DEPROFESSIONALIZATION OF THE CORPORATE OPTOMETRIST?
CONTRASTING CHARACTERISTICS OF THE BUREAUCRATIC
AND PROFESSIONAL MODELS

by

R. Michael Taylor

FERRIS J. RITCHEY
JOHN G. CLASSE
SEAN-SHONG HWANG
WILLIAM C. COCKERHAM
S. ROBERT HERNANDEZ

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DEPROFESSIONALIZATION OF THE CORPORATE OPTOMETRIST?
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Roland Michael Taylor

Medical Sociology

This study will investigate whether professional status differs between corporate and noncorporate optometrists by comparing their levels of autonomy, income, and job satisfaction. According to Freidson’s ideal model, a professional maintains high levels of autonomy and income but the opposite is usually true for employees of Weber’s traditional bureaucracy. Bureaucracies employ formally rational processes such as hierarchical decision-making and limited employee profit sharing which have affects on healthcare professional independence. The primary objective of many American corporations is to maximize profits for shareholders. While the health professional also strives to maximize profits, this objective is often balanced with an ethical code to protect the patient’s interests. As the ideal profession and bureaucracy meet, deprofessionalization of the corporate optometrist may occur. The potential conflicts arising from the marriage of these two models may affect all optometrists’ professional status and the quality of patient care in the long term.
DEDICATION

To Christy, Thomas, Benjamin, Mom, Dad, and Dr. Ferris Ritchey who walked this very long road with me without complaint.
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LIST OF ABBREVIATIONS

AMA - American Medical Association
AOA - American Optometric Association
CPT - Current Procedural Terminology
IRB - Institutional Review Board
MTOS - Middle Tennessee Optometric Society
RVU - Relative Value Units
TOA - Tennessee Optometric Association
ANOVA – Analysis of Covariance
DF – Degrees of Freedom
CHAPTER 1

INTRODUCTION

Purpose of the Study

In the words of Abbot (1998), “The professions dominate our world. They heal our bodies, measure our profits, save our souls. Yet we are ambivalent about them” (p. 1). He is referring to the many perspectives concerning the social phenomenon called professionalism. To some, professionalization is a triumphant middle class success story, to others it is a chronicle of monopoly and abuse of power. Regardless of the perspective, all agree that it is an important research topic because professionalization remains the dominant organizing principle in the healthcare industry (Freidson, 2001).

In a broad sense, this study will focus on the professional status of American optometrists as it is impacted by corporatization. More specifically, this study will compare private and corporate optometrists on measures of professionalization formulated from the ideal professional model (Freidson, 2001). The degree of bureaucratic affiliation will serve as a key independent variable, while autonomy, net income, and job satisfaction will be key dependent variables.

The American Optometric Association (AOA; 2002) defines an optometrist as an independent primary healthcare provider who examines, diagnoses, treats, and manages diseases and disorders of the visual system, the eye, and associated structures, as well as diagnosing related systemic conditions. The core optometric procedure is the correction of optical defects of vision based on the study of physics. The application of optics is an
essential component of any modern society. Good visual acuity maximizes the way we learn, work, and play. Many individuals below 40 years of age and most over that age need ocular assistance to perform numerous daily activities. Without diagnostic and prescriptive services, many individuals in society would be unable to function at their current levels.

Optometry has met all the theoretical criteria of a profession set forth by seminal works in the sociology of occupations literature (Freidson 1988; Freidson 2001; Goode 1960). Central to any profession are claims of esoteric knowledge and full autonomy in functional decision making. Prerequisites of professional status are, esoteric knowledge and autonomy which are acknowledged by the public, external business interests, and governmental institutions (Salloway, Hafferty, & Vissing, 1997). When one or more of the aforementioned external forces gains control of territory traditionally dominated by a profession, then deprofessionalization has occurred. Though professionalism remains the primary organizing principle in the healthcare industry, corporate bureaucracies and other external factors have gained more influence in the last 30 years.

Understandably, corporations began to enter the healthcare industry in greater numbers because of the increasing amount of money spent on maintaining health in the United States each year. In the eye care industry alone, $23.4 billion is spent annually (Classe, Hisaka, Lakin, Kamen, & Rounds, 2004). This figure is likely to grow because of American demographic and consumer trends. In the past 20 years, some private businesses grew into corporate chains in an attempt to tap this expanding market. In the last decade, some retail-based companies such as Wal-Mart have entered the market.
Clinical autonomy may suffer if corporations influence doctors to focus mainly on revenue and adhere less to scientifically based “best practices.” As medical care in the United States became more of a corporate enterprise, Navarro (1988) predicted that decision making would become a source of contention between healthcare professionals and corporations entering the field because both groups' financial interests are at stake. In addition to financial interests, ethical concerns dictate that doctors resist a completely economic perspective.

Job satisfaction may decline as optometrists are forced into a hierarchical structure and are made to focus on more routine tasks. Occupational prestige, related to job satisfaction, may decline if the public feels that the profession is more interested in revenue than client well-being. The occupational prestige of the healthcare professional is partly based upon the public’s perception of a caring ethos (Freidson, 2001).

Income may decline over time as fewer private optometrists are able to compete with chains and as corporate imperatives create a more dependent workforce. The father of bureaucracy and rationalization theory, Weber (1978), described the ideal bureaucracy as an institution where the workers do not possess ownership. Inadvertently, this limits the workers' income, thus creating a dependable source of labor for the organization.

Conceptual Framework

 Corporations involved in the business of optometry highly resemble Weber’s (1978) description of the ideal bureaucracy. The word root, bureau, which was originally French and then borrowed into German, means “desk used to dispense written rules or
orders.” The creators of the word *bureaucracy* invented it to suggest that the method of rule was becoming the master. These methods include standardization, technological proficiency, and a hierarchical decision-making structure designed to maximize efficiency (Ritzer, 2000). These gains in efficiency lead to greater corporate profit in a capitalist society. These “means to an end” organizational processes were called formal rationality by Weber. Obviously, the formally rational processes of a bureaucracy can stymie professional independence.

Autonomy, which is the ability to work unencumbered by direct supervision, lies at the heart of the professional model. As with most of the sociology of occupations literature, Freidson’s (2001) inductive model is based largely upon the domains of American medicine and law. To integrate the professionalization research, Freidson (2001) has suggested using an ideal model of professions as an analytical tool. Like Weber’s (1978) ideal bureaucracy model, the ideal profession is an abstract yardstick to test against reality in time and space. Contrary to the bureaucracy model’s fundamental processes that support corporate control, the ideal profession model entails clinical autonomy, control of training, domain monopoly, and a caring ethos.

Because this project wishes to evaluate the product of bureaucratic and professional unions, Freidson’s (2001) sociology of professions model is the most suitable and abstract description of this reality. Other sociological theories address the sociology of work, but none are as applicable to this project. Marx (1964) focused mainly on the woes of nonprofessional workers brought about by the division of labor. Durkheim (1984) lauded the division of labor in society, but like Marx, did not construct a detailed
theory about professions. Postmodernism was not used because it predicts a fragmentation of traditional social structure. Because this project studies the contrast of two traditional structures, postmodern theory is not as relevant.

**Brief History of American Professions in the 20th Century**

Professional or “guild” power grew in the United States from the 1930s to the early 1960s (Krause, 1996). Lobbying on the federal level established licensing for several new semiprofessions. As discussed in greater detail in chapter two, optometry has developed into a profession in this time span. The transformation of the healthcare delivery system continues to this day and is well described in the following quote by Robinson (1999) from *The Corporate Practice of Medicine*: “the change convulsing healthcare is national in scope, with turbulence everywhere, innovation replacing inertia, and risk replacing security” (p. 2). Robinson believes healthcare will improve as deprofessionalization proceeds. The turmoil spurred by high costs has caused many professions to renegotiate their professional status on a fairly continual basis.

American medical doctors are usually considered prototypic professionals because they came the closest to the ideal in the 1950s and still wield considerable power (Freidson, 2001). For this reason, most of the sociology of occupations literature is largely based on medicine. There are no references to optometry in the sociology of occupations literature and few specific citations about deprofessionalization in the optometric literature.
When describing the process of medical professionalization, theorists commonly cite structural factors such as educational reform (Larson, 1997), medical regulation (Freidson, 1970), and control of the marketplace (Starr, 1982). However, the medical deprofessionalization movement has accelerated in the last 25 years due to consumerism, market forces, and governmental regulation (Ritzer & Walczak, 1988; Robinson, 1999).

Responding to the decline in independence, medical doctors are seriously considering unionization and many are practicing in groups. Ritchey (1981) suggested that the medical profession has necessarily adopted a more formally rational modus operandi in response to external threats such as medical malpractice suits.

The pharmacist has seen an increase in corporate control (Higby, 1997). Most pharmacists who work in retail pharmacies have a serious potential conflict of interest. They are expected to dispense drugs in a knowledgeable and ethical manner, but may be encouraged to sell higher priced products when less expensive ones are available. Some also question the viability of independently owned pharmacist businesses in the face of fierce corporate competition. In *The Sociology of the Professions*, Macdonald (1995) notes that once an occupational group acquires knowledge, they are not indefinitely or immediately assured freedom and income. Often these safe havens are created through power struggles involving legislative efforts.

Contrary to many healthcare professions, optometry has gained professional ground in the last quarter of the 20th century (Classe et al., 1997). Other semiprofessions, such as physical therapy, experienced professional status enhancement as well (Ritchey, Pinkston, Goldbaum, & Heerten, 1989).
Some of the optometric milestones during this time include Medicare billing rights, power to prescribe some pharmaceuticals, and ability to treat more pathology. Also, Oklahoma optometrists are permitted to perform laser eye surgery. This project wishes to evaluate whether some of the professional ground gained in the last 25 years is being traded for perquisites provided by corporate affiliation.

The Causes and Implications of Optometric Deprofessionalization

This section briefly discusses possible implications of optometric deprofessionalization in respect to the dependent variables: clinical autonomy, income, and job satisfaction. First, Table 1 summarizes points of strain between the two models that might result in deprofessionalization on the three dimensions in question.

Table 1

The Strain Between Corporate Bureaucracy and Professionalism

<table>
<thead>
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<th>Professional</th>
<th>Corporate Bureaucracy</th>
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<tr>
<td>Hierarchy</td>
<td>Autonomy based on esoteric discretionary knowledge</td>
<td>Hierarchical with centralized authority</td>
<td>Autonomy</td>
</tr>
<tr>
<td>Mode of operations</td>
<td>Efficiency balanced with a humanistic perspective</td>
<td>Most rationally efficient and predictable methodology</td>
<td>Autonomy</td>
</tr>
<tr>
<td>Formal written regulations</td>
<td>Less formally written rules and regulations</td>
<td>More formally written rules and regulations</td>
<td>Autonomy</td>
</tr>
<tr>
<td>Discipline</td>
<td>Peer driven</td>
<td>Hierarchical with centralized authority</td>
<td>Autonomy, Job Satisfaction</td>
</tr>
<tr>
<td>Degree of specialization</td>
<td>More of a primary care role, less specialization</td>
<td>Role is usually more specialized to increase efficiency</td>
<td>Autonomy, Job Satisfaction</td>
</tr>
<tr>
<td>Ownership</td>
<td>Possible ownership of means of production</td>
<td>Less worker ownership and salaried employees</td>
<td>Income, Job Satisfaction</td>
</tr>
<tr>
<td>Objective or ideology</td>
<td>Provide service based on caring ethos before profit</td>
<td>Maximize profit within legal limits</td>
<td>Autonomy, Job Satisfaction</td>
</tr>
</tbody>
</table>
Clinical Autonomy

Optometric knowledge is scientifically derived and applied for the patient’s betterment and the professional’s profit. If the equilibrium shifts too far to the profit side because of personal or corporate gain, the patient and ultimately the profession may suffer. Corporate control could conceivably reduce a doctor to a technician selling products suggested by the employer within a 15-minute window.

Adopting a strict formally rational or profit mode of operations is usually not in the best interest of the patient. An extreme example of a period during which professionals lost complete control to corporate interest is described by Smith (1981) as the social production of black lung disease. Poor occupational health practices in early 20th century Ozark coal mining operations caused many miners to develop a fatal long-term disease called black lung. The medical doctors, who were employed by the mining companies not only ignored this condition but promoted it as a buffer against contracting tuberculosis. Black lung was not deemed a disease until physician care was separated from corporate authority.

Granted, direct fatalities are not a likely possibility in a scenario where optometrists have corporate bosses; however optometrists are part of the primary care network and corporate influence could conceivably affect the structure of the role. Some of the illnesses the optometric professional is trained to identify and refer to medical doctors include cataracts, diabetes, potential stroke symptoms, hypertension, and cancer. Optometrists also treat some forms of ocular pathology and remove superficially located foreign bodies. These treatments are additional to the basic service optometrists provide
called refraction, which is the fitting of corrective lenses. Adequate refraction allows 55% of the U.S. population to perform such fundamental acts as reading or driving.

Some of the subtle challenges to autonomy include corporate imposed patient-doctor time limitations, responsibility for annual revenue growth, and recommending higher priced merchandise. In a commercial setting, an optometric doctor’s performance can be graded solely on corporate revenue.

Some corporate doctors are recommended to see a patient every 15 minutes. In an extreme case, one corporation suggests examining a patient every 7.5 minutes. Fifteen minutes is not always an adequate amount of time depending on the patient’s age and condition. In some cases, adherence to the exam time limitation is taken into consideration during contract renewal. As the time spent per patient declines, overall time in the office may increase. The number of hours at the office for the doctor may increase as some corporations set the goal of a 10% revenue growth each year. This means that hours of coverage must continually expand to the maximum of seven days a week. For the optometrist, such a focus on corporate imperatives at the expense of professional autonomy may eventually lead to emotional burnout and low job performance.

Job Satisfaction

Over time, adoption of a corporate or completely rational mode among optometrists may erode job satisfaction. Specifically, loss of control and less meaningful work may decrease job satisfaction. Optometrists ranked slightly below practicing medical doctors and sociology professors in terms of job satisfaction, which is relatively
high compared to the majority of American occupations (U.S. Bureau of the Census, 1990).

\textit{Income}

Another possibility of more corporate control is a reduction in net income. A characteristic of Weber’s bureaucracy is that employee wages are set at a level at which the individual is dependent upon the organization. This may be because some corporate optometrists offer their services at about half the price of private optometrists. Corporations generate revenue from the efficiencies gained by high volume sales with lower priced goods and services.

Through their lease agreements corporate entities contractually obligate optometrists to set fees that are “competitive”, below those set by professional optometrists. This significantly affects income because the fees for services set by corporate optometrists are also typically below those established for Medicare reimbursement (about 66% in the Birmingham, AL area). For the average optometrist about 60% of patients are reimbursed by insurance plans, and about 25% are paid by Medicare. This means that for every Medicare patient seen, a corporate optometrist receives about 33% less than Medicare will reimburse, so for 25% of patients they get paid less than the government allows. But for fee-for-service patients, which are about 40% of patients seen for the typical optometrist, the corporate optometrist is also being paid 33% less than the “market value”, because they must use “competitive” fees. Thus
corporate optometrists are motivated to spend less time with patients and to maximize the number seen, because they receive less income per patient than professional optometrists.

Summary

The objective of this study is to determine whether corporate pressures are impinging upon the professional status of optometry. This project will compare measures of professionalization between corporate and noncorporate optometrists.

Through professionalization optometrists have gained discretionary decision-making powers, relatively high occupational prestige, and above average incomes. More recently, corporatization may be imposing a managerial model that focuses on profits for shareholders by encouraging standardization, efficiency, technological proficiency, and hierarchical decision making. These two models are at opposite ends of the spectrum, and this project wishes to investigate how their meeting is shaping the profession of optometry.
CHAPTER 2
LITERATURE REVIEW

The Sociology of Professions Literature

Introduction

The purpose of this chapter is to summarize the sociology of professions literature and then apply it to the discipline of optometry. The chapter will begin by giving a brief evolutionary description of the sociology of professions literature. The medical establishment will be discussed next because it has come the closest to the ideal professional model, and has been focused on by sociological theorists. Next deprofessionalization forces that apply to both medicine and optometry will be discussed. Finally, it will document optometry’s march towards professionalism and examine contemporary optometry.

The Evolution of Professionalization Theory

The first sociological studies of the professions were influenced by the functionalist perspective and focused solely on common professional traits (Durkheim, 1984; Parsons, 1975). The next wave of researchers studied the added dimension of structural factors that helped create and maintain a profession’s hierarchical position in the workforce (Freidson, 1970; Larson, 1977; Starr, 1982). The structural factors include formal extended education, credential systems, legal action, and monopoly of a market.
Classic professionalization theories assume the constant linear growth of professional power and do not consider the possibility of regression (Abbot, 1988). To a lesser extent, others have focused on the process of deprofessionalization (Haug 1973). Professionalization and deprofessionalization have both largely focused on American medicine. Very little attention is given to optometry in the sociology of professionalization literature. This is despite the fact that contemporary optometry meets all criterion set forth by these theorists. Medical doctors, lawyers, professors, and scientists are considered the most professional occupations (Ritzer & Walczak, 1988). Groups with lower educational requirements and prestige, such as pharmacists, chiropractors, or engineers are referred to as semi professions. Then come the predominantly female quasiprofessions with comparable educational standards but lower pay and prestige than male-dominated marginal professions. These include librarians, registered nurses, social workers, and schoolteachers. Finally, there are paraprofessionals and technical workers who serve professions.

Contemporary experts generally agree that a profession is an occupational group applying abstract knowledge (Abbot, 1988; Freidson, 1970, 2001; Macdonald, 1995). Application of this abstract knowledge is controlled exclusively by the occupation. Control of esoteric knowledge and associated autonomy are implicitly and explicitly sanctioned by a society’s public, market, and government.

The societal blessing of professional autonomy and monopoly in a democratic nation is not a static phenomenon. Professionalization exists in a dynamic society of conflicting interests where members are continually renegotiating their social contracts to
gain or defend their interests. Many professions are born from political struggle and maintain their grip through the same interprofessional boundary conflicts (Ritchey et al., 1989). Professionalism occurs in the context of changing market conditions and optometry, ophthalmology, and opticianry have all legally fought for the right to refract at one time or another in the last hundred years (Classe 1989). What constitutes one profession now may cease to exist or evolve into several different professions in the future. The profession of optometry actually evolved from the ranks of opticians, which split into refractive and dispensing factions, leaving present-day opticians limited to making and selling merchandise.

This continual process of renegotiation exists on at least two levels. On a societal level, professionalization is defined as the social and political process by which members of occupations undertake to secure mandates that exclude others from performing the same socially recognized services. This mandate is often acquired through a licensing process proceeded by group sponsored legal action.

On a micro level, professionals exhibit normative behaviors that correspond to the professional consciousness. Group members must exhibit mundane daily behaviors that reflect a desire to belong to and maintain the profession. The individual’s desire to maintain a profession is integral, and no profession or social movement can survive without it (Morrisink, 2001). One of the most widely cited professional success stories whose members exhibited this consciousness will be discussed next.
The Prototypic Profession

The preponderance of medical sociology literature focused on how allopathic physicians created and maintained a model that was closest to the ideal (Macdonald, 1995). Larson (1977) described the modern medical profession, which he regarded as prestigious based on expertise, as an opportunity that has been seized mainly by upwardly mobile 19th and 20th century middle class persons. Paradoxically, medicine was not highly regarded at the beginning of the 20th century (Starr, 1982). The Flexner (1910) report exposed the low standards in medical education. Reforms concentrated on making education more selective, standardized, and under the physician’s control. This led to educational credentials and licenses granted by examining boards dominated by allopathic physicians.

Despite recent assaults against its autonomy powers, the medical profession is still considered closest to the ideal model. Its powers rest upon a theoretically based discretionary knowledge and skill that is given special jurisdiction in the labor market. Medical doctors are formally trained in higher education to master the knowledge and produce qualifying credentials. Lastly, most show an ideology that asserts greater commitment to the service of humanity.

The two perspectives that address the possibility of moving away from the ideal are the deprofessionalization position (Haug, 1973; Haug & Levan, 1983; Haug & Levan 1988) and the proletarianism position (McKinlay & Arches, 1985). Both perspectives propose that the changing conditions signal waning professional autonomy for the medical profession. Freidson (1988, 1994) is one of the main contributors to the
literature and has argued in the past that medicine’s professional power had not changed significantly. He recently reversed this conclusion by claiming the medical establishment’s power base has begun to yield to the pressure (2001). He believed this trend will continue in the future due to contemporary deprofessionalization forces.

Deprofessionalization Factors

Forces threatening American healthcare professionalization range from the increasingly educated American citizen to the large corporate bureaucracy. The next section will discuss several of the commonly cited external factors threatening medical independence. These external factors are compounded by a weakening professional infrastructure related to factors such as specialty fragmentation.

Starr (1982) identified the large conglomerate as a catalyst for comprehensive change in the American healthcare system. Medicare and Medicaid made healthcare more lucrative to providers and thus drew large corporate enterprises into the market. As corporate bureaucracies moved into healthcare, they brought their model of operations with them. This brought conflict over decision-making because the medical and corporate players had conflicting financial interests (Navarro, 1988). Financial interests aside, the professional and corporate model of operation are very different and have created friction. Corporations employ a hierarchical standardized operating model that runs counter to professional independence.

Governmental bureaucracy has also restricted professional autonomy. The government has directly intervened by implementing cost-saving tools such as the current procedural terminology (CPT) program to counter unchecked Medicare spending.
The government’s judicial arm also hand down court rulings that set professional borders. The courts weakened the professional monopoly by ruling against the American Medical Association (AMA) in antitrust cases brought by alternative practitioners (Miller, 1999).

In addition to bureaucratic pressure, the individual or patient is more willing to challenge the contemporary physician’s authority. Media sources abound through which persons with average reading skills can educate themselves, in a lay fashion, about treatment options and outcomes. Commercials constantly encourage patients to speak to their doctors about the latest drug therapy. Patient interest in comanagement of their health with a physician has grown substantially (Cockerham, Kunz, & Lueschen, 1988; Haug & Lavin, 1983).

Not all theorists agree that a medical profession should view these challenges to its authority negatively. In fact, Light’s (2000) theory of countervailing powers suggests that selective pressures simply made the medical profession more fit for survival. Light proposed that the lack of counterbalances in the past led to imbalances in the form of excessive costs that invited unwanted state and corporate intervention. Paradoxically, these pressures led to better outcomes and greater efficiency, which equates to a stronger medical establishment in some respects.

The purpose of this study is to determine how optometry is responding to many of the same pressures as medicine. One difference is that medicine has been a deprofessionization force for optometry at points in history. As we will discuss next, the professionalization of optometry has been an uphill battle from the beginning.
Overview of Optometry

A Brief History of Optometry

Some of the basic scientific discoveries that contemporary optometrists continue to depend upon today reach back to Plato, Aristotle, Archimedes, and Euclid (Classe et al., 1997). However, the direct occupational ancestors of contemporary optometrists were European opticians who organized into guilds (Classe et al., 1997). These guilds were much like professions because they collectively influenced the going price for goods and services. Controlling the number of trained craftsmen and the length of training helped influence prices. As these opticianry craftsmen immigrated to America, so did their trade.

It was not until a Dutch physician wrote a seminal work on the subject of refraction in 1864 that medical doctors started refracting in mass (Donders 1864). Before this time physicians distained refraction and restricted themselves to clinical treatment leaving the service to opticians (Classe, 1989). Refraction involves the process of determining the power of lens a patient needs in order to obtain the best-corrected visual acuity.

Towards the end of the 1870’s, a three-fold eye care system had developed: eye physicians, refracting opticians, and dispensing opticians. Refracting opticians of the time made it clear that they did not intend to diagnose and treat ocular disease. The primary goal was the correction of optical defects of vision based on the study of physics. Dispensing opticians provided eyewear based upon prescriptions written by physicians (ophthalmologists or oculists) and thus chose not to challenge the medical profession.
The first significant step in the optometric professionalization process consisted of legislative efforts that included obtaining legal recognition and certification at the state level. But it was necessary to show cause for legislating on the subject at all. Legislators would not consider and enact legislation just to create a restricted profession to benefit one specific group. They had to show that the general population would benefit from legislation. However, this was not difficult because there were absolutely no restrictions on the practice of refracting and selling spectacles. There were many reports of individuals' eyesight being ruined by unethical spectacle peddlers whose only objective was financial gain. Public interest in licensing was created by popular accounts of exploitation (Normole, 2002).

It is not surprising that controversy is still present concerning the profession’s role, because it was born out of legislative conflict (Classe 1989). By the 1890’s some medical doctors considered refraction to be solely within the realm of medicine. Refracting optician, Charles Prentice, is often credited with being the father of modern optometry because he played a central role in these early legislative efforts. His involvement began in 1892 when Prentice refracted a patient and referred him to a New York ophthalmologist for treatment of a pre-existing inflamed eye. The medical doctor wrote a letter to Prentice expressing his disapproval that he charged the patient for refractive services. This experience motivated Prentice to begin working on a refraction regulation bill, which ultimately sparked a nationwide turf battle.

The New York Medical Society agreed to expel any physician sending a patient to refracting opticians and lobbied against Prentice’s newly submitted bill to regulate
optometry. Though the bill was defeated in New York, other bills began to arise in state legislatures around the country. These bills were more successful in states where the medical associations were not as well organized. The argument proposed by optometric proponents against organized medicine was that ocular refraction was not, and never would, be part of medicine. It is an applied arm of optical science, founded on the discoveries of physicists and opticians through the ages to modern times. It adapts the light waves entering the eye to produce focused and single vision with the least amount of abnormal exertion on the part of the eye.

The first to pass was a 1901 Minnesota bill, and the last state entity to regulate optometry was the District of Columbia in 1924. Though these legislative successes were a huge step forward for the budding profession, they commonly held two weaknesses. These provisions became popularly known as the grandfather clause and physician exemption. Though they did eventually help to improve standards, the bills were usually a political compromise because every currently practicing refracting optician automatically gained a license without evaluation. The other provision exempted all medical doctors from the laws regulating optometry.

Additionally, the new state laws lacked the means to punish those who performed inadequate exams or sold substandard goods. Optometrists repeatedly went back to state legislatures from 1920 to the 1940’s to raise practice standards. In this professionalization stage optometry proponents were trying to establish exclusive jurisdiction or shelter created and controlled by occupation negotiation. Freidson asserts
a professional sanctuary is socially justified by a grounded body of theoretically based discretionary knowledge and skill (1994, 2001).

While refracting opticians efforts were successfully creating a profession in the state legislators, medical doctors turned their efforts to the court system (Classe, 1989). In 1903, a refracting traveling optician was prosecuted in Illinois for practicing medicine without a license (People for Use of State Board of Health vs. Smith). After a five year legal battle, the refracting optician in question was exonerated. The Pennsylvania Supreme Court rendered a similar verdict in 1915, deciding that optometry was not a minor branch of medicine (Martin v. Baldi).

Optometry continued its professional progress by increasing educational standards in addition to these successful legal skirmishes. In 1923 the Pennsylvania College of Optometry awarded the first Doctor of Optometry degree. In 1928, New York was the first to pass a bill that allowed only optometrist graduating from a university program to obtain licensure. In 1941, the Association of Schools and Colleges of Optometry was formed. Freidson cites the development of a formal training program lying outside the labor market, which is controlled by the occupation and associated with higher education as another basic professionalization criterion.

In 1944 the American Optometric Association adopted a new code of ethics and it was followed in 1950 by a formal set of practice guidelines. Currently, ethics courses are taught in all optometry graduate programs and each fledging graduate student takes a Hippocratic-type oath upon entering. An ideology that asserts a strong commitment to
performing high quality work rather than maximizing economic gain and efficiency is another professionalization criterion (Freidson 2001).

Optometric professionalization increased its pace from 1955 to 1970 (Classe 1989). It transformed itself through the adoption of new technology and yet more legal battles. In 1961, the state of Oregon found that opticians were not skilled enough to fit contact lenses leaving this lucrative task to optometrists. Relations between optometrists and ophthalmologists improved during this period and optometric income more than doubled.

In the mid-1980s, parity legislation gave optometrists the same standing as medical eye doctors or ophthalmologists for some common procedure treatments (CPTs) under Medicare. Around the same time, the number of exams performed annually by optometrists increased. In 1971, the first drug bill was passed into law in Rhode Island. Optometry has been successful in its efforts to “medicalize” the profession through drug legislation: by 1998 all states had enacted these laws..

As Classe notes, corporations that employed optometrists for merchandising purposes have been another impediment to the professionalization process (1989). While the ophthalmologist-optometrist battles have abated in recent decades, corporations have continued to be a deprofessionalizing force.

In 1928 a ruling was handed down from the Supreme Court which gave state legislatures the power to set limits on corporate activities in the healthcare arena. During the 1930’s and 1940’s there were legal battles in most states between boards of optometry and corporations that provided optometric services. In 1955, the U.S. Supreme Court
decided the prohibition of leasing space within retail stores was constitutional (Williamson v. Lee Optical, 1955). Laws were enacted in forty-five states banning such arrangements until the 1970’s, when these gains were reversed.

In the 1970’s, a minority of commercial optometrists fought legislative efforts designed to restrict or eliminate corporate practice and advertising. The U.S. Supreme Court found that the selection process for the Alabama State Optometry board was unconstitutional (Gibson v. Berryhill, 1973). The courts reasoning was that the board was comprised solely of private practice optometrists and was inherently biased because members held financial interests that influenced their decisions. Due to this opinion, the methodology used to construct state boards was altered throughout the union. In 1976, the Supreme Court found that professions had the right to advertise as well.

More recently optometrists seem to be more on the defensive. A Texas state law (“The Optometry Bill of Rights”) was drafted in response to some of these bureaucratic pressures. In 1981, private optometry doctors in Texas began to realize that the most strategic activity against depprofessionalization from corporations was to focus legislative efforts on those who would limit the scope of optometric practice, instead of on commercial optometrists who worked with them. This “Bill of Rights” protects professional autonomy from any entity that manufactures, wholesales, or retails ophthalmic goods. The state legislation includes the following provisions.
Any person who is a manufacturer, wholesaler, or retailer of ophthalmic goods is prohibited from directly or indirectly controlling or attempting to control the professional judgment, the manner of practice or the practice of an O.D. Controlling or attempting to control the professional judgment, the manner of practice, or the practice of an O.D. includes but is not limited to: Setting or attempting to influence the professional fees of an O.D. Setting or attempting to influence the office hours of an O.D. Restricting or attempting to restrict an O.D.’s freedom to see patients on an appointment basis. Terminating or threatening to terminate any lease, agreement or other relationship in an effort to control the professional judgment, manner of practice of an O.D. (Niemann, 1998, p. 40)

The law formally and specifically protects doctors who ignore corporate suggestions about time management, clinical decisions, and income restrictions.

Though the fortunes of professional wars swing back and forth, optometry is now recognized as a healthcare profession in all states and by agencies of the federal government. Optometry has had an interesting past that could have easily turned out differently at a multitude of junctures. The next section will discuss the contemporary status of optometrists from a macro and micro standpoint.

A Macro Perspective of the Contemporary Optometric Role

The doctor of optometry degree requires completion of a 4-year program at an accredited optometry school preceded by at least 3 years of preoptometric study at an accredited college or university. In 2003, 17 U.S. schools held an accredited status with the Accreditation Council on Optometric Education.

Optometry programs include classroom and laboratory study of visual sciences, as well as clinical training in the diagnosis and treatment of eye disorders. Courses in pharmacology, pathology, optics, vision science, biochemistry, and systemic disease are included. Training includes not only learning how to prescribe glasses and contact lenses
for clarity of sight but also the study of how eyes work together, vergence (pointing of eyes), accommodation (sustaining and changing focus), visual perceptual skills (information processing, spatial skills, visualization, memory), and eye-hand coordination (gross and fine motor skills).

Optometrists are also trained to diagnose and treat naturally occurring eye conditions in addition to superficial foreign body removal. Most optometrists are trained and certified to administer drugs to treat these problems when necessary. Many optometrists perform pre- and postoperative care for eye surgeries including cataracts, retinal detachments, laser refractive surgeries, and diabetic retinopathy.

Optometrists study the rest of the body as well because so many systemic (body) diseases and problems manifest as problems in the eye. Diseases such as diabetes, multiple sclerosis, cancer, hypertension, high cholesterol, stroke, heart disease, herpes simplex, and thyroid problems can cause physical changes in the eye. Some of these diseases, if left untreated, can cause a person to lose sight permanently: for example, diabetes is the leading cause of new blindness in the US. Optometrists can help diagnose and comanage systemic conditions with other healthcare professionals, including ophthalmologists, neurologists, internists, endocrinologists, and family practitioners.

Within optometry, there are several different modes of practice that range from general practice (primary care) to specialties. Some of these specialties include contact lenses, refractive surgery comanagement, dry eye, glaucoma, geriatrics, low vision, neurorehabilitative optometry, sports vision, developmental-behavioral optometry,
pediatrics, vision training, and learning disabilities. Optometrists can also choose to go into vision research or teaching.

There are fellowship programs available to optometrists for specialty certification. Some of the subspecialties are binocular vision, perception and pediatric optometry, cornea and contact lenses, disease and low vision.

Optometrists wishing to teach or do research may study for a master’s or doctoral degree in visual science, physiological optics, neurophysiology, public health, health administration, health information and communication, or health education. Clinical residency programs are available for postgraduate optometrists who wish to obtain a year of specialized training. The field has debated whether to make the residency mandatory. Academic optometrists have been responsible for broadening the scope of the profession further by intellectually delving into many different areas. These include vision therapy, treatment of amblyopia, ocular disease (keratoconus), contact lens specialization, hard-to-fit prescriptions, and low vision. Academic optometrists have been able to obtain support from the National Eye Institute (NEI) for funding of research projects related to optometry rather than ophthalmology, and to participate in NEI-supported national clinical trials with eye physicians.

Practice Patterns

Although many optometrists practice alone, a growing number are in a partnership or group practice. Some optometrists work as salaried employees of other
optometrists, ophthalmologists, hospitals, health maintenance organizations (HMOs), or retail optical stores.

The number of licensed optometrists is expanding with 1,100 doctors graduating each year and around 600 retiring. More than fifty percent of each graduating class is female, though males numerically dominate the practicing demographics at present. In 2000, the annual mean net income for females was about 85% of that for males (AOA, 2001). However, two factors left uncontrolled in this statistic are number of years in practice and hours worked per week.

Optometrists held about 31,000 jobs in 2000, but the number of jobs is greater than the number of practicing optometrists because some optometrists hold two or more jobs. In 1999, 20% worked in a commercial setting and 68% practiced in private offices. The remaining 14% were employed by ophthalmologists, multidisciplinary clinics, or government agencies (Classe et al., 1999).

The mean net income for self-employed optometrists was $148,923 and those otherwise employed reported $119,733 (AOA 2005 survey). A private practitioners peak earnings usually begin after 10 years of business development. Eighty percent of optometrists have $40,000-60,000 in student debt when they graduate. This debt load makes commercial practice attractive because start-up operating expense is minimized. The disadvantages of commercial practice are the lack of long-term security, an earnings ceiling, and limited scope of practice.

This section has attempted to clarify an optometrists’ role. The next section will provide a high level view of optometrists professional neighbors and sometimes
competitors. It is hard to understand the current eyecare market without such a contextual review.

Optometry’s Place Among Eye Care Providers

The nuances between optometrists, ophthalmologists, and opticians are not always well known in a general audience. The next section will give a macro view on how ophthalmologists and opticians differ from optometrists.

*Ophthalmology*

The main difference today between an optometrist and ophthalmologist is that an optometrist has a Doctor of Optometry (O.D.) degree from an optometry school, and an ophthalmologist holds a medical degree. Ophthalmologists study systemic disease, including diagnosis, treatment, and management. Once they earn their general medical degree (M.D.) or osteopathic degree (D.O.), they go on to practice in a required 4-year residency.

A residency in ophthalmology includes learning how to manage and treat eye conditions, infections, and diseases as well as comanaging the systemic problems that can affect the eyes such as diabetes. They receive roughly 6 weeks of training in refraction, so they can prescribe glasses and contact lenses if they choose. It is rare for residency programs to teach visual function, visual motor integration, and vision perception.

Most ophthalmologist training focuses on eye surgery. This includes removal of cataracts, treatment of retinal tears, retinal detachment, hemorrhages, intraocular tumors, strabismus surgery, plastic reconstructive surgery of the eye and surrounding structures, and laser procedures to correct astigmatism and near and farsightedness. They can choose
to specialize in any one area, such as oculoplastics, neuro-ophthalmology, cornea, retina, glaucoma, pediatrics, or strabismus. They can also choose to go into vision research or teaching.

Most of the time, optometrists and ophthalmologists work in conjunction with one another. However, they may disagree on their philosophies of care and treatment strategies based on their training.

Opticians

Opticians are not doctors, but individuals that dispense glasses and sometimes contact lenses. Many operate or work in labs where lenses are ground and fitted into frames. Optometrist and ophthalmologist care is patient centered, but opticians are product centered. They are knowledgeable about lens materials used and appropriate tints or other special features such as antiglare coatings. Some opticians are required to acquire a 1-2 year associate’s degree to become certified in their field, but this varies from state to state. In only about 50% of the states are opticians licensed. They are not heavily trained in eye conditions, ocular disease, or systemic disease that can affect the eyes. In addition, they do not receive training in visual function. Opticians are in the same position today that optometrists were earlier in this century. Today, opticians are trying to expand their roles to include refraction, short of diagnosing or treating disease.

In summary, optometry fits between ophthalmology and the optician. Ophthalmologists study disease, and opticians work with lenses. Optometrists do some of both with a focus on refraction to correct less than normal vision.
A Micro Perspective of the Contemporary Optometric Role

A Day in the Life of an Optometrist

Optometry is a “people profession,” which means that the most rewarding and challenging aspect of being an optometrist is dealing with humanity on a daily basis. No two eyecare patients are alike and each has distinct needs. Optometrists must not only possess technical skills to determine and correct optical defects, but must also have interpersonal skills to deal with patients from every walk of life. Some patients, especially among children and elderly, are sometimes noncompliant during the exam for a variety of reasons.

Additionally, the optometrist must possess business and management skills required to run an often hectic small business. Doctors who administrate their own offices must handle mundane issues like the installation and management of computer systems or ordering supplies and merchandise in advance. Monthly bills, quarterly taxes, yearly continuing education, and licensing fees must be attended to. Managing office staff requires a substantial amount of attention and social-emotional work. Collection of unpaid fees and patient complaints are two of the more unsavory aspects that must be addressed as a small business owner. Optometrists are often very active in civic activities for economic and charitable reasons. These activities may include free screenings and educational speaking engagements for local groups.

Because more than half the population has a visual defect, the first step in an optometry examination is to determine the problem. This process begins with the collection of a patient’s history and then refraction. An optometrist then utilizes objective
and subjective information to determine whether a corrective lens is required. This may include glasses or contact lenses depending on the patient’s history, economic situation, and current physiological condition. A follow-up visit is usually scheduled within a week to determine whether the corrective measures are working properly.

An ocular health evaluation is also performed during the exam to determine if ocular pathology exists. This examination may include, but is not limited to, detection of cataracts, macular degeneration, and glaucoma and complications from diabetes, hypertension, and hypercholesterolemia. Additional testing may be performed to aid in a diagnosis, such as more extensive visual field testing or photography of the eye.

Optometrists may also diagnose and treat what can be loosely termed red eyes. Red eyes can result from infection, trauma, contact lens abuse, or the presence of a more serious systemic disease. Optometrists may also comanage eye surgery patients with ophthalmologists. If the level of ocular disease falls outside the optometrist’s comfort level or scope of practice, then the patient is often referred to an ophthalmologist. The breath and depth of the aforementioned role may be limited to refraction because of its speed and merchandising ramifications if a bureaucratic model is imposed.
CHAPTER 3

THEORETICAL FRAMEWORK

Introduction

The main objective of this chapter is to introduce the hypotheses in the context of an overarching theoretical framework. The first section provides a closer look at Freidson’s (2001) ideal professional model. Second, the rationalization process and ideal bureaucracy originally conceived by Weber are introduced (1978). Third, the strain between the professional and bureaucracy model are stated as hypotheses.

Freidson’s Ideal Type

Freidson’s ideal professional model is an ideal type based on 40 years of sociology of occupation work (Freidson, 2001; Goode, 1960; Weber, 1978). Freidson’s (1970) early work was created during a golden age of the American professions and first focused upon their dominance. However, around the mid-1970’s, physician dominance began to weaken somewhat due to internal fragmentation and external pressures. These struggles for control of healthcare seemed to have shaped his most recent theoretical contributions. In Freidson’s (2001) latest book *Professionalism: The Third Logic on the Practice of Knowledge*, he provided three distinct abstract models that vie for healthcare market control: (a) a bureaucratic model, (b) a free market model, and (c) a professional model.
The first model is a contemporary version of Weber’s bureaucracy that relies on formally rational processes like standardization and hierarchical decision-making. The second is a laissez-faire market, first proposed by Adam Smith and controlled by consumerism. In the “third logic” or ideal professional type, a profession completely controls a particular marketplace domain. Freidson (2001) does note that if any of these three forces were to actualize the ideal and gain absolute power, then healthcare quality would suffer.

Freidson (2001) has applied the ideal type model to the professions, and in doing so created an archetype list of characteristics. It is noted that Goode (1960) had previously proposed a similar list, which Freidson (2001) used as a foundation. An abstract ideal model allows one to determine how much power a profession has lost or gained. In fact, for several processes and structures that inhabit the workplace, one can imagine a continuum with ideal bureaucracy on one end and the ideal profession on the other.

Although the following tenets of Freidson’s (2001) professional model have been stated when describing optometry’s professional development, they are worth revisiting in this section because they summarize the professional model and are an antithesis of the bureaucratic model. These attributes include:

1. Exclusive jurisdiction or shelter grounded in a body of theoretically based discretionary knowledge and skill created and controlled by occupation negotiation.
2. A formal training program lying outside the labor market that produces qualifying credentials, which is controlled by the occupation and associated with higher education.

3. An ideology that asserts greater commitment to doing good work than to economic gain and emphasis on quality of work rather than efficiency. Due to this ethos, professionals are given a special status in society.

The contrasting bureaucracy model in Freidson’s (2001) theory was adopted from Weber’s seminal work and is best described in that context. We will see that an individuals’ source of motivation and control are very different in the bureaucracy model.

Weber: Rationalization and the Ideal Bureaucracy

*The Rationalization Process*

The roots of contemporary bureaucracy theory lie in the work of turn-of-the-20th century German sociologist Max Weber (Ritzer, 2000; Weber, 1978). Weber’s ideas on bureaucracy are integral to the broader theory of the rationalization process. Weber coined the term *formal rationality* to describe the optimum means to achieve a preset organizational goal. This process usually includes efficiency, predictability, calculability, and technology. These four aspects of rationalization are very effective tools used by organizations to increase productivity and decrease inefficiency.

Adoption of formal rationality by some civilizations has had dramatic effects on modern history. It has helped shape modern capitalism, bureaucracy, law, science, and technology. Weber claimed that protestant Calvinist teaching was behind a movement
toward rationality, which encouraged active manipulation of one’s environment for progress. However, well-intended action sometimes creates unintended consequences. This law of unintended consequences is often described as the irrationality of rationality.

Pollution is a widely cited unintended consequence of industrialization, which has improved the lives of millions. The assembly line mode of bureaucratic production is another example whereby improvement can lead to unintended consequences. Productivity gains created by assembly line efficiencies may lead to a work environment where people become “separated” from their work by repetitive specialized tasks (Marx, 1844/1968). Rationalization is both enabling and constraining in that new levels of production are obtainable but may limit human creativity and experience. Control and specialization dictated by rationalization comes into conflict with professional autonomy, income, and prestige. Bureaucracy is the physical extension of the rationalization process. Bureaucratic organizations operate on formal rational processes to set and achieve their objectives.

*Bureaucracy*

The rationalization process can be found at the very core of modern bureaucracies. Weber called this a rational-legal mode of operations (Weber 1978). It adopts the rationalization process to achieve objectives and set goals. This was one of three political authorities he found throughout recorded history, which include the charismatic, traditional, and rational-legal. These concepts mainly address what validates the right of those in power to rule. In industrialized societies rational-legal authority is the
most prevalent today and is based upon pre-agreed rules that were created to achieve an objective.

Characteristics of the ideal type bureaucracy include (a) a hierarchy of offices with centralized authority, (b) decision making according to general rules, (c) division of labor according to function, (d) impersonality, and (e) technological efficiency (Freidson, 2001). If bureaucratic organizations gain more control over optometrists’ actions through hierarchical restraints and the use of formal sanctions, the organization may implement a more economically rational modus operandi. Regarding how bureaucratic formal rationality affects the professional optometric role, the most financially productive mode of practice may include shortening exams and increasing time spent in the office to increase the number of patients purchasing merchandise. This may inadvertently limit doctors’ scopes of practice, leaving them time to perform only minimum core procedures. Routinization of the role may be encouraged by the organization, because as bureaucracies grow larger, task specialization increases.

Income per patient may decrease as opportunities for sole proprietorship or partnership decrease. Lower income inadvertently makes a workforce more dependent on the organization. Some corporations also push for lower professional exam fees because they make their profits from moving high volumes of merchandise. As corporate doctors lower their exam fees, in some markets private doctors may be compelled to follow suit to compete.
Some of a healthcare professional’s prestige is built upon a publicly perceived service ethic. If patients feel they have been objectified for the sake of efficiency, or that the professional is more concerned with profit than their health, prestige may suffer. As prestige suffers, professional leverage with the organization may decline to a point where the optometrist falls further in the hierarchy and comes to be seen as a technician. This may work to decrease professional autonomy and job satisfaction. In modern corporations, those providing direct service are often the lower level employees. As public prestige suffers, the frequency of patient noncompliance may rise. These may also be factors in decreasing job satisfaction. Table 2 summarizes how the bureaucratic model may stifle the optometric role on a concrete level. The table highlights ways in which bureaucratization diminishes professional autonomy, job satisfaction, and income.
Table 2

**Bureaucratic Tenets and Optometric Role Confinement**

<table>
<thead>
<tr>
<th>Hypothesized Dependent Variable</th>
<th>Bureaucratic principles related to dependent professional variables</th>
<th>Possible outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical autonomy</strong></td>
<td>Hierarchy and discipline, formal written rules and regulations, formal rational methods of treatment, and specialization</td>
<td>As clinical autonomy decreases, so does exam length to increase office revenue; doctor time in office increases for same reason; scope of competence decreases; percentage of unneeded merchandise prescribed climbs; if core procedures are negated to save time, lawsuits may increase</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td>Type of ownership</td>
<td>Lower optometrist income and lower exam costs. Bureaucracies need a stable workforce and generate revenue by volume sale of merchandise</td>
</tr>
<tr>
<td><strong>Job Satisfaction</strong></td>
<td>No favoritism toward individual and rational methods</td>
<td>If the caring ethos is traded for a pure profit motive, doctors report to others, degree of specialization and routine increase, and income decreases; job satisfaction may decrease as well.</td>
</tr>
</tbody>
</table>

**Hypotheses**

**Clinical Autonomy**

One critical point of divergence between the professional and bureaucratic models is control of worker activities and primary objectives, which can be summarized as professional autonomy. This involves discretionary clinical decision making for the patient, which is a primary aspect of the professional model (Freidson, 2001). In a bureaucratic mode, a worker’s main objective is to further their supervisors or
organizational designs. Many common rational principles associated with bureaucracies are constructed to maintain control over the individual to increase calculability, efficiency, and profits.

It is hypothesized that as the degree of organizational bureaucratization increases professional autonomy will correspondingly decrease. The latent variable professional autonomy is measured by the observed variables: (1) primary care role, (2) organizational control, and (3) schedules. Primary care role measures the doctor’s degree of role specialization and is hypothesized to be positively related to professional autonomy. Organizational control measures the amount an organization attempts to control the doctor’s actions and is negatively associated with professional autonomy. The observed variable schedule measures the doctor’s control over their time and price schedule. It is hypothesized that schedule should be positively associated with its latent construct.

Income

In an environment where a protected and essential service is being provided, the professional can yield a higher than average income. Conversely, workers are paid a wage depending on their organizational function (Weber, 1978). This wage is often enough to pay expenses and leisure activities but is rarely enough that the worker can become financially independent for an extended period of time, often not until after decades of saving money. This dynamic ensures long-term allegiance to organizational goals. It is from this deviation in payment structure that the working hypotheses are derived. The following factors can be expected to occur at greater rates for optometrists
in corporate settings: It is hypothesized that as the degree of organizational bureaucratization increases net income will decrease.

*Job Satisfaction*

The models contrast on the point of job satisfaction as well. Professions traditionally rank high on job satisfaction respective to other occupations (Treiman, 1970). Some suggest that this is because of their high income potential and high level of education but also a strong service ethic (Freidson, 2001). It is hypothesized that as the degree of professional autonomy decreases, job satisfaction will also decrease. Likewise, as net income decreases job satisfaction will decrease. Job satisfaction is measured by the three observed variables: (1) perceived occupational prestige, (2) availability of resources, and (3) quality of work relationships. All three observed variables are directly related to the latent variable professional autonomy.
Figure 1: Model Specification

- Gender
- Marital Status
- Graduate Debt
- Self Employed
- Townsize
- Yrs in Practice
- Exam Cost
- Net Income
- Job Satisfaction
- Perceived Prestige
- Resources
- Relationships
- Professional Autonomy
- Schedule
- PC Role
- Organizational Structure

Dummy Variables:
- Corporate
- Chain
- Institutional
Chapter Overview

This chapter will focus on the methodology used to generate a representative sample and test the hypotheses. All optometrists who held a state license in Alabama and Tennessee were mailed a questionnaire inquiring about their organizational affiliation, level of professional autonomy, net income, and job satisfaction. These two states were chosen because they have very liberal optometric practice laws. This environment allowed us to measure bureaucratic influences on the optometric role while controlling for legal bias that might confine it.

This chapter will first discuss how a small qualitative project assisted in concrete operationalization of the theoretical concepts described in chapter three. Next the sample generation, scales, data preparation, and analysis in the quantitative component are described.

Qualitative Component

Initially, three unstructured interviews of practicing optometrists were performed to translate theoretical concepts into actual measures of autonomy. The semi-structured interviews lasted approximately one hour each. From the results of these interviews, a draft of a structured questionnaire was constructed and given to 10 optometrists at the 2004 Tennessee Optometric Association (TOA) Conference. Respondents were asked to fill out the instrument and critique it. Valid insights were included in a revised edition of
the questionnaire. Finally, the instrument was given to 20 more optometrists at a Middle Tennessee Optometric Society (MTOS) meeting for additional review and feedback.

The Mail Questionnaire

The sample was provided by the National Optometrist Data Bank, a composite database fed by individual state boards that issue optometric practice licenses. All licensed optometrists from both Alabama and Tennessee were included in this sampling frame. The questionnaire was distributed to 1,023 subjects through the UAB bulk mail system during March of 2005. Survey mail-out packets included a prepaid return-addressed envelope. A second survey was distributed six weeks after the initial mailing to those who had not returned the first. To identify which subjects were sent a reminder card, each questionnaire was numerically labeled. Once a survey was returned, the name and address associated with each number were removed from the active mailing list. Once the mailing phase was over, the key that linked numbers and names together was destroyed.

Six hundred and sixty three or sixty-two percent of the surveys were returned following the second wave of questionnaires, which is relatively good for a mail survey (Aday, 1996). Eighty of the returned surveys were removed from the analysis because respondents were not currently practicing optometry or the questionnaire was substantially incomplete.
Independent Variable

The independent variable is the optometrist’s organization type. The four groups were (1) solo private doctors, (2) doctors who worked with a multi-site organization owned by a health professional (chain), (3) a corporate optometrist, and (4) an institutionally based optometrist.

Group one doctors reported working in a setting that is owned by a healthcare professional and has only one location. One would expect this setting to exhibit the least amount of formal rationality. Group two doctors worked for an organization which had multiple locations but was still owned by a healthcare professional. The third group reported that they worked in a setting owned by a corporation. Often these doctors aren’t employees but rather rent space for the hosting entity. Examples of the fourth group would be Indian Health Services, the Veteran Administration Services, or a school of optometry professor. Hypothetically, one would expect group four to work in the most formally rational setting.

Due to the variable’s categorical nature, it was dummy coded in the structural equation model analysis. The private group was chosen as the comparison group. The three dummy variables used in the model were chain (1 = chain, 0 = other), corporate (1 = corporate, 0 = other), and institutional (1 = institutional, 0 = other).

Dependent Variables

The main dependent variables are net income, professional autonomy, and job satisfaction. These were measured with Likert scale, multiple choice, and open-ended questions.
Professional autonomy

Professional autonomy is a broad concept and was measured by several different dimensions. These factors were measured by a variety of Likert questions in section C. One dimension includes the power to prescribe treatments and goods in accordance with best optometric practices without influence from external forces. This may include giving an eye exam, removing foreign bodies, or prescribing medication. The breadth of the role is an indicator of professional autonomy, as corporations are more profitable when doctors focus solely on eye exams. Determining the price of one’s own professional services is also a dimension of professional autonomy. This dimension of professional autonomy is hereafter referred to as the primary care role.

Who or what controls practitioner time is another way this study will measure independence. Two aspects of this dimension are time in the office and time with patients. The employer or associated incorporated entity may influence the doctor to perform a time-restricted exam. Patients with varying conditions will likely need varying amounts of exam time. Also, doctors are sometimes contractually obligated to work 6 or 7 days a week. Another component is the ability of the doctors to control their own price schedule.
Table 3

Professional Autonomy Questions

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Others attempt to hold me accountable for revenue growth</td>
</tr>
<tr>
<td>C2</td>
<td>I control how the office staff schedules my appointments</td>
</tr>
<tr>
<td>C3</td>
<td>I often modify my exam protocol to stay on schedule</td>
</tr>
<tr>
<td>C4</td>
<td>Eyecare professionals are totally in control of setting prices</td>
</tr>
<tr>
<td>C5</td>
<td>I determine my own hours</td>
</tr>
<tr>
<td>C6</td>
<td>I prescribe medication regularly</td>
</tr>
<tr>
<td>C7</td>
<td>I accept walk-ins at any time</td>
</tr>
<tr>
<td>C8</td>
<td>I determine how many patients I see a day</td>
</tr>
<tr>
<td>D9</td>
<td>I have to struggle for control over my work</td>
</tr>
<tr>
<td>C10</td>
<td>Others in the organization influence my treatment decisions.</td>
</tr>
<tr>
<td>C11</td>
<td>I consider myself a primary care provider</td>
</tr>
<tr>
<td>C12</td>
<td>I treat pathology of the eye</td>
</tr>
<tr>
<td>C13</td>
<td>I often feel more like a technician than a doctor</td>
</tr>
<tr>
<td>C14</td>
<td>I remove foreign bodies from the eye regularly</td>
</tr>
<tr>
<td>C16</td>
<td>My prescriptions are sometimes altered (i.e. bifocal to no-line bifocal)</td>
</tr>
<tr>
<td>C17</td>
<td>One of my primary roles is patient advocate</td>
</tr>
<tr>
<td>D18</td>
<td>I am forced by the organization to work more than I would like</td>
</tr>
<tr>
<td>C20</td>
<td>I completely determine the quality of care in the office</td>
</tr>
<tr>
<td>C22</td>
<td>I have complete professional autonomy</td>
</tr>
<tr>
<td>C23</td>
<td>My professional status and/or powers are comprised by the organization</td>
</tr>
<tr>
<td>C24</td>
<td>I determine the length of an exam</td>
</tr>
<tr>
<td>C25</td>
<td>Others in the organization influence my business decisions.</td>
</tr>
<tr>
<td>C26</td>
<td>The organization I am affiliated with monitors my productivity closely</td>
</tr>
</tbody>
</table>

Net income

Income is measured by the net dollar amount an optometrist made in 2003. Net income is used because there is great disparity in the gross amount between those owning their businesses and those who are employed by others. Income was self-reported in the subject's response to question nine using a checklist of categories. The question asks the respondent for net income excluding their spouse’s income and any investments. Income categories were given to help improve the response rate since this is one of the most commonly refused survey questions.
Job satisfaction

Questions for the job satisfaction scale presented in table 6. They focused on the doctor’s job satisfaction and on the nature of professional interactions. Professional interactions include contact with patients, other optometrists, other health professionals (such as ophthalmologists), and office staff. Many of the questions were taken from the Physicians Job Satisfaction Scale and crafted for optometrists (Konrad and Linzer, 2002).
Table 4

*Job Satisfaction Questions*

<table>
<thead>
<tr>
<th>Question</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>The organization I am affiliated with shares the same values</td>
</tr>
<tr>
<td>D2</td>
<td>Others recognize the importance of my work</td>
</tr>
<tr>
<td>D3</td>
<td>Patients complain to me more now about the price of services</td>
</tr>
<tr>
<td>D4</td>
<td>I feel a strong personal connection with my patients</td>
</tr>
<tr>
<td>D5</td>
<td>My relationship with patients is more adversarial than it used to be</td>
</tr>
<tr>
<td>D6</td>
<td>I am generally well respected by my patients</td>
</tr>
<tr>
<td>D7</td>
<td>Time pressures keep me from developing good patient relationships</td>
</tr>
<tr>
<td>D8</td>
<td>I get along well with optometric colleagues</td>
</tr>
<tr>
<td>D9</td>
<td>Patients often try to self-diagnose</td>
</tr>
<tr>
<td>D10</td>
<td>Nondocorical staff in my practice support my professional judgment</td>
</tr>
<tr>
<td>D11</td>
<td>Nondocorical staff in my practice are not accommodating</td>
</tr>
<tr>
<td>D12</td>
<td>Nondocorical staff reliably carry out clinical instructions</td>
</tr>
<tr>
<td>D13</td>
<td>I am not well compensated given my training and experience</td>
</tr>
<tr>
<td>D14</td>
<td>I feel a sense of belonging to the community where I practice</td>
</tr>
<tr>
<td>D15</td>
<td>A large motivation in my work is helping people</td>
</tr>
<tr>
<td>D16</td>
<td>Paperwork required by payers is a burden to me</td>
</tr>
<tr>
<td>D17</td>
<td>I have too much administrative work to do</td>
</tr>
<tr>
<td>D18</td>
<td>I have adequate equipment for the office procedures</td>
</tr>
<tr>
<td>D19</td>
<td>I belong to an occupation with high prestige</td>
</tr>
<tr>
<td>D20</td>
<td>There is not enough support staff in my practice</td>
</tr>
<tr>
<td>D21</td>
<td>I find my present clinical work personally rewarding</td>
</tr>
<tr>
<td>D22</td>
<td>My current work situation is a major source of frustration</td>
</tr>
<tr>
<td>D23</td>
<td>If I were to choose over again, I would not become an optometrist</td>
</tr>
<tr>
<td>D24</td>
<td>I would recommend optometry to others as a career</td>
</tr>
<tr>
<td>D25</td>
<td>My role in managing the business aspects of my practice is not a burden to me</td>
</tr>
<tr>
<td>D26</td>
<td>I plan to leave my current practice situation in the next six months</td>
</tr>
</tbody>
</table>

**Control Variables**

Control variables will include many factors with predisposing effects upon or correlation with the dependent variable but not driven by the hypotheses. The control variables are (a) age, (b) degree of urbanization, (c) gender, (d) professional school, (e) marital status, (f) race (g) state, (h) years in practice, and (i) employment status.
Age, number of patients examined per week, hours worked per week, and years in practice are measured as self-reported ratio variables. Gender is dummy coded as male (0) and female (1). Marital status is dummy coded as currently married (0) and other (1). Race was originally coded as White (0), Black (1), Hispanic (2), Asian (3), and other (4). Race was condensed further into white (0) and minority (1) because too few responses were collected for each subgroup.

State was broken down by a nominal categorization for Alabama (0) and Tennessee (1). Professional school was coded University of Alabama at Birmingham (0), Southern College of Optometry (1), and other (3). Degree of urbanization was coded as population size with less than 10,000 (0), 10,000 to 24,999 (1), 25,000 to 99,000 (2), 100,000 to 500,000 (3) and over 500,000 (4). Self employed was recorded as no (0) or yes (1).

Data Preparation and Analysis

All plausible answers for open-ended and closed questions were coded as mutually exclusive categories. The data were then entered from the returned questionnaires into an SPSS spreadsheet. Missing data was coded and SPSS programmed to exempt these values from the analyses. Reverse Likert scale questions were recoded so that higher scores represented better outcomes. Data cleaning also included adjustment of outliers and skewed variables. Sample descriptive means and standard deviations were produced and are provided in table 7 in chapter 4. Sample statistics were compared to known universe parameters to establish its generalizability with t-tests. The variables evaluated were gender, age, income, race, and % corporate.
Main Analyses

Bivariate correlations, Analysis of Variance (ANOVA), and Structural Equation Modeling (SEM) were all used in the main analysis. Pearson correlations were used to first determine the strength and direction of basic covariations. ANOVA was used to determine if the different organizational structure groups differed significantly on the other model variables.

The SPSS product Analysis of Moment Structures (AMOS) was used to determine the best fitting SEM model. The two most commonly used techniques for testing theoretical models include path analysis and structural equation modeling (SEM). Path analysis is an extension of the ordinary least squares regression that is used to measure the direct and indirect effects of possible predictors, while controlling for non-theoretical variables that may have influence on the dependent variable. This is a powerful tool but some researchers (Blalock, 1964; Kelloway, 1998; Schumacker 2004) have noted path analyses are susceptible to the adverse effects of measurement error when measuring central theoretical dimensions.

The advantages of SEM over path analyses include its capacity to estimate models incorporating measurement as well as structural considerations. It does this through confirmatory factor analysis to reduce measurement error by having multiple indicators per construct, its facilitation of overall model testing instead of individual coefficient evaluation, and its ability to model mediating variables and error terms.

The hypothesized SEM model was presented in Figure 1. Ovals represent latent variables and rectangles represent manifest variables. Latent variables are theoretical
concepts that are actually measured by a constellation of manifest variables or measured variables.

In the hypothesized model presented in figure 1, the lines represent relationships between variables. In following figures, the lack of the same line will indicate the lack of a statistically significant covariance. The variable with the arrow pointing to it is the endogenous construct. A curved line with arrows at both ends indicates a covariance between variables with no hypothesized direction.

The goal in building a structural equation model, is to find a model that fits the data to serve as a useful representation of reality and a parsimonious explanation of the data. Model specification involves formally stating the theoretical model using all available relevant theory and research. The model specification in diagram 1 below is primarily a hybridization product of Friedson’s ideal professional and Weber’s ideal bureaucracy model. The main objective of this step is to avoid as much misspecification as possible by arranging all relevant variables in the directional relationships that reflect reality (Schumacker and Lomax 2004).
CHAPTER 5

RESULTS

Chapter Overview

Descriptive, reliability, and validity statistics are summarized in tables seven through twelve. Central tendency and normality metrics are provided first, which are followed by t-test results evaluating the samples generalizability to U.S. optometrists. The chapter then provides ANOVA results between the different organizational structures in table thirteen. Finally, the trimmed SEM model is presented. A level of significance of .05 was used for all relevant statistical tests.

Distributional and Generalizability Statistics

Table 5

Descriptive Statistics for Alabama and Tennessee Optometrists, n = 556

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD Deviation</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Income</td>
<td>$128,857</td>
<td>$70,811</td>
<td>1.1</td>
</tr>
<tr>
<td>Current Educational Debt</td>
<td>$15,510</td>
<td>$6,987</td>
<td>1.0</td>
</tr>
<tr>
<td>Debt at Graduation</td>
<td>$39,626</td>
<td>$20,125</td>
<td>.98</td>
</tr>
<tr>
<td>Practice Years</td>
<td>16.7</td>
<td>11.1</td>
<td>.71</td>
</tr>
<tr>
<td>Age</td>
<td>45.2</td>
<td>11.3</td>
<td>.58</td>
</tr>
<tr>
<td>Technological Dependence (# of optometric diagnostic machines)</td>
<td>3.9</td>
<td>1.3</td>
<td>-.39</td>
</tr>
<tr>
<td>Headcount (# of people in org.)</td>
<td>11.7</td>
<td>4.6</td>
<td>.87</td>
</tr>
<tr>
<td>Exam Time</td>
<td>33.6</td>
<td>11.8</td>
<td>.86</td>
</tr>
<tr>
<td>Exam Cost</td>
<td>72.6</td>
<td>22.9</td>
<td>1.07</td>
</tr>
<tr>
<td>Global Professional Autonomy Scale</td>
<td>89.1</td>
<td>20.0</td>
<td>-.19</td>
</tr>
<tr>
<td>Global Job Satisfaction Scale</td>
<td>95.2</td>
<td>10.6</td>
<td>.16</td>
</tr>
</tbody>
</table>

A t-test was performed to compare the sample to its universe in terms of gender, age, income, race, townsize, and corporate affiliation.
Table 6

Sample Representativeness: A Comparison of the Study Sample, n = 556

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sample value</th>
<th>U.S. Optometrists</th>
<th>Statistically Significantly Difference (.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Corporate</td>
<td>20%</td>
<td>18%</td>
<td>No</td>
</tr>
<tr>
<td>Mean income</td>
<td>$128,857</td>
<td>$132,826</td>
<td>No</td>
</tr>
<tr>
<td>% female</td>
<td>30%</td>
<td>32%</td>
<td>No</td>
</tr>
<tr>
<td>% rural</td>
<td>32%</td>
<td>33%</td>
<td>No</td>
</tr>
</tbody>
</table>

Table 8 shows the sample is representative of optometrists throughout the United States. In an effort to determine the average age and percentage of minority optometrists practicing in the United States, the AOA and MTOS were contacted and the literature searched but empirical results were not found. The percentage of minority optometrist was estimated at seven percent, which matches the sample.

Reliability and Validity Measures

Scalogram analyses were performed using Cronbach’s alpha and confirmatory factor analysis to test the reliability and validity of the scales. The alpha for the professional autonomy scale containing twenty-three items was .89. Two items were removed from the final scale. The alpha for the 22 item job satisfaction scale was .85, after removing three questions that detracted from the overall reliability.

The scales were evaluated with exploratory factor analysis with eigenvalues over 1 being used to indicate the presence of a factor. The items that posted strong loadings on a particular dimension were then observed for theoretical coherence and face validity.
The factors were also confirmed by confirmatory factor analysis during a preliminary step in the structural equation modeling.

Table 7

*Professional Autonomy Factors*

<table>
<thead>
<tr>
<th>Factors</th>
<th>Item Loading</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Care Role</strong></td>
<td>.76</td>
<td>6. I prescribe medication regularly</td>
</tr>
<tr>
<td></td>
<td>.75</td>
<td>11. I consider myself a primary care provider</td>
</tr>
<tr>
<td></td>
<td>.84</td>
<td>12. I treat pathology of the eye</td>
</tr>
<tr>
<td></td>
<td>.75</td>
<td>14. I remove foreign bodies from the eye regularly</td>
</tr>
<tr>
<td><strong>Schedule and Price Control</strong></td>
<td>.73</td>
<td>2. I control how the office staff schedules my appointments</td>
</tr>
<tr>
<td></td>
<td>.55</td>
<td>4. Eyecare professionals are totally in control of setting prices</td>
</tr>
<tr>
<td></td>
<td>.76</td>
<td>5. I determine my own hours</td>
</tr>
<tr>
<td></td>
<td>.75</td>
<td>8. I determine how many patients I see a day</td>
</tr>
<tr>
<td></td>
<td>.52</td>
<td>24. I determine the length of an exam</td>
</tr>
<tr>
<td><strong>Org. Control</strong></td>
<td>.70</td>
<td>15. Corrective prescriptions are sometimes influenced by profit</td>
</tr>
<tr>
<td></td>
<td>.51</td>
<td>16. My prescriptions are sometimes altered</td>
</tr>
<tr>
<td></td>
<td>.65</td>
<td>18. I am forced by the organization to work more than I would like</td>
</tr>
<tr>
<td></td>
<td>.59</td>
<td>23. My professional powers are compromised by the organization</td>
</tr>
<tr>
<td></td>
<td>.47</td>
<td>22. I have complete professional autonomy</td>
</tr>
</tbody>
</table>
The Professional Autonomy Scale Factors

Five factors were derived from the Professional Autonomy scale but only three had at least four questions that had high loadings and manifested a cohesive theoretical theme.

The primary care role factor attempts to measure the scope of the doctor’s practice. Because of changes in education and regulation, the scope of optometry practiced by individuals varies greatly. Some doctors adhere strictly to refraction while others branch out to surgical procedures and pharmaceutical therapy. The subscale had a strong Cronbach’s alpha of .85.

The schedule and price control measures whether the doctor dictates the cost of their services and controls their daily schedule, instead of an office manager. These are both simple organizational factors but integral to the doctor’s professional autonomy. This subscale had a Cronbach’s alpha of .78.

The generalized organizational control component gauges the degree to which the optometrist’s actions are influenced by the organization. This subscale showed a Cronbach’s alpha of .75.
### Job Satisfaction Factors

**Table 8**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Loading</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationships</td>
<td>.60</td>
<td>2. Others recognize the importance of my work</td>
</tr>
<tr>
<td></td>
<td>.59</td>
<td>4. I feel a strong personal connection with my patients</td>
</tr>
<tr>
<td></td>
<td>.55</td>
<td>6. I am generally well respected by my patients</td>
</tr>
<tr>
<td></td>
<td>.62</td>
<td>8. I get along well with optometric colleagues</td>
</tr>
<tr>
<td></td>
<td>.77</td>
<td>10. Nondoctoral staff in my practice support my professional judgment</td>
</tr>
<tr>
<td></td>
<td>.67</td>
<td>11. Nondoctoral staff in my practice are not accommodating</td>
</tr>
<tr>
<td></td>
<td>.71</td>
<td>12. Nondoctoral staff reliably carry out clinical instructions</td>
</tr>
<tr>
<td>Perceived</td>
<td>.60</td>
<td>14. I feel a sense of belonging to the community where I practice</td>
</tr>
<tr>
<td>Prestige</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.66</td>
<td>15. A large motivation in my work is helping people</td>
</tr>
<tr>
<td></td>
<td>.70</td>
<td>19. I belong to an occupation with high prestige</td>
</tr>
<tr>
<td></td>
<td>.70</td>
<td>21. I find my present clinical work personally rewarding</td>
</tr>
<tr>
<td></td>
<td>.73</td>
<td>24. I would recommend optometry as a career</td>
</tr>
<tr>
<td>Resources</td>
<td>.71</td>
<td>16. Paperwork required by payers is a burden to me</td>
</tr>
<tr>
<td></td>
<td>.68</td>
<td>17. I have too much administrative work to do</td>
</tr>
<tr>
<td></td>
<td>.75</td>
<td>18. I have adequate equipment for the office procedures</td>
</tr>
<tr>
<td></td>
<td>.70</td>
<td>20. There is not enough support staff in my practice</td>
</tr>
<tr>
<td></td>
<td>.61</td>
<td>25. My role in managing the business aspects of my practice is not a burden to me</td>
</tr>
</tbody>
</table>

Four factors from the Job Satisfaction Scale were found but only two factors had at least four questions that consistently exhibited high loadings and manifested a cohesive theoretical theme. Table 10 presents the four components derived from the job satisfaction scale. One of these measured the doctor’s quality of relationship with patient, peer, and non-doctoral staff (Cronbach’s $\alpha=.75$). The professional satisfaction...
component measures the individual’s evaluation of the practice of optometry and its benefits to society. The subscale Prestige and Resources returned a Cronbach’s alpha of .79 and .73, respectively.

Bivariate Correlations

Table 11 presents noteworthy bivariate relationships between variables in the theoretical model. Gender is a control variable in this study but still provides some significant information. Being a female optometrist is associated with making less income \( r = -.28 \). However, this does not fully confirm a “glass ceiling” because women in this sample were substantially younger on average than their male counterparts \( r = -.35 \) and had fewer years in practice \( r = -.34 \). Female status is also associated with numerically higher educational graduation debt \( .14 \) and levels of current educational debt burden \( r = .17 \). Being female is weakly correlated with having less professional autonomy \( r = .13 \) and job satisfaction \( r = .08 \).

Marital status did not show many significant associations except being single was related to working within a more bureaucratic organizational structure \( r = .17 \). Likewise, race proved to have little covariance with other variables except a very weak one \( r = .08 \), which suggests minorities make less. Again, this may be spurious because white males numerically dominate the older cohorts. Town size has three noteworthy associations, which include having an office manager \( r = .18 \), less professional autonomy \( -.18 \), and working within a more bureaucratic organizational structure \( r = .22 \).
Table 9: Bi-variate Correlations for Endogenous and Exogenous Study Variables, n=556

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (Female=1)</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Marital Status (Married=1)</td>
<td>-.07</td>
<td>1.0</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Race (Minority=1)</td>
<td>-.22**</td>
<td>.00</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Town Size</td>
<td>.11**</td>
<td>-.08*</td>
<td>.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>-.28**</td>
<td>.07</td>
<td>-.08*</td>
<td>-.09*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self Employed (Reports to another=1)</td>
<td>-.11**</td>
<td>.04</td>
<td>-.07</td>
<td>-.14**</td>
<td>.19**</td>
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<td>.20**</td>
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<td>-.08*</td>
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<td>.36**</td>
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<td>Organizational Structure (1-4, high)</td>
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<td>-.17**</td>
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<td>-.07</td>
<td>.00</td>
<td>.45**</td>
<td>.16**</td>
<td>.02</td>
<td>.30**</td>
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<td>.24**</td>
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<tr>
<td>Exam Time</td>
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<td>.09**</td>
<td>.01</td>
<td>.11**</td>
<td>-.13**</td>
<td>.08</td>
<td>.16**</td>
<td>-.03</td>
<td>.15**</td>
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<td>.15**</td>
<td>-.10**</td>
<td>-.13**</td>
<td>-.25**</td>
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<td></td>
</tr>
<tr>
<td>Headcount (# of people in Org.)</td>
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<td>.03</td>
<td>.05</td>
<td>-.01</td>
<td>.22**</td>
<td>.04</td>
<td>.14**</td>
<td>.21**</td>
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<td>.15**</td>
<td>.01</td>
<td>-.01</td>
<td>-.06</td>
<td>-.03</td>
<td>.03</td>
<td>.01</td>
<td>.22**</td>
<td>.11**</td>
<td></td>
</tr>
</tbody>
</table>

| Mean                 | NA    | NA    | NA    | NA    | 128,857| NA    | 72.60 | NA    | NA    | NA    | 3.9   | 45.2  | 89.1  | 95.2  | 16.7  | 15,510| 39,626| NA    | 33.6  | 11.7  |       |
| Standard Deviation   | NA    | NA    | NA    | NA    | 70,811 | NA    | 22.9  | NA    | NA    | NA    | 1.3   | 11.3  | 20    | 10.6  | 11.1  | 6,987 | 20,120| NA    | 11.8  | 4.6   |       |

* = p < .05, ** = p < .001
Income had several noteworthy covariations including being inversely related to degree of organizational specialization ($r = -.20$), directly related to more diagnostic instrumentation in the office ($r = .26$), directly related to age ($r = .22$), directly related to professional autonomy ($r = .25$), inversely related to current educational debt ($r = -.19$), and positively related to job satisfaction ($r = .17$).

Being employed by another is associated with several other variables but only two had moderately strong coefficients, which include a direct relationship with having an office manager present ($r = .20$). Secondly, being employed is inversely related to professional autonomy ($r = -.34$).

The cost of the exam is directly associated with ($r = .29$) professional autonomy, job satisfaction ($r = .26$) and indirectly associated with degree of organizational structure ($r = -.45$). Exam cost is indirectly associated with degree of specialization ($r = -.33$).

A higher degree of reported efficiency is inversely related to professional autonomy ($r = -.30$) and job satisfaction ($r = -.33$). Professional autonomy is strongly associated with job satisfaction ($r = .69$). Greater degree of organizational structure has a direct relationship with having a contract ($r = .18$).

Age also had a direct relationship with professional autonomy ($r = .18$) and job satisfaction ($r = .17$). Age is positively associated with exam time ($r = .15$) and inversely related to working in a bureaucratic setting ($r = -.17$), inversely associated to having educational debt at graduation ($r = -.50$) or current educational debt ($r = -.58$). Greater exam length was inversely related to the degree of organizational structure ($r = -.25$) and directly related to cost ($r = .16$)
Table 12 lists the variables which are significantly associated with greater organizational structure and the magnitude of the relationship. In sum, the bureaucratic doctor is associated with being younger, single, and female. The graduate with educational debt is more likely to work in the bureaucratic venue. Those in the bureaucratic environment are more likely to report lower professional autonomy and job satisfaction. The bureaucratic optometrist is more likely to work in an urban setting, have a contractual agreement, charge less for their services, and have lower exam times.

Table 10

*Correlates of being a Bureaucratic Optometrist, n = 556*

<table>
<thead>
<tr>
<th>Variables</th>
<th>r</th>
<th>Description of Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam Cost</td>
<td>-.45</td>
<td>Greater organizational structure is associated with lower exam cost</td>
</tr>
<tr>
<td>Prof. Autonomy</td>
<td>-.28</td>
<td>Greater organizational structure is associated with lower professional autonomy</td>
</tr>
<tr>
<td>Degree of Specialization</td>
<td>.30</td>
<td>Greater organizational structure is associated with a more narrow role</td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>-.26</td>
<td>Greater organizational structure is associated with lower job satisfaction</td>
</tr>
<tr>
<td>Exam Time</td>
<td>-.25</td>
<td>Greater organizational structure is associated with lower exam times</td>
</tr>
<tr>
<td>Headcount</td>
<td>.22</td>
<td>Greater organizational structure is associated with higher human resources</td>
</tr>
<tr>
<td>Marital Status (single=1)</td>
<td>.19</td>
<td>Greater organizational structure is associated with marital status</td>
</tr>
<tr>
<td>Gender (female =1)</td>
<td>.16</td>
<td>Greater organizational structure is associated more with being a female</td>
</tr>
<tr>
<td>Age</td>
<td>-.17</td>
<td>Greater organizational structure is associated with being younger</td>
</tr>
<tr>
<td>Graduate Debt</td>
<td>.16</td>
<td>Greater organizational structure is associated with higher graduate debt</td>
</tr>
<tr>
<td>Office Manager</td>
<td>.16</td>
<td>Greater organizational structure is associated with having an office manager</td>
</tr>
<tr>
<td>Town Size</td>
<td>.18</td>
<td>Greater organizational structure is associated with practicing in larger town</td>
</tr>
<tr>
<td>Contract</td>
<td>.18</td>
<td>Greater organizational structure is associated with having a written contract</td>
</tr>
<tr>
<td>Years in Practice</td>
<td>-.17</td>
<td>Greater organizational structure is associated with lower years in practice</td>
</tr>
<tr>
<td>Current debt</td>
<td>.17</td>
<td>Greater organizational structure is associated with having more current debt</td>
</tr>
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</table>
Organizational Structure Differences by Group

Table 11  Study Variables by Organizational Structure

<table>
<thead>
<tr>
<th>Variable</th>
<th>Private: One Office owned by Optometrist (n = 312)</th>
<th>Chain: Multiple Stores Owned Private Optometrist (n = 59)</th>
<th>Corporate: Corporate Affiliated Optometrist (n = 118)</th>
<th>Institutional: Institutional Employed Optometrist (n = 57)</th>
<th>ANOVA difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (% female)</td>
<td>27.4</td>
<td>45.6</td>
<td>48.2</td>
<td>29.3</td>
<td>NA</td>
</tr>
<tr>
<td>Race (% minority)</td>
<td>8.8</td>
<td>3.2</td>
<td>10.4</td>
<td>3.7</td>
<td>NA</td>
</tr>
<tr>
<td>Townsize (% rural)</td>
<td>44.8</td>
<td>26.3</td>
<td>16.5</td>
<td>8.9</td>
<td>NA</td>
</tr>
<tr>
<td>Employment Status (reports to another)</td>
<td>14.0</td>
<td>37.9</td>
<td>17.9</td>
<td>86.4</td>
<td>NA</td>
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<tr>
<td>Office Efficiency (% high efficiency)</td>
<td>3.1</td>
<td>5.4</td>
<td>9.6</td>
<td>16.4</td>
<td>NA</td>
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<tr>
<td>Degree of Specialization (% high specialization)</td>
<td>27.2</td>
<td>25.8</td>
<td>7.7</td>
<td>48.6</td>
<td>NA</td>
</tr>
<tr>
<td>Office Manager (% with office manager)</td>
<td>50.8</td>
<td>65.9</td>
<td>72.5</td>
<td>83.6</td>
<td>NA</td>
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<td>Contract (% with contract)</td>
<td>31.7</td>
<td>53.5</td>
<td>74.3</td>
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<td>Mean Debt at graduation $</td>
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<td>$42,639</td>
<td>$60,610</td>
<td>$32,130</td>
<td>b, d, f</td>
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<tr>
<td>Mean Current Educational debt $</td>
<td>$11,543</td>
<td>$15,932</td>
<td>$26,044</td>
<td>$18,618</td>
<td>b</td>
</tr>
<tr>
<td>Mean Age (yrs)</td>
<td>47.4</td>
<td>46.3</td>
<td>41.1</td>
<td>47.4</td>
<td>a, c</td>
</tr>
<tr>
<td>Mean Practice Years</td>
<td>11.6</td>
<td>9.3</td>
<td>10.2</td>
<td>12.1</td>
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<tr>
<td>Mean Income $</td>
<td>$135,410</td>
<td>$122,891</td>
<td>$114,326</td>
<td>$114,210</td>
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</tr>
<tr>
<td>Technological Dependence (mean # of diagnostic optometric machines)</td>
<td>3.8</td>
<td>3.7</td>
<td>4.0</td>
<td>4.6</td>
<td>c, e</td>
</tr>
<tr>
<td>Headcount (# of people in org.)</td>
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<td>13</td>
<td>15</td>
<td>54</td>
<td>c, e, f</td>
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<tr>
<td>Mean Exam Cost $</td>
<td>$79</td>
<td>$75</td>
<td>$71</td>
<td>$78</td>
<td>b, d, f,</td>
</tr>
<tr>
<td>Mean professional autonomy scale $</td>
<td>$21.0</td>
<td>$21.7</td>
<td>$21.4</td>
<td>$29.4</td>
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</tr>
<tr>
<td>Mean job satisfaction scale $</td>
<td>96.0</td>
<td>85.89</td>
<td>76.56</td>
<td>71.1</td>
<td>a, b, c, d, e</td>
</tr>
<tr>
<td>Exam Time $</td>
<td>9.9</td>
<td>11.2</td>
<td>9.9</td>
<td>10.0</td>
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</tbody>
</table>

Note: n = 556

a = statistically significant difference between groups Private and Chain
b = statistically significant difference between groups Private and Corporate
c = statistically significant difference between groups Private and Institutional
d = statistically significant difference between groups Chain and Corporate
e = statistically significant difference between groups Chain and Institutional
f = statistically significant difference between groups Corporate and Institutional
Table 13 compares study variables by degree of organizational structure.

Minority optometrists are represented a bit more among those who either open their own businesses (8.8%) or work in the corporate setting (10.4). The highest concentration of group private doctors was located in the rural setting (45%). Institutional optometrists reported a rural setting only nine percent of the time.

On average, corporate doctors had approximately twice the debt ($26,044) upon graduation than chain optometrists ($11,543). Using ANOVA to evaluate group mean differences, the corporate doctors showed a statistically significant difference from every other group ($F= 11.2$, $p<.001$). The same dynamics were reported for current debt as well. However, the only statistically significant difference for current debt is between the private and corporate groups ($F=5.1$, $p<.01$). Age is inversely related to corporate affiliation, excluding the institutional optometrists whose mean age is tantamount to that of private doctors (47.4). The private group differed statistically from the chain and corporate group ($F=8.6$, $p<.001$).

The mean income of the corporate affiliated optometrist was reported at 84% of the private optometrist. The statistically significant differences were between the private and corporate optometrists ($F=3.01$, $p<.05$). The corporate group charged 65% of private colleague’s fees for a basic eye exam. The corporate optometrist showed a statistically significant difference from every other group ($F=54.6$, $p<.001$).
The mean professional autonomy score for corporate affiliated optometrists is 26% lower and 10% lower for institutional optometrists than group one. Mean comparisons show that every group is different from the other on this dimension except the corporate and institutional optometrists (F=48.81, p<.001). For the job satisfaction scale, the corporate doctors were significantly lower than the private and chain doctors (F= 19.0, p<.001).

A mean comparison of degree of technological dependence shows that the institutionally employed had significantly more than private doctors in terms of number of diagnostic instrumentation in the office (F=3.6, p<.05).

Institutionally employed doctors differ from every other group in terms of the reported number of personnel belonging to their organization (F =50.4, p<000). Groups one, two, and three do not differ significant in terms of human resource levels.

ANOVA results show that the corporate and institutional optometrists differ from each other and every other group in terms of total exam time (F=25.9, p<.001). The institutionally employed doctors reported the longest exams while the corporate affiliated group reported the shortest.

Structural Equation Modeling Results

The following model was tested and revised using data from confirmatory factor analysis, goodness-of-fit tests, significance tests, and modification indices. The modification indices were only used to adjust the model if the suggested solution made theoretical sense.
The Measurement Model

Three revisions were needed to produce an acceptable measurement model.

Though the final model still had a statistically significant chi square ($X^2=117.98$, df = 47), other metric accessing the “goodness-of-fit” fell within acceptable limits. The chi square is sensitive to sample size and small departures from normality. These weaknesses may cause the rejection of an adequate fitting model. Due to these reasons, the chi-square statistics were used as relative measure of fit indices. Smaller values indicate a better fit. To ensure an overall good fit, the comparative fit index (CFI) and the root mean square error of approximation (RMSEA) were used to evaluate the model fit.

CFI values range from 0 to 1, with values exceeding .9 indicating a good fit (Bentler, 1988). The test evaluates the degree to which the fit of a given model differs from that of a null model. The final model had a CFI value of .97. The RMSEA fell within the acceptable range of $p < .05$ at .054.

During the first analysis the control variables were allowed to freely inter-correlate. Insignificant inter-correlations were trimmed from the final model. During the trimming phase, any direct effects not meeting statistical significance at the .05 level were eliminated from the model. Years of practice, town size, marital status and race were removed from the model when they failed to show statistically significant relationships with an endogenous variable. The final model is presented below in figure 2.
Figure 2: Final Model

- **Exam Cost**
  - Gender (female = 1)
  - Self Employed (employed = 1)
  - Net Income $R^2 = 0.14$
  - Professional Autonomy $R^2 = 0.38$
  - PC Role
  - Schedule
  - Perceived Prestige $R^2 = 0.51$
  - Resources $R^2 = 0.39$
  - Relationships $R^2 = 0.61$

- **Job Satisfaction**

- **R² Values**:
  - Exam Cost: 0.51
  - Net Income: 0.14
  - Professional Autonomy: 0.38
  - Perceived Prestige: 0.51
  - Resources: 0.39
  - Relationships: 0.61
All standardized path coefficients for the final empirical model were statistically
significant, and all were in the hypothesized direction. The meaning of these findings are
addressed in the following chapter. Squared multiple correlation ($R^2$) values for the
empirical model indicated the proportions of variance explained by their predictors.

A moderate to high level of variance in the latent endogenous variables were
explained by the model. The model was able to account for 38% of the variance in
professional autonomy and 50% in job satisfaction. A low amount of variation was
explained in net income (12%).

The organization type dummy variable “corporate” had two significant direct
beta’s on exam cost (-.49), professional autonomy (-.31) and job satisfaction (-.15). The
dummy variable chain had significant relationships but weaker effects on exam cost (.10),
professional autonomy (-.14) and job satisfaction (.09). The dummy variable institution
had significant direct beta’s on professional autonomy (-.21) and job satisfaction (.15).

Exam cost had a weak direct beta on net income (.13). While statistically related
to the control variables, net income showed only one weak direct relationship with
another theoretical variable, which was job satisfaction (.13). Professional autonomy has
a strong positive direct relationship with job satisfaction (.66).

Primary care role (.94) and schedule (.92) showed very high betas in relation to
the latent variable professional autonomy. Job satisfaction’s manifest variables also
showed relatively strong beta’s with resources (.39), perceived prestige (.71) and
relationships (.78).
CHAPTER 6

CONCLUSIONS

Overview

Chapter six discusses study findings, theoretical contributions, study limitations, and suggested directions for future research. This study evaluated the effects of a formal rational business model on the professional model of optometry. The chapter will discuss the study findings at both the latent and indicator variable level.

The findings at the latent level have more relevance for sociological theory, while the applied findings at the indicator level hold more utility for practitioners. For instance, the interplay between the high level theoretical concepts will inform Freidson’s model. Conversely, discovering what independent variables are associated with the doctor possessing more control over price schedule and/or primary care scope should resonate more with optometrists. Healthcare professionals in general should be cognizant of these mundane model dynamics because they can influence job satisfaction, and possibly play a role in shaping the profession’s future. The ability to determine if one can remove a foreign body or prescribe drugs may seem negligible in the short term but have long-term consequences to role security.

The original hypotheses were statistically affirmed at a greater than 95% level of confidence but the strength of each relationship varied. However, a perfect linear relationship between the independent and dependent variables were not always observed. For example, as an organization’s level of bureaucratic affiliation increases, exams prices decrease except for institution based doctors. Institutional doctors were theorized to have
the greatest level of affiliation. This is why the different organizational types were
broken out into dummy variables. Such exceptions and possible explanations will be
discussed in the following sections.

Model Dynamics Review and Discussion

It was hypothesized that optometrists with less bureaucratic influence had greater
professional autonomy, job satisfaction, and net income. This main driver was measured
by organizational type. The organizational denomination included; one office owned by
healthcare professionals, the chain of offices owned by healthcare professionals, the
office owned by a corporation, and the institutionally based practice.

As the organization type increased on the theoretical bureaucratic continuum, the
more formal rational processes were enforced. These operational principles are designed
to improve efficiency but may impede professional freedoms. The following section will
depict and discuss the model dynamics at the observed and unobserved level.
Organizational Structure

*Less Ownership*

*More Formal Rational Processes*

Higher Role Specialization,

More Technology,

Office Manager Presence,

Greater Efficiency,

Contracts,

Hierarchical Decision Making

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Graduate Debt

Gender
(female = 1)

Self Employed
(employed = 1)

Net Income

Exam Cost

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Job Satisfaction

*Professional Satisfaction*

Prestige, Recommend Career

*Relationships*

Patient, Staff, and Colleague

*Perceived Prestige*

The doctor’s perception of their value in society

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Professional Autonomy

*Primary Care Role*

Treat Pathology, Prescribe Drugs,

Removing Foreign Bodies

*Schedule*

Control Exam Prices, Patient Schedule,

Exam Length

*Org. Control*

Org. attempts to influence the doctor’s behavior

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Figure 3: Model Summary at Observed Variable Level
Organizational structure

Organizational structure segments different practice genre into degrees of bureaucratic influence. The different groupings descriptions were listed previously in this chapter. All of the “private” groups were owned by an optometrist or ophthalmologist. In Weber’s ideal bureaucracy the organization owns the means of production, whereas the opposite is true of the ideal professional model. The findings suggest that optometrists who worked in a business owned by a health professional reported greater professional autonomy and job satisfaction. Those who own their own business have more freedom to define their role and dictate operational procedure than those who are employed by a bureaucracy. This freedom is associated with greater levels of job satisfaction.

An exception to the predicted linear relationship occurred between reported satisfaction scores of corporate and institutional optometrists. It is important to note that formal rational processes are stronger in the institutional setting compared to corporate but impact job satisfaction less. This is likely because the doctors and the organization share aligned objectives. As one respondent wrote in the qualitative section, “If optometric chains like Wal-Mart continue to be successful, it is going to cause more OD’s to forget the real reason they choose to become an OD, and that is to help people to see and have good eye health. Chains (meaning corporate) herd people in and out wanting to make the sale, not providing good eye exams.”
In the aforementioned quotation, the subject singled out a corporate bureaucracy which has a very strong profit motive. A small but important distinction must be drawn between the corporate and institutional doctors. The institutional bureaucracy may be higher on the “bureaucratic scale” because they actually employ the optometrists and generally adopt more formal rational processes but often exhibit a partially substantive rational focus. The objective of institutional organization is often to teach or provide patient care. This may explain why institutional doctor’s report lower professional autonomy than their corporate brethren but higher job satisfaction scores. The patient service ethos is still a mutually shared objective.

By their nature institutions must be highly bureaucratic because—unlike these other organizations—they must perform functions other than patient care (teaching, research), which are given greater emphasis and this probably explains why institutional clinics are non-profit and usually are run at a loss rather than a profit. Also, patient care is taught rather than merely delivered, which adds to satisfaction but definitely decreases profitability.

Organization Type and Formal Rationality

Formal rational processes increase efficiency and impose order, which enables large numbers of people to work toward a unified objective. While this order has a positive benefit for the group, it may constrict professional freedoms and subsequently patient experience.
Formal rational processes were measured by the presence of an office manager, specialization of roles reported, degree of efficiency, and a higher reliance on technology. An office manager enforces the formal rational processes through a hierarchical based system. The more specialized roles promote task proficiency through repetition. In sum, the findings suggest formal rational processes and organizational structure are positively associated with degree of bureaucratic affiliation and negatively associated with job satisfaction.

Two deviations of interest occurred from the predicted linear pattern. Surprisingly the corporate doctors reported much less organizational specialization than any other group. This unpredicted finding is supported by a 50 percent lower corporate staff head count than any other organizational group. Thus, the lower number of staff members decrease the amount of specialization possible. Despite the lower number of staff, the same percent of corporate doctors rated their organization “highly efficient” as private doctors. This is because all they have to do is deliver patient care and have little, if any, responsibility for the selection, purchase, or dispensing of ophthalmic materials. Also, it is easy to believe you are efficient when you only spend 10 minutes with a patient.

It is also important to note that Weber suggested that the ideal bureaucratic model was more likely to employ the benefits of technology. The model affirms the greater use of technology as hypothesized but mainly in the case of institutional doctors (which include teaching institutions). There was not any significant difference in use of technology between the private, privately owned chain, or corporate doctors. The
prevalence of technology throughout society has grown greatly since the time Weber envisioned his theory.

Professional Autonomy

The statistical strength of the inverse relationship between organizational type and professional autonomy was moderately strong. According to Freidson, inherent in professional autonomy is the exclusive jurisdiction in a body of theoretically based discretionary knowledge and skill. The model results suggest that the private doctor practices in an environment more like the ideal professional model. This means doctors operating with less bureaucratic processes and more healthcare professional ownership, reported greater professional autonomy. Each group was statistically different, with private doctors reporting a twelve percent higher score from the second highest group (healthcare professional owned chains).

It is important to note that while the institutionally based doctors had less professional autonomy than corporate doctors, they reported higher job satisfaction scores. As previously discussed, the relationship between bureaucratic affiliation and job satisfaction is not perfectly linear. It may be possible that the tasks of institutionally based doctors are fundamentally different. Their primary job is teaching, and every year the fruits of their labors are graduated, a sure sign of achievement—hence the high satisfaction level. Successful research and publication of papers (with recognition) are other reasons for satisfaction not found in practice settings.
Primary Care Role

One sub-dimension of professional autonomy is the primary care role. This role entails a wider breath of therapeutic behaviors such as prescribing medication, treating pathology of the eye, and removing foreign bodies. Private doctors reported performing all these activities with greater frequency than bureaucratically associated optometrist. The corporate doctor group reported the lowest mean score.

An example of the formal rational processes is specialization of tasks. Once again, the corporate model is more profitable when a doctor adheres to a core set of behaviors like refraction. This produces a higher volume of eyeglass prescriptions, which results in higher profit. While corporate doctors report lower organizational division of labor, they reported the greatest role specialization as an optometrist.

It must be noted that the exam length for institutional doctors is substantially longer than any other classification which does not coincide with the aforementioned results. A subsequent study that details the normal exam procedures by group would likely provide greater understanding. The teaching of student assisted examinations simply takes longer. Also, institutional patients may exhibit greater and more complex pathology.

Schedules

A second indicator dimension of professional autonomy is schedule. Schedule compositely measures both control over patient volume and prices. More specifically, it measures if the doctor determines when patients are seen, prices, and hours of operation.
All these have implications of how well a doctor can serve patients. A negative relationship between bureaucratic affiliation and control of schedules was statistically affirmed. Also, the average amount of an institutional exam is essentially equal to that of the private group, while the corporate group reported approximately half the amount of any other group. This is likely due to the corporate business model previously discussed (i.e. profit based on volume eyewear sales) driving down the cost of an exam. A lower exam fee is associated with lower net income as discussed in the next section.

Professional Autonomy Indicator: Organizational Control

The measure mainly evaluates the degree to which the organization pressures the doctor to act in a formally rational manner. This factor explained less variance in the latent variable professional autonomy than the prior two factors. The factor was considered for trimming but remained because it did significantly explain variance and possessed coherence with the theoretical framework.

Net Income

The higher levels of training, licensure, and a publicly accepted service ethos enable all optometrists to earn a relatively high income. However, the model showed a higher net income for optometrists practicing within an environment closer to the professional ideal model. In sum, less bureaucratic affiliation is associated with more discretionary power and greater income, which in turn is associated with higher job satisfaction. When one owns the means of production, income tends to increase. However, the future may not be as bright as corporations gain more of a market share.
through corporate based doctors. One doctor described his situation with the response, “Between insurance, government regulations, and commercial expenses are going up but reimbursements are going down.”

In the qualitative responses, insurance repeatedly arose as a threat to income, professional autonomy, and satisfaction. The following quotation sums the majority of the others by stating, “Optometry is getting stuck in the insurance rut. Many OD’s have sold out which will give them less money, autonomy, and satisfaction. Our office takes very few insurances and we have so much more freedom now and don’t deal with outrageous amounts of stress.”

Insurance is another bureaucracy which dictates exam fee schedules and types of eyewear that can be prescribed. Another doctor wrote, “Although I am an independent and privately owned, I really work for 3rd party payers. My practice income is more 3rd party than private pay. The patients come to me because I am “on their plan” and leave my practice because I am not “on their plan”. Patient relationships and patient loyalty are at an all time low. I still love my profession but this is the most disturbing aspect of optometry”. Insurance companies set fee schedules, frame selections, and influence therapeutic services. Future income may decrease, as particularly if private insurance companies reduce reimbursement for eyecare services and public plans such as Medicare and Medicaid cut reimbursement levels or significantly slow annual increases.
Job Satisfaction

Job satisfaction was measured by a composite of three indicative factors named relationships, resources, and perceived prestige. Relationships with staff, other doctors, and patients have the strongest impact on job satisfaction. Perceived prestige and office resources available also impact level of job satisfaction, respectively.

Job satisfaction’s relationships with professional autonomy and organizational type have already been discussed. One noteworthy finding is that professional autonomy has a stronger association to overall job satisfaction than income. It is possible that once a person achieves a certain level of income, additional increases become less valuable. The professional autonomy (.67) path beta is many times larger than net income (.10) regarding job satisfaction.

Control Variable Outcomes

Inter-correlations between organization type and exogenous variables will also be briefly discussed. Optometric practitioners are interested in the factors associated with becoming a corporate optometrist and the findings also stimulate some interesting follow-up research questions. Lastly, how the study results augment the knowledge base and methodology caveats will be addressed.

Gender, graduate debt, and employment status all explained a statistically significant amount of variance in at least one of the endogenous variables. Race, martial status, town size, and years in practice were trimmed from the final model because a lack of statistical significance.
Females were more likely to work in a corporate environment and reported less professional autonomy. The study did not investigate the causal factors between gender and workplace environment selection. Either way this could be a fruitful branch of future research.

Likewise, graduate debt was related to working in a more bureaucratic environment. It is highly plausible that those with high graduate debt are unwilling to assume the added risk and expenses of opening their own businesses. In the short-term it makes logical sense to practice in the corporate environment. The ever increasing cost of education will continue to sustain this trend.

It is not surprising that race was trimmed from the final model because it showed very little bi-variant covariance with any other variable during preliminary tests. It is possible the study operationalization of race (0=white, 1=nonwhite), diluted its potency to explain variance in dependent variables. Condensing race into a dichotomous variable was necessary because of the moderate sample size (n = 556) and the percentage of minorities in the universe (7%). It is possible the experience of an African American optometrist is different than that of Asian American optometrist, and thus the condensed variable loses its explanatory power to error. It is also possible that race is simply not a factor. Unfortunately with the current sample size of 39 minority subjects, there are not enough for subgroups.

It is surprising the variable “years of practice” was trimmed from the model. However, number of practice years only demonstrated mild statistically strength with other key variables during the preliminary bi-variant investigation. This result is likely
due to the fact that the average years of practice for private optometrists is equal to that of institutionally based practitioners. The average years of practice for corporate and chain affiliated optometrists was lower but only by five years. This finding runs counter to conventional wisdom that the majority of commercial optometrists are recent graduates. Conventional wisdom might hold true by removing institutional optometrists from the analysis.

The Future Profession of Optometry

The last question on the questionnaire asked optometrists what they thought the future held for the profession of optometry. The responses were coded as positive or negative during the analyses phase. Fifty one percent felt that the future of optometry was positive. However, many of the positive responses contained caveats warning of retail corporations, governmental regulations, and insurance.

A large subset simply responded that optometry “is what you make of it”. This myopic statement is true in the short term. One of the negative responses read as follows, “As outside influences (managed care, corporate ownership) become stronger it will become more difficult for the private practitioner to survive. Governmental regulations also cause greater expense for operations. All of the above will decrease income, autonomy and satisfaction. The actual practice of optometry is wonderful, the outside influences continuing to creep in are ruining not just optometry but ALL healthcare.”

In practical terms this may mean a more mechanical or specialized optometric role, less control of the schedule, less income, less enjoyment at work, and a greater
profit motive. The fundamental question divides the two models is whether the people who walk through their doors are patients or customers. If the prestige associated with the service ethic erodes, public prestige could decrease as well.

Since its inception with Charles Prentice, the profession has been fighting its way uphill against other healthcare providers. It is hard to predict if the progress will reverse and optometry will follow the way of pharmacy. The study findings do suggest that corporate bureaucracy affiliation is associated with lower degrees of professionalism. The study findings also suggest that it is not bureaucracy in itself that changes the doctors job satisfaction but diverging objectives of a bureaucracy. The largest bureaucracies are governmental institutions which actually employ doctors but have a non-profit objective. Once again, these doctors reported a higher job satisfaction than corporate optometrists. Despite the fact that institutional doctors probably fare better than corporate doctors, the private doctors report the highest degree of benefits than any groups.

It is interesting such a pertinent topic is on the minds of optometrists and few contemporary studies or professional organizations have addressed the subject. It is possible that this is such a sensitive topic that professional organizations skirt the issue. Both the American Optometric Association and Tennessee Optometric Associated gave a preliminary approval when asked for endorsement and mailing lists for this study until their legal departments declined. The Alabama Optometric Association declined as well after some deliberation. If professional associations do not assume a more defensive posture going forward, then professionalism may decline. As the history of optometry shows us, professionalism is rarely achieved and maintained without concerted offensive
efforts. To be fair to the aforementioned professional associations, approximately 25 percent of their members are corporate optometrists.

Study Contributions

This study adds value to the literature base because most of the deprofessionalization literature has focused on medical doctors. Optometry has been an understudied health profession in medical sociology. Additionally, little empirical research has been performed by optometric researchers concerning the implications of merging their profession with different bureaucracies. As is the case with modern pharmacists, this type of marriage can modify the occupational stature and business practices of the profession. Therefore, this research contributes to the knowledge base of other disciplines.

The study results suggest that when the models do merge the professional model yields some ground to bureaucratic model on the professionalism continuum. This finding augments Friedson’s theory in that the theory is expanded to another discipline and provides some high level explanation of what happens when the ideal and bureaucratic models coalesce. Friedson simply constructed ideal models as conceptual yardsticks which do not completely reflect reality. This study details some of the dynamic interplay when the models meet. It needs to be stated that currently even corporate optometrists likely enjoy a greater sense of professionalism than many other semi-professions such as opticians. However, professional autonomy, net income, and
job satisfaction are both lower for corporate practitioners. In essence corporatization has caused some dep.professionalization to a subset of the optometric community.

Study Limitations

Although this study contributes to the existing knowledge base, it has several limitations. The most important limitation is the cross-sectional design. Because the data was collected at only one point in time, there is no way of knowing for sure whether the degree of corporate affiliation causes lower professional autonomy and job satisfaction. One can only conclude that these constructs are related when relying on the present methodology. To truly determine causality, longitudinal data are required.

A second limitation is also related to study design. The mail survey historically has low response rates which can induce a non-response bias. The response rate of this study is normal for a “cold call” mail survey (>60%) but still lower than some other study designs (Aday 1996). The various state and national optometric associations were approached about sending a support letter prior to the questionnaire but all refused. As mentioned before, all three associations responded positively when first approached but then were advised by their legal counsels to avoid involvement. While there is the possibility of non-response bias, the sample didn’t show a significant difference between itself and its universe. The most probable unrepresented group is those optometrists who move frequently from office to office. It is more likely corporate optometrists move more frequently because they have less of an investment in office infrastructure.
(building, equipment, phone lines, etc.) but weren’t proportionally underrepresented in
the study.

A third limitation of this study is its generalizability to other states across America.
Each state determines its own regulations governing the practice of optometry. While
these laws don’t vary widely, subtle differences can limit the amount of professional
autonomy available to the practicing optometrist without the presence of corporations.
This study is probably less generalizable to the Northeast, where the most restrictive laws
exist. Tennessee and Alabama, along with the southeast in general have the most liberal
laws in terms of defining the optometrist’s role.

A fourth limitation of the study is the manner in which the number of hours spent
in the office per week was measured. From a qualitative evaluation of the answers, it is
clear that this question could have been more clearly worded as it was asked of a highly
educated population and all manner of answers were returned. The question was posed
as “average hours worked per day and average number of exams per day”. In addition to
the multiple types of answers that were received, the question is fundamentally flawed
because it is not known how many days a week an optometrist works during the time
period in question. The variable was not used in the model but may have been an
interesting component. Additionally, due to the sample size the variable race was
condensed in a dichotomous fashion (nonwhite =1, white =0) which may have
oversimplified the complex nature of this variable. As mentioned before, the experience
of difference minority optometrists may be different.
Suggestions for Future Research

As previously mentioned, the varying experience of minority optometrists could provide a fertile topic. It was very difficult to find the percentage of minority optometrists, possibly indicating an area of opportunity for research advancement. Minorities seem to choose corporate involvement at a greater rate as well. As mentioned before, another potentially fruitful area of investigation related to the control variables revolves around why females are more likely to work in the corporate environment. As the numbers of practicing female optometrists increases, so will the relevance of this issue.

The cost effectiveness of a more substantive approach to providing healthcare could be another fertile area of research. A healthcare professional usually pursues a combination of substantive and formally rational objectives. Ideally the doctor’s decisions are based upon a combination of what is best for the patient and a self-interested profit motive.

To make these findings relevant and useful for the business industry one must focus on the cost effectiveness of taking a substantive rational approach. There is the possibility by maintaining patient and practitioner loyalty, it is possible to increase profit in the long-term. This type of cost benefit analysis could provide direction for both factions in this situation. Additionally, it is possible that the primary care role is related to superior patient outcomes which is another under studied area.

A third direction further research could pursue is the development of more sophisticated classification of the degree of corporate affiliation variable. In this study,
the differences between four degrees or groups were evaluated. It is possible that not all corporate opportunities are created the same. Pearl Vision corporate doctors may have greater autonomy than Wal-Mart optometrists. However, this is speculation at this point. A deeper dive into the differences between these entities would likely strengthen the results and lead to more adaptive theoretical model.

A fourth suggestion is to find out why the contemporary leaders of optometry seemed not to be addressing this issue. It some ways it is akin to proverbial “elephant in the room” that no one is discussing. For the qualitative interviews and responses on the surveys, this seems to be an important topic in the minds of their constituents. In this study, slightly under half of the respondents felt autonomy, income, and job satisfaction would be lower going forward. All three optometric associations contacted showed an interest and then declined to have any association with an empirical study on the subject. Granted they might offend a portion of their membership and open themselves up for legal contention, but the practice of optometry is considered a profession today because of political and legal strife. If it is a factor in the health of the profession and/or its patients, then it should be studied.
REFERENCES


