respond to their working environments. It accomplished this by identifying and explaining characteristics (both of the person and of the

workplace) that lead to new pharmacists' desires for control in their workplaces and to how much control they perceive to actually have.

By learning more about the antecedents and consequences of workplace control, it is hoped that this study has provided insight into the importance that new pharmacists place on being involved in decisions affecting their work. It was those new pharmacists most involved in workplace decision making who were the most committed to their employing organizations.

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APPENDIX A: Study Description

STUDY DESCRIPTION

You are invited to participate in a research project on the practice experiences of new pharmacists. In particular, this study explores whether and how the characteristics of the pharmacy practice environment influence pharmacists' work-related attitudes and evaluations.

Who is being asked to participate?
We seek to gather information about the pharmacy employment and practice experiences of members of the Class of 1999. A nationally-representative sample of pharmacy graduates will be invited to participate in the study.

What will be done?
The study will be carried out via a series of mail surveys. You will receive the first survey near the time of graduation, near the beginning of your pharmacy career. A follow-up survey will be sent about 6 months later and then again approximately once per year. Each survey will take about 30-45 minutes to complete.

Where will the study be done?
This is a study of pharmacy school graduates from throughout the United States. The study center is at the University of Wisconsin School of Pharmacy located in Madison, Wisconsin.

Are there any risks to you if you participate in this study?
We believe that there are no significant risks to anyone who chooses to participate in this study. The risks we can think of seem remote and manageable; we address them next.

Will study participants in any way be identified or identifiable?
To protect participants, all information gathered in this study will remain confidential and all study participants will remain anonymous. No names or identifying information will be included in any reports from this study. Individual responses will be identifiable only to core project staff and in two specific ways. First, on the back of the enclosed survey, you will find an identification number. This number is included so that we can connect together information that you provide at the different times you respond to our surveys. Second, on the inside of last page of this survey, you will see that we ask for a permanent address at which you can receive mail. This is requested so that we have an alternate means for contacting you if, for example, you change residences and your mail does not follow you. All this information will be kept in secure (i.e., locked) storage and only 2 core project staff will have access to it.

Will the research project affect your relationship with current or with any potential/future employer?
To maintain your privacy, surveys will be sent directly to you at your residential address. The researchers will not reveal (to employers or to anyone else) the identities of any study participants nor will we directly or indirectly contact any pharmacy employers about this study. Because data will be presented only in combined forms, individual study participants will remain completely anonymous.

What if you agree to participate but then change your mind?
If you decide to participate in our study now, remember that you are free to withdraw from it at any later point in time. Completing this survey does not mean that you are required to complete any subsequent survey. Also, remember that on each survey you are free to skip any question that you prefer not to answer.

What if you have further questions?
We encourage you to contact us by phone, fax or email if you have any further questions. Complete information about how to reach us is included on the reverse side. If you telephone us from outside the Madison area, we'll be happy to return your call so that you don't need to pick up the telephone charges.

APPENDIX B: Introductory Letters

UNIVERSITY OF
WISCONSIN
MADISON

Dear Pharmacy Colleague,

You are invited to take part in an important study of the work experiences of pharmacy graduates in the Class of '99 from across the United States. The study's overall goal is to examine how characteristics of the pharmacy workplace may affect how pharmacists view their profession and their jobs. As someone beginning a career in pharmacy, your views on this subject are critical to the success of this research.

A description of the study appears on the back of this letter and we invite you to read it. You'll see that, if you decide to participate in the study, we would like to recontact you in about six months and then again about once a year. Our goal is to learn about your pharmacy experiences and observations as you become established in your career.

We have enclosed a survey form and a postage-paid return envelope. We hope that you will be interested in sharing your views in an area that is critical to the future of the pharmacy profession. If you are, completing and returning the survey to us will indicate that you have agreed to participate in the study.

Allow us to highlight a few important points.

* Any information that you provide will be treated confidentially and you will remain anonymous.
* If you wish to skip any questions on the survey, that is your choice to make.
* If you change your mind about participating, you are free to withdraw at any time.

Your help is very much needed – and equally appreciated. If you are willing to participate in this study, please complete and return the enclosed survey; a postage-paid return envelope is included for your use. We also ask that you keep this letter so that if you have questions (now or later) about this study, you can call, write or email us at the University of Wisconsin School of Pharmacy.

Thanks in advance for your assistance. Congratulations on completing your pharmacy degree. We hope this is the start of a long, productive, and fulfilling career for you!

Jeanine K. Mount, R.Ph., Ph.D
Associate Professor,
Social and Administrative Pharmacy
Telephone: 608/262-8678
Email: jkmount@pharmacy.wisc.edu

Bart Clark, M.S., R.Ph.
AFPE Fellow
Ph.D. Candidate
Telephone: 608/262-4723
Email: beclark@pharmacy.wisc.edu

UNIVERSITY OF
WISCONSIN
MADISON

Dear Pharmacy Colleague,

When we last contacted you 6 months ago, you shared your thoughts and impressions about the pharmacy workplace. We'd like to learn about how your thoughts have (or haven't) changed since then. Issues surrounding the pharmacy workplace continue to receive lot of attention in our profession. Understanding how these issues are important to pharmacists early in their careers is critical to the way the pharmacy profession prepares for the future. For this, we again need to ask for your help.

As a member of the Class of 1999, your opinions continue to be important to us as we learn about how pharmacists at the beginning of their careers experience key aspects of their jobs. By completing and returning this survey, you will be making a unique contribution to our study of the pharmacy workplace.

Filling out the survey will take about 30-40 minutes. We hope you can find time during the next week to complete the survey and return it to us.

Thank you in advance for your help. We couldn't do this without you!

Jeanine K. Mount, R.Ph., Ph.D
Associate Professor
Social & Administrative Pharmacy
608/262-8678
jkmount@pharmacy.wisc.edu

Bart Clark, R.Ph., M.S
Ph.D. Candidate and AFPE Fellow
Social & Administrative Pharmacy
608/262-4723
beclark@pharmacy.wisc.edu

APPENDIX C: Announcement and Reminder Postcards

Dear Pharmacy Colleague,

About 6 months ago, you responded to our survey about your work experiences as a new pharmacist. We'd like to thank you for your help. Your response is important to helping us understand the state of affairs in today's pharmacy practice site.

Within a week or two, you'll be receiving a follow-up survey asking you about your pharmacy work experiences since we last contacted you. We're contacting you now to let you know that the survey soon will be on its way to you. When it arrives, we hope you can take a few minutes to fill it out.

Thanks again for all you help.

Bart Clark
Jeanine Mount
608-262-4723
beclark@pharmacy.wisc.edu

Dear Pharmacy Colleague,

Several weeks ago, we sent you a survey about your practice experiences as a new pharmacist. We are sure that a lot has happened in your professional life since you graduated and received your license to practice pharmacy. Your response is very important to us -- without it, we won't understand the varied experiences of new pharmacists like you. We would very much like to include your input.

If you have already mailed your survey back to us, thank you!! If you haven't had a chance to respond yet, please complete the survey (as much as you have time to do) and mail it back to us in the postage-paid business reply envelope we provided. If you have lost or misplaced the survey, please give us a call or an e-mail.

Jeanine Mount
608-262-8678
jkmount@pharmacy.wisc.edu

Bart Clark
608-262-4723
beclark@pharmacy.wisc.edu

APPENDIX D: Time 1 Questionnaire: First Page and Items Analyzed

UNIVERSITY OF
WISCONSIN
MADISON

Dear Pharmacy Colleague,

As you start your career as a pharmacist, issues surrounding the pharmacy workplace are receiving a lot of attention in our profession. Understanding how these issues are important to pharmacists entering the profession is critical to the way the pharmacy profession prepares for the future. For this, we need to ask for your help.

Your opinions are important to us! We are conducting a study aimed at learning about how pharmacists experience key aspects of their jobs. By filling out and returning this survey, you will be making a unique contribution to our understanding of the pharmacy workplace.

Filling out the survey will take about 30-45 minutes. We hope you can find time during the next week to complete the survey and return it to us in the return envelope that is enclosed.

Thank you in advance for your help. We couldn't do this without you!

Jeanine K. Mount, R.Ph., Ph.D.
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Telephone: 608/262-8678
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Bart Clark, M.S., R.Ph.
Ph.D. Candidate
Telephone: 608/262-4723
Email: beclark@pharmacy.wisc.edu

First, we would like to know a little bit about your decision to become a pharmacist.

1. About how old were you when you *first became interested* in pharmacy as a career?_____years

2. About how old were you when you *actually decided on* pharmacy as a career?_____years

3. What are your **reasons for becoming a pharmacist?** Please circle **no more than three** reasons from the following list. When you are finished, rank these choices from "1" to "3" with "1" being the most important.

1 = MOST IMPORTANT 2 = SECOND MOST IMPORTANT 3 = THIRD MOST IMPORTANT

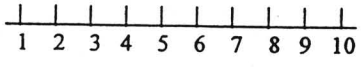
___a. To help people
___b. I enjoy the chemical/scientific aspects of pharmacy
___c. Because pharmacists are highly respected by the public
___d. Based on my experience as a pharmacy technician, I thought I'd be a good pharmacist.
___e. I wish to educate and counsel people about their health
___f. To earn a good salary/financial security
___g. The number of career options available with a pharmacy degree
___h. I like to work with other people
___i. To improve the medical outcomes and quality of life of patients
___j. To become a health care professional
___k. The number of positions available/job security
___l. The flexibility of work schedules available
___m. Other *(please specify)* _____

4. The following items describe important aspects of the work of pharmacy professionals. These may be "critical factors" that enter into your career decision.

   Please read these and respond by circling your number rating on the line for each factor.

a. Counseling

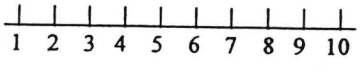
How much time do you want to spend dealing with patients and other members of the public?



None of my time — Most of my time

b. Continuity of Relationships

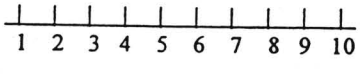
To what degree do you want to have ongoing or long-term contact with patients or consumers?



Want no ongoing/ long-term relationships at all — Want most relationships to be ongoing/ long-term

c. Helping People

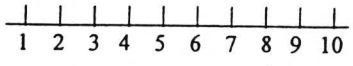
Would you prefer that your work directly or indirectly add to the well-being of individuals or society as a whole?



Impact of my work on people's well-being can be indirect — Want to directly add to people's well-being

d. Professional Interaction

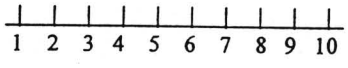
To what degree do you want your work to involve working with healthcare professionals other than pharmacists?



Prefer/can accept rarely interacting with other health-care professionals — Prefer to interact with other healthcare professionals almost always

e. Educating Other Professionals

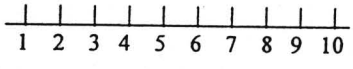
To what extent do you want your work to involve educating other professionals, including students of pharmacy?



Would prefer to spend no time educating others — Want education to be a primary element

f. Repetition/Variety

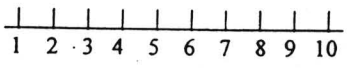
How acceptable would it be if your work were composed of activities and tasks that are very repetitive day to day?



Prefer/can accept highly repetitive work — Want significant variety

g. Multiple Task Handling

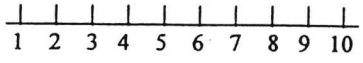
Do you prefer work that allows you to concentrate on and complete one task at a time or work that involves handling interruptions and dealing with several tasks/projects at the same time?



One activity at a time — Many activities at once

h. Problem-Solving

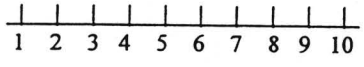
What types of problems do you prefer being requested to solve in your work? Specific problems with largely "tried and true" solutions or more theoretical ones that require exploring untested alternatives?



Specific/ tried and true — Theoretical/ untested

i. Focus of Expertise

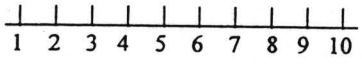
In your work as a pharmacist, would you prefer to have a sharply defined area of expertise or to have more "generalist" expertise across several pharmacy-related areas?



Want general expertise in several areas — Want sharply defined area of expertise

j. Innovative Thinking

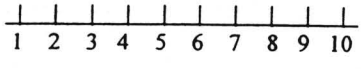
To what extent do you want the nature of your work to involve generating new ideas pertaining to pharmacy or pharmaceuticals?



Innovative thinking need not be involved — Want innovative thinking to be almost mandatory

k. Applying Scientific/Medical Knowledge

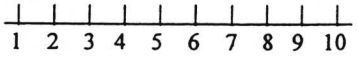
To what extent do you want your work to demand the application of scientific or medical knowledge?



Never — To a great extent

l. Business Management

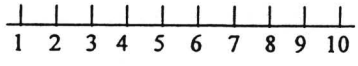
How much of your activity would you prefer be directed toward organizing, managing, and assuming the risks of a business?



Prefer no business activities involved — Prefer a great deal of time directed toward business activities

m. Pressure

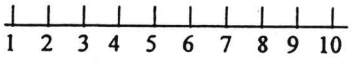
How much pressure (dealing with crises, quickly interpreting medical/technical information) do you prefer in your work?



Prefer minimal-pressure environment — Can accept/prefer high-pressure environment

n. Work Schedule

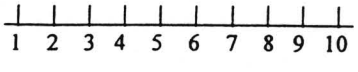
What type of work schedule do you prefer?



Can accept irregular and/or long hours — Prefer regular, predictable hours

o. Leisure/Family Time

How much time must your work allow for family/leisure activities?



Need little free time — Want ample free time

8. Below, please select the 3 most important **reasons you did or will use in making a decision to accept a pharmacy job after you graduate and become licensed.** Indicate the order of importance using the following scale:

1 = MOST IMPORTANT 2 = SECOND MOST IMPORTANT 3 = THIRD MOST IMPORTANT

___ close to where I want to live
___ salary level
___ close to where spouse works
___ work environment
___ work schedule
___ family owns the pharmacy
___ interest in working in a hospital
___ interest in working in community pharmacy
___ want to learn how to manage a retail business
___ Other (specify) _____

Next, we would like you to think about pharmacy as a profession.

9. Here are some statements about *pharmacists as professionals.* Indicate the extent to which you agree or disagree with each statement using the answer codes provided.

ANSWER CODES:
Strongly disagree = -2
Disagree = -1
Neither agree nor disagree = 0
Agree = +1
Strongly Agree = +2

a. Pharmacists should be the only ones who determine and set standards for their practice.	-2	-1	0	+1	+2
b. Pharmacists' employers should establish specific guidelines for making professional decisions in pharmacy work.	-2	-1	0	+1	+2
c. The only professional standards a pharmacist should accept are those established by his/her colleagues.	-2	-1	0	+1	+2
d. The opportunity to exercise professional judgment in a pharmacist's work should be determined by his/her employer.	-2	-1	0	+1	+2
e. A pharmacist should be willing to modify the basic standards which guide his/her practice in order to conform to the wishes of the public.	-2	-1	0	+1	+2
f. A pharmacist's employer has the right to review and change the professional decisions a pharmacist makes.	-2	-1	0	+1	+2
g. Only another pharmacist is qualified to judge the competence of a pharmacist's work.	-2	-1	0	+1	+2
h. As a pharmacist, I would depart from my employer's policies when I judge it professionally necessary.	-2	-1	0	+1	+2
i. Pharmacists who violate professional standards should be judged only by their pharmacy colleagues.	-2	-1	0	+1	+2
j. A pharmacist's employer has the right to change his/her professional decisions because the employer is the one who pays the pharmacist's salary.	-2	-1	0	+1	+2
k. Non-pharmacists should be allowed input into the development of standards for professional competence which guide a pharmacist's professional practice	-2	-1	0	+1	+2
l. My employer has no right to place limitations on the decisions I make concerning professional matters.	-2	-1	0	+1	+2

12. People have different ideas about how much "say" (that is, control or power) pharmacists should have and do have over their work. How do you feel about this? For QUESTION 1 and QUESTION 2 below, please respond using the answer codes provided.

QUESTION 1: How much "say" do you think pharmacists *should* have in the following areas of the job?

QUESTION 2: How much "say" do pharmacists *actually* have in the following areas of the job?

	QUESTION 1: Pharmacists *Should* Have: None = 0, Little = 1, Some = 2, Quite a Bit = 3, Very Much = 4	QUESTION 2: Pharmacists *Actually* Have: None = 0, Little = 1, Some = 2, Quite a Bit = 3, Very Much = 4
a. The way the work is done.	0 1 2 3 4	0 1 2 3 4
b. Keeping track of quality.	0 1 2 3 4	0 1 2 3 4
c. How fast the work is done.	0 1 2 3 4	0 1 2 3 4
d. How much work pharmacy staff should do in a day.	0 1 2 3 4	0 1 2 3 4
e. Who should do what job in your pharmacy.	0 1 2 3 4	0 1 2 3 4
f. When the work day begins and ends. . .	0 1 2 3 4	0 1 2 3 4
g. Who should be fired if they do a bad job or don't come to work.	0 1 2 3 4	0 1 2 3 4
h. Who should be hired to work in your pharmacy.	0 1 2 3 4	0 1 2 3 4
i. Handling complaints or grievances. . . .	0 1 2 3 4	0 1 2 3 4
j. Who gets promoted.	0 1 2 3 4	0 1 2 3 4
k. The use of new technology.	0 1 2 3 4	0 1 2 3 4
l. The selection of your supervisor	0 1 2 3 4	0 1 2 3 4

13. We would like to learn about your pharmacy work experiences up to the present time. First, tell us about pharmacy practice sites **where you have worked for pay**. Begin with **your most recent experience** as #1.

EMPLOYMENT SITE	EMPLOYMENT
1. Site name: _____ Describe this site in terms of: (*Place a check (✔) on each line*) Its Orientation: |_|_|_|_|_|_|_|_|_|_|_| Patient Product Its Focus: |_|_|_|_|_|_|_|_|_|_|_| Quality Quantity Pharmacist's work: |_|_|_|_|_|_|_|_|_|_|_| Professional Technical	*Type* of Pharmacy Site: (Use codes below.) _____ *Employed* from: ___/___ to ___/___ Your *Title*: _____
2. Site name: _____ Describe this site in terms of: (*Place a check (✔) on each line*) Its Orientation: |_|_|_|_|_|_|_|_|_|_|_| Patient Product Its Focus: |_|_|_|_|_|_|_|_|_|_|_| Quality Quantity Pharmacist's work: |_|_|_|_|_|_|_|_|_|_|_| Professional Technical	*Type* of Pharmacy Site: (Use codes below.) _____ *Employed* from: ___/___ to ___/___ Your *Title*: _____
3. Site name: _____ Describe this site in terms of: (*Place a check (✔) on each line*) Its Orientation: |_|_|_|_|_|_|_|_|_|_|_| Patient Product Its Focus: |_|_|_|_|_|_|_|_|_|_|_| Quality Quantity Pharmacist's work: |_|_|_|_|_|_|_|_|_|_|_| Professional Technical	*Type* of Pharmacy Site: (Use codes below.) _____ *Employed* from: ___/___ to ___/___ Your *Title*: _____

CODES FOR TYPE OF PHARMACY PRACTICE SITE:

1 = Independent (1-3 locations)
2 = Chain (4 or more locations)
3 = Supermarket/Discount or Department Store
4 = Hospital/Institutional
5 = Clinic/Apothecary (Prescription Only)
6 = Mail Service
7 = Consultant/Home Health
8 = Wholesaler or Manufacturer
9 = Other (Specify on lines above)

In how many other pharmacy practice sites have you worked for pay? _____ sites
(count)

This involved a total of how much time? _____ months _____ years

14. Next, tell us about pharmacy practice sites **where you have worked for academic credit**. This should include, for example, clerkships and externships. Begin with **your most MAJOR experience** as #1.

PHARMACY SITE	EXPERIENCE
1. Site name: _____ Describe this site in terms of: (*Place a check (✔) on each line*) Its Orientation: |_|_|_|_|_|_|_|_|_|_| Patient Product Its Focus: |_|_|_|_|_|_|_|_|_|_| Quality Quantity Pharmacist's work: |_|_|_|_|_|_|_|_|_|_| Professional Technical	*Type* of Pharmacy Site: (Use codes below.) _____ *Length* of Experience _____ weeks _____ months
2. Site name: _____ Describe this site in terms of: (*Place a check (✔) on each line*) Its Orientation: |_|_|_|_|_|_|_|_|_|_| Patient Product Its Focus: |_|_|_|_|_|_|_|_|_|_| Quality Quantity Pharmacist's work: |_|_|_|_|_|_|_|_|_|_| Professional Technical	*Type* of Pharmacy Site: (Use codes below.) _____ *Length* of Experience _____ weeks _____ months
3. Site name: _____ Describe this site in terms of: (*Place a check (✔) on each line*) Its Orientation: |_|_|_|_|_|_|_|_|_|_| Patient Product Its Focus: |_|_|_|_|_|_|_|_|_|_| Quality Quantity Pharmacist's work: |_|_|_|_|_|_|_|_|_|_| Professional Technical	*Type* of Pharmacy Site: (Use codes below.) _____ *Length* of Experience _____ weeks _____ months

CODES FOR TYPE OF PHARMACY SITE:

1 = Independent (1-3 locations)
2 = Chain (4 or more locations)
3 = Supermarket/Discount or Department Store
4 = Hospital/Institutional
5 = Clinic/Apothecary (Prescription Only)
6 = Mail Service
7 = Consultant/Home Health
8 = Wholesaler or Manufacturer
9 = Other (Please specify on lines above)

In how many other pharmacy practice sites have you worked for academic credit? _____ sites
(count)

This involved a total of how much time? _____ weeks _____ months

17. What degree will you earn in pharmacy school? (Please check (✔) all that apply)

___ B.S.Pharm or B.Pharm degree
___ PharmD degree
___ Other (please specify):_____

18. Have you earned a college degree in any other field outside pharmacy?

NO YES ====> In what field? _____

19. Other than yourself, is there another wage earner in your household?

NO YES

20. In what year were you born? 19__

21. Gender: MALE FEMALE

If you have any comments you would like to make about this survey or if there is any additional information you would like to provide, please use the space below.

Please return your completed survey in the postage-paid envelope provided.
If you misplace your envelope, you can mail the survey to:

Jeanine K. Mount, Ph.D., R.Ph.
University of Wisconsin
School of Pharmacy
425 N. Charter St.
Madison, WI 53706

Thank you for your help in completing this survey!!

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APPENDIX E: Time 2 Questionnaire: Items Analyzed

1. We would like to learn about your pharmacy work experiences since we contacted you 6 months ago. Begin with your current pharmacy practice site .

PHARMACY PRACTICE SITE	EMPLOYMENT
1. Current site name:_____ How would you describe this site in terms of its: (Place check [✓] on line) Orientation: |_|_|_|_|_|_|_|_|_|_| Patient Product Focus: |_|_|_|_|_|_|_|_|_|_| Quality Quantity Pharmacist's work: |_|_|_|_|_|_|_|_|_|_| Professional Technical	*Type* of Pharmacy Site: (See codes below.) _____ *Employed* from: ___/___ to ___/___ Your *Title*: _____
2. Previous site #1 name:_____ How would you describe this site in terms of its: (Place check [✓] on line) Orientation: |_|_|_|_|_|_|_|_|_|_| Patient Product Focus: |_|_|_|_|_|_|_|_|_|_| Quality Quantity Pharmacist's work: |_|_|_|_|_|_|_|_|_|_| Professional Technical	*Type* of Pharmacy Site: (See codes below.) _____ *Employed* from: ___/___ to ___/___ Your *Title*: _____
3. Previous site #2 name:_____ How would you describe this site in terms of its: (Place check [✓] on line) Orientation: |_|_|_|_|_|_|_|_|_|_| Patient Product Focus: |_|_|_|_|_|_|_|_|_|_| Quality Quantity Pharmacist's work: |_|_|_|_|_|_|_|_|_|_| Professional Technical	*Type* of Pharmacy Site: (See codes below.) _____ *Employed* from: ___/___ to ___/___ Your *Title*: _____

CODES FOR TYPE OF PHARMACY SITE:

1 = Independent Pharmacy (1-3 locations)
2 = Chain Pharmacy (4 or more locations)
3 = Supermarket/Discount or Department Store
4 = Hospital/Institutional Pharmacy (Inpatient)
5 = Hospital/Institutional Pharmacy (Outpatient)
6 = Ambulatory Care Pharmacy Residency
7 = Hospital Pharmacy Residency
8 = Managed Care Pharmacy
9 = Mail Service Pharmacy
10 = Consultant/Home Health Pharmacy
11 = Other Type of Worksite
(Please identify type on lines above.)

2. Next, we would like to learn about your *current practice site* and your employment.
(This should be the first site you described in question #1.)

a. If you work in a community or outpatient pharmacy:
On average, about how many prescriptions are dispensed in your pharmacy each week?_____

b. If you work in an in-patient pharmacy:
What is your average daily census? _____ patients/residents

c. How many hours (total) is your pharmacy open each week?_____

d. How many staff work in your pharmacy? Consider ≥30 hours/week to be full time. Please estimate numbers to the best of your ability.

	FULL-TIME	PART-TIME
Pharmacists	_____	_____
Technicians (non-certified)	_____	_____
Technicians (certified)	_____	_____
Other support (clerical, etc.)	_____	_____

e. For the items below, place a check (✔) next to each item that is available to your pharmacy.
(*Check all that apply.*)

_____ Automated tablet counter
_____ Automated prescription packaging & labeling machine
_____ Bar-coding for final dispensing accuracy check
_____ Drug order picking robotic device (for example, Pixis system)
_____ Dedicated telephone line for physician/prescriber calls
_____ Automated refill request telephone system for use by patients
_____ Automated drug repackaging device (e.g., for unit dose or blister packaging)
_____ Access to online drug information databases (e.g. *Micromedex* or *Facts & Comparisons*)
_____ Off-site, centralized refill facility that delivers to pharmacy
_____ Individual patient drug information leaflets printed with each prescription.
_____ Automated IV fluid compounding device.
_____ Other (*specify*)_____

3. a. My immediate supervisor is a: (Circle one)

PHARMACIST NON-PHARMACIST I HAVE NO SUPERVISOR

⇓

Skip to Question 4 on page 3

b. My immediate supervisor's supervisor is a: (Circle one)

PHARMACIST NON-PHARMACIST S/HE HAS NO SUPERVISOR DON'T KNOW

5. Next, we would like to learn more about your practice site. Please indicate how much you agree or disagree with the following statements using the answer codes provided.

ANSWER CODES:
Strongly disagree = -2
Disagree = -1
Neither agree nor disagree = 0
Agree = +1
Strongly Agree = +2

AT MY CURRENT PHARMACY PRACTICE SITE:					
a. the level of pharmacist staffing is adequate to meet our patient care needs.	-2	-1	0	+1	+2
b. I am rarely interrupted when working with a patient or with another healthcare provider.	-2	-1	0	+1	+2
c. pharmacy technicians create more work for me than they save.	-2	-1	0	+1	+2
d. pharmacists understand the difference between their work and technicians' work.	-2	-1	0	+1	+2
e. my pharmacist colleagues are competent	-2	-1	0	+1	+2
f. the staff in my pharmacy works on how to make our work flow more smoothly	-2	-1	0	+1	+2
g. the number of technicians on duty usually is sufficient to meet patient care needs.	-2	-1	0	+1	+2
h. my pharmacy has less than adequate administrative support (for example: support for inventory control and ordering, scheduling and computer upgrades).	-2	-1	0	+1	+2
i. the pharmacy technicians are competent and well-trained for their jobs.	-2	-1	0	+1	+2
j. the flow of work in my pharmacy is very well-organized	-2	-1	0	+1	+2
k. my pharmacy has enough technological resources to do a good job.	-2	-1	0	+1	+2
l. there is additional staff to move into the pharmacy during times of peak demand.	-2	-1	0	+1	+2
m. my co-workers and I evaluate how well our work is organized.	-2	-1	0	+1	+2
n. pharmacy technicians understand the difference between their work and the pharmacist's.	-2	-1	0	+1	+2

8. Here are some *statements about pharmaceutical care*. How much do you agree or disagree with each of them? (Please answer according to what you believe the situation *actually is*, ***not*** what you hope it might be.)

ANSWER CODES:
Strongly Disagree = -2
Disagree = -1
Neither Agree nor Disagree = 0
Agree = +1
Strongly Agree = +2

a. Practicing pharmaceutical care is more rewarding than traditional (i.e., dispensing-focused) pharmacy practice.	-2	-1	0	+1	+2
b. Pharmaceutical care is <u>not</u> revolutionizing the practice of pharmacy.	-2	-1	0	+1	+2
c. The practice of pharmaceutical care is an obligation of all pharmacists.	-2	-1	0	+1	+2
d. Practicing pharmaceutical care does <u>not</u> endanger the physician-patient relationship.	-2	-1	0	+1	+2
e. Pharmaceutical care is a giant step forward in the practice of pharmacy	-2	-1	0	+1	+2
f. The improvement of the public health does <u>not</u> require pharmaceutical care.	-2	-1	0	+1	+2
g. Following up on the success or failure of the drug therapy of patients is <u>not</u> the job of the staff in a pharmacy	-2	-1	0	+1	+2
h. Pharmaceutical care allows all pharmacy staff to more effectively apply their knowledge than previously has been possible.	-2	-1	0	+1	+2
i. Practicing pharmaceutical care gives pharmacy greater professional status	-2	-1	0	+1	+2
j. Pharmaceutical care is just an impressive name for the job of doing the physician's unwanted chores	-2	-1	0	+1	+2

9. Here are some statements about the way things are done at work. For each of these statements, use the answer codes provided.

QUESTION 1: How much "say" do you think pharmacists ***should*** have in the following areas of the job?

QUESTION 2: How much "say" do you ***actually*** have in the following areas of your job?

	PHARMACISTS ***SHOULD*** HAVE: None = 0, Little = 1, Some = 2, Quite a Bit = 3, Very Much = 4					I ***ACTUALLY*** HAVE: None = 0, Little = 1, Some = 2, Quite a Bit = 3, Very Much = 4				
a. The way the work is done.	0	1	2	3	4	0	1	2	3	4
b. Keeping track of quality.	0	1	2	3	4	0	1	2	3	4
c. How fast the work is done.	0	1	2	3	4	0	1	2	3	4
d. How much work pharmacy staff should do in a day.	0	1	2	3	4	0	1	2	3	4
e. Who should do what job in your pharmacy.	0	1	2	3	4	0	1	2	3	4
f. When the work day begins and ends. . .	0	1	2	3	4	0	1	2	3	4
g. Who should be fired if they do a bad job or don't come to work.	0	1	2	3	4	0	1	2	3	4
h. Who should be hired to work in your pharmacy.	0	1	2	3	4	0	1	2	3	4
i. Handling complaints or grievances. . . .	0	1	2	3	4	0	1	2	3	4
j. Who gets promoted.	0	1	2	3	4	0	1	2	3	4
k. The use of new technology.	0	1	2	3	4	0	1	2	3	4
l. The selection of your supervisor	0	1	2	3	4	0	1	2	3	4

10. Here are some statements about *pharmacists as professionals*. Indicate the extent to which you agree or disagree with each statement using the answer codes provided.

ANSWER CODES:
Strongly disagree = -2
Disagree = -1
Neither agree nor disagree = 0
Agree = +1
Strongly Agree = +2

a. Pharmacists should be the only ones who determine and set standards for their practice.	-2	-1	0	+1	+2
b. Pharmacists' employers should establish specific guidelines for making professional decisions in pharmacy work.	-2	-1	0	+1	+2
c. The only professional standards a pharmacist should accept are those established by his/her colleagues.	-2	-1	0	+1	+2
d. The opportunity to exercise professional judgment in a pharmacist's work should be determined by his/her employer.	-2	-1	0	+1	+2
e. A pharmacist should be willing to modify the basic standards which guide his/her practice in order to conform to the wishes of the public.	-2	-1	0	+1	+2
f. A pharmacist's employer has the right to review and change the professional decisions a pharmacist makes.	-2	-1	0	+1	+2
g. Only another pharmacist is qualified to judge the competence of a pharmacist's work.	-2	-1	0	+1	+2
h. As a pharmacist, I would depart from my employer's policies when I judge it professionally necessary.	-2	-1	0	+1	+2
i. Pharmacists who violate professional standards should be judged only by their pharmacy colleagues.	-2	-1	0	+1	+2
j. A pharmacist's employer has the right to change his/her professional decisions because the employer is the one who pays the pharmacist's salary.	-2	-1	0	+1	+2
k. Non-pharmacists should be allowed input into the development of standards for professional competence which guide a pharmacist's professional practice	-2	-1	0	+1	+2
l. My employer has no right to place limitations on the decisions I make concerning professional matters.	-2	-1	0	+1	+2

11. Here are some statements about how you feel about the place *where you work*. How much do you agree or disagree with each statement?

ANSWER CODES:
Strongly Disagree = -3
Moderately Disagree = -2
Slightly Disagree = -1
Neither Disagree nor Agree = 0
Slightly Agree = +1
Moderately Agree = +2
Strongly Agree = +3

a. I am willing to put in a great deal of effort beyond what is normally expected	-3	-2	-1	0	+1	+2	+3
b. I talk up this organization to friends as a great one to work for	-3	-2	-1	0	+1	+2	+3
c. I feel very *little* loyalty to this organization	-3	-2	-1	0	+1	+2	+3
d. I would accept almost any type of job assignment in order to work for this organization	-3	-2	-1	0	+1	+2	+3
e. I find that my values and this organization's values are very similar	-3	-2	-1	0	+1	+2	+3
f. I am proud to tell others that I am a part of this organization.	-3	-2	-1	0	+1	+2	+3
g. I could just as well be working for a *different* organization as long as the type of work is similar	-3	-2	-1	0	+1	+2	+3
h. This organization really inspires the very best in me in the way of job performance	-3	-2	-1	0	+1	+2	+3
i. It would take very little change in my present circumstances to cause me to leave this organization	-3	-2	-1	0	+1	+2	+3
j. I am extremely glad that I chose this organization over others I was considering at the time I joined	-3	-2	-1	0	+1	+2	+3
k. There's *not* too much to be gained by sticking with this organization indefinitely	-3	-2	-1	0	+1	+2	+3
l. I often find it difficult to agree with this organization's policies on important matters relating to its employees	-3	-2	-1	0	+1	+2	+3
m. I really care about the fate of this organization	-3	-2	-1	0	+1	+2	+3
n. For me, this is the best of all possible organizations for which to work.	-3	-2	-1	0	+1	+2	+3
o. Deciding to work for this organization was a definite *mistake* on my part	-3	-2	-1	0	+1	+2	+3

APPENDIX F:

Analysis of Relationships between Organizational Commitment and both Perceived Ease of Finding a Better Job and Hourly Wage

APPENDIX F

Analysis of Relationships between Organizational Commitment and both Perceived Ease of Finding a Better Job and Hourly Wage

Some might argue that economic and/or job market factors may erase or overshadow the effects of participation in workplace decision making on organizational commitment. This analysis is presented to explore that issue.

A scale of items asking respondents how easy or difficult it would be to find a job with better attributes was also included in the Time 2 questionnaire. This scale was not included in formal study theory or analysis but is presented here as part of alternative explanations for organizational commitment. Respondents were also asked about their monetary compensation at their Time 2 current worksite.

Descriptive statistics for Two-Wave Respondents' monetary compensation (converted to Hourly Wage) are as follows: (mean = $26.51, s.d. = $8.41, skewness = -0.87). Table F.1 presents the individual items, descriptive statistics and scale performance data for Perceived Ease of Finding a Better Job. Tables F.2 and F.3 present variations on the fitted model predicting Organizational Commitment that was presented in Table 5.12. In Table F.1, it can be seen by a scale mean of 3.02 on a 1 to 5 scale that Two-Wave Respondents generally perceived that it would be neither easy nor difficult to find a better job.

Table F.2 presents the first of two alternative models based on the fitted model

predicting Organizational Commitment In Alternative Model 1, both Hourly Wage and Perceived Ease of Finding a Better Job are added to the Fitted Model regression presented in Table 5.12 . Compared to the predictive power of the fitted model in Table 5.12, with an $R^2 = 0.559$, this equation explains 12.7% more of the variance in the prediction of Organizational Commitment. Yet, there is only a slight change in the betas for Perceived Control, Pharmaceutical Care Attitudes and Size. The coefficient for Hourly Wage is not significant (beta = 0.121, $p = 0.12$). The largest contributor to the statistical prediction of Organizational Commitment in this equation is Perceived Ease of Finding a Better Job (beta = -0.357, $p < 0.01$).

So, without changing the relative contributions of the other variables from the Fitted Model in Table 5.12, the addition of Perceived Ease of Finding a Better Job variable takes us further in our understanding of the predictors of Organizational Commitment. Consistent with the bivariate relationship between Perceived Easiness of Finding a Better Job and Organizational Commitment ($r = -0.514$, 1-tailed $p < 0.01$), as the perception of being able to find a better job goes up, commitment to the employing organization goes down while all the other predictor variables from the Table 5.12 Fitted Model retain their contributions to the explanation, including Perceived Control. These relationships remain essentially unchanged in Alternative Model 2 (Table F.3) where Hourly Wage has been removed from the equation and all predictor variables have statistically significant betas similar to Alternative Model 1 and only 1 percent less of the variance is explained.

Table F.1 Perceived Ease of Finding a Better Job Scale

	Alpha = 0.59 (n = 127)	
	Mean (S.D.)	**Item to Total Correl.**
Perceived Ease of Finding a Better Job Scale	**3.02 (1.15)**	
How easy or difficult would it be for you to find another pharmacy job with:		
A better work schedule	2.81 (1.25)	0.14
Better co-workers	2.55 (1.05)	0.36
Less workload	2.83 (1.13)	0.46
Better pay	3.57 (1.25)	0.11
More intellectual challenge	3.21 (1.04)	0.34
More patient contact	3.16 (1.17)	0.16
Better advancement opportunity	3.09 (1.04)	0.30
Better benefits	3.04 (1.19)	0.21
Less stress	2.91 (1.19)	0.45

Item Responses:

1 = Very Difficult
2 = Difficult
3 = Neither Easy nor Difficult
4 = Easy
5 = Very Easy

Table F.2. Alternative Model 1 Predicting Organizational Commitment

	Alternative Model 1	
	beta	**Sig.**
Alternative Model 1		
Perceived Control	0.259	(0.00)
Pharmaceutical Care Attitudes	0.178	(0.01)
PSO Current Site	0.265	(0.00)
Organization of Work	0.160	(0.04)
Size	0.230	(0.00)
Hourly Wage	0.121	(0.12)
Perceived Ease of Finding a Better Job	-0.357	(0.00)
R		0.748
R^2		0.559
Adjusted R^2		0.529
F; d.f.(residual), d.f. (model)		18.13; 100, 7
Significance		0.000

Table F.3. Alternative Model 2 Predicting Organizational Commitment

	Alternative Model 2	
	beta	**Sig.**
Alternative Model 2		
Perceived Control	0.268	(0.00)
Pharmaceutical Care Attitudes	0.172	(0.01)
PSO Current Site	0.213	(0.01)
Organization of Work	0.191	(0.01)
Size	0.192	(0.00)
Perceived Ease of Finding a Better Job	-0.364	(0.00)
R		0.741
R^2		0.549
Adjusted R^2		0.524
F; d.f.(residual), d.f. (model)		22.30; 110, 6
Significance		0.000