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Self-Determination Theory and Pharmaceutical Salespeople: Does Motivational Orientation of U.S.-Based Pharmaceutical Salespeople Influence Sales Performance?

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Abstract

Utilizing self-determination theory as the foundational theory for this research, this study analyzes the potential relationship that exists between a U.S.-Based Pharmaceutical salesperson's motivational orientation (intrinsic or extrinsic) and their sales performance. Sales performance in this study is defined by sales awards (President's Club, sales rankings, 100% to goal, etc.). To build a foundation of understanding of motivational theory, various theories in addition to self-determination theory are explored in the literature review. The four motivational categories explored are: a) hedonic motivational theories, b) cognitive motivational theories, c) personal growth or actualization motivation theories, and d) self-determination theory. Self-determination theory is the foundational theory guiding this research due to its ability to differentiate between intrinsic (autonomous) and extrinsic (controlled) motivation. The two main research questions addressed in this dissertation include the following:

1. Do U.S.-Based Pharmaceutical Salespeople who are motivated intrinsically achieve annual sales awards and rank higher more frequently in their company (President's Club, Top 50% Ranking, etc.) than those who are motivated extrinsically?
2. Do U.S.-Based Pharmaceutical Salespeople who are motivated extrinsically achieve annual sales awards and rank higher more frequently in their company (President's Club, Top 50% Ranking, etc.) than those who are motivated intrinsically?

To measure salesperson motivational orientation, this research uses the General Causality Orientations Scale (GCOS) developed by Deci and Ryan (1985). The GCOS measures in depth three different motivational orientations of an individual, which are: a) autonomous, b) controlled, and c) impersonal. The GCOS is a 36-item scale with 12 questions fitting in the

autonomous motivational orientation, 12 questions fitting in the controlled motivational orientation, and 12 questions fitting in the impersonal motivational orientation.

This survey was administered electronically to U.S.-Based Pharmaceutical salespeople in the United States. The survey was sent out to 173 pharmaceutical salespeople, of whom 109 completed the entire survey. These U.S.-Based Pharmaceutical salespeople were in the LinkedIn network of the study author.

The results of this study are important to the pharmaceutical industry and its management and salespeople for various reasons. The results of this study have implications for the hiring and management practices pharmaceutical companies utilize for their salespeople. If motivational orientation influences pharmaceutical salesperson performance, pharmaceutical companies will want to hire people with that specific motivational orientation (whether that be intrinsic or extrinsic). This can be done through pre-screening psychological exams that are part of the hiring process.

Also, management and leadership can better utilize certain motivational approaches depending on the motivational orientation (intrinsic or extrinsic) of a specific pharmaceutical salesperson. Knowing which motivational orientation leads to optimal results can help managers know which way is best for them to approach their salespeople in the pharmaceutical industry.

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Chapter 1 – Introduction

Background/Overview

Motivation is the foundational catalyst for human action. Ryan and Deci (2000) share that, "to be motivated means to be moved to do something" (p. 54). The Latin root of the word motivation is *mot* which means, "to move," (Kanfer, 1994). In theory, for any action to take place by an individual, there must be some level of motivation (Shuman, 2016). Understanding motivation and what propels an individual to act has been a topic of research and debate for many years [Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017); Murphy, E. S. and Lupfer, G. (2014); Locke, E. A., & Latham, G. P. (2004); Ryan, R. M., & Deci, E. L. (2002); Weiner, B. (1990); Vroom, V. H. (1964); Skinner, B. F. (1953); Maslow, A. H. (1943); Lewin, K. (1939); Pavlov, I. P. (1927); Descartes, R. (1911)].

A person who is motivated is energized towards a specific end and turns thought into action to accomplish a specific goal. Deci and Ryan (2000) determined that, "A person who feels no impetus or inspiration to act is thus characterized as unmotivated, whereas someone who is energized or activated toward an end is considered motivated" (p. 54).

Motivation fundamentals.

To delve into the topic of motivation, it is first important to understand the foundational bedrocks of motivation. The basic components of motivation have been the same for decades. Weiner (1992), a distinguished motivational psychology research professor from UCLA, reports that psychologists typically break motivation down into five different components. These five components are:

- Choice – what the individual is doing and why one acts
- Latency – how long it takes the individual to initiate the activity

- Intensity – how hard the individual works at the activity
- Persistence – how long the individual will remain at the activity
- Emotional Reactions –an individual's feelings before, during, and after an activity

Choice.

The first basic component of motivation involves choice. An individual first must decide that they want to do something. There are many different stimuli that motivate an individual. These stimuli come in both affective and cognitive forms. Take for example the affective influences. Martinez-Selva and Sanchez-Navarro (2006) report that "the main region involved in decision making is the ventromedial prefrontal cortex that integrates sensory and emotional information relevant to the task" (p. 411).

In addition to affective influences on motivational decisions, there are also cognitive influences. The cognitive influences on motivation and initiating activity revolve around the processing of data and information (Krawczyk, 2002; Tranel & Damasio, 2000). One aspect of the cognition underlying an individual's decision to act is the probability of success. An individual is unlikely to exert effort unless they believe there is a good chance that their energy and effort will lead to success (Vroom, 1964).

Latency.

The second basic component that psychologists study when analyzing motivation is latency (Weiner, 1992). Latency is the time which passes until an individual initiates action. Another term related to latency is procrastination. Wolters (2005) and Senecal, Koestner, & Vallerand (1995) have found that motivation and procrastination are interrelated subjects. Peerro, Giacomantonio, Pica, Kruglanski, & Higgins (2011) explain how procrastination, time, and action are related to motivation. They share:

> There is an intimate relation between action and time. Actions occur in time and run a temporal course. They are initiated, last for a definite period, and come to an end. A fundamental phenomenon at the interface of time and action is procrastination, the tendency to excessively delay the initiation and/or completion of activities beyond the expected timeline of their execution (p. 1317).

Why do some salespeople delay starting an activity when others delve right in? Chu and Choi (2005) have come up with two different types of procrastination that they call active and passive procrastination. Active procrastination is done intentionally and is typically found among people who work well under pressure when something needs to be done at the last minute. Passive procrastination is the more traditional form of procrastination. The main difference with passive procrastinators is that guilt and depression accompany their efforts and they are less likely to finish the task at hand by their deadline.

Intensity.

The third basic component of motivation is intensity. An individual can choose to begin acting on a certain activity, but the effort or intensity which they exert and put forth towards the specific task can vary greatly. One common thread that many motivational theorists agree on is that the level of vigor or intensity that an individual exerts on an activity is dependent on the strength of the motive (Richter, Gendolla, & Wright, 2016). One example of this revolves around food being the motive. If one individual needs food more than another, i.e. hunger, the individual in need of food will typically exert greater effort and intensity on the activity in order to acquire the food (Heckhausen, 1991; Weiner, 1992).

A slightly different perspective regarding motivational intensity from those mentioned above was developed by Brehm & Self (1989). In a separate study, Brehm, Wright, Solomon,

Silka, & Greenberg (1983) distinguish intensity by two different groups. One group is termed potential motivation, which is the maximum effort which an individual is willing to exert on an activity. The other group is called motivational intensity and is defined as the amount of energy actually spent by the individual (1989).

Persistence.

The fourth basic component of motivation according to Weiner (1992) is persistence. This deals with how long somebody can continue working on a certain activity. One key attribute where researchers have found a link to an individual or salesperson's ability to persist at an activity is their personal expectancy of success. Tennen, Suls & Weiner (2012) expound upon the connection between persistence, expectancy, and motivation. They report:

> Whether stemming from the immediate flow of experience or from a more thorough introspection, people's expectancies are reflected in their behavior. If people expect a successful outcome, they continue exerting effort toward the goal. If doubts are strong enough, the result is an impetus to disengage from effort, and potentially from the goal itself (p. 127).

Bandura (2000), the theorist behind self-efficacy theory, has performed research that shows that the higher an individual's self-efficacy, the more persistent they are in working towards a goal. Self-efficacy, according to Bandura, is, "people's beliefs in their capabilities to perform in ways that give them control over events that affect their lives. Unless people believe that they can produce results by their actions, they have little incentive to act" (p. 212). A salesperson with a higher self-efficacy will be more persistent and produce better results.

Emotional reactions.

The last basic component of motivation, according to Weiner (1992) is emotional reactions. The emotional reactions that Weiner refers to here are the emotions present before, during, and after the event in which an individual participated. Depending on the type of emotions felt during the activity, they may either encourage or suppress an individual's desire to repeat the activity.

According to Hall and Goetz (2013), emotions help us to thrive. Hall and Goetz (2013) give two examples of how emotions motivate an individual to survive and thrive. The first example they give is being fearful of a certain person with whom you must interact. These emotions of fear lead you to avoid that individual and act in a reserved manner when interaction is necessary. These negative feelings motivate you to avoid and not repeat the experience. The other example Hall and Goetz (2013) give is one where the emotions are positive, like a successful class discussion or a successful business transaction. The positive or euphoric feelings of these types of situations motivate an individual to do things that would help repeat the emotions felt.

Motivation and work.

The relationship between motivation and work is something that has been widely researched (Kanfer, 1990; Locke, E. A., & Latham, G. P. (2004); Ryan, R. M., & Deci, E. L. (2002); Weiner, B. (1990); Vroom, V. H. (1964); Skinner, B. F. (1953); Maslow, A. H. (1943)). When employees in an organization are motivated and happy, they are also more productive (Grant, 2008). Daniels, LeBlanc, & Davis (2014) found that workers gain an intrinsic motivation to perform the work better when the work is satisfying or has an underlying motivating potential.

In discussing motivation at work, Kanfer (1994) lists those things which she believes lead to predictable types of motivation at work. At the broadest level, the three variables affecting motivation at work are: a) environment, b) heredity, and c) interactions (learning, etc.). Latham and Pinder (2005) simplify work motivation even more stating that it is a combination of forces both internal and external to the individual, i.e. an interaction between the individual and the environment (p. 486).

Another main thought leader on motivation at work is Albert Bandura, the creator of social cognitive theory and its main construct of self-efficacy. The foundation of Bandura's (1986, 1997) ideas on motivation at work revolve around the confidence or belief that an individual has the ability within themselves to bring about a desired result. Bandura (1986) reports that, "unless people believe that they can produce desired effects and forestall undesired ones by their actions, they have little incentive to act. Whatever other factors may operate as motivators, they are rooted in the core belief that one has the power to produce the desired results" (p.228).

Individual self-efficacy and its impact on work has been the topic of extensive research. Stajkovic and Luthans (1998) performed an expansive meta-analysis of self-efficacy at work that included 114 studies and 21,616 individuals. The results of their meta-analysis indicated a significant .38 weighted average correlation between self-efficacy and work-related performance. Stajkovic and Luthans (2003) also used effect-size statistic to calculate the impact of self-efficacy on work performance. The effect size showed an average 28% increase in work performance due to self-efficacy.

Motivation and sales professionals.

Just as in other aspects of life, high levels of motivation are necessary for salespeople to perform and attain organizational goals and quotas. In terms of salespeople and motivation, many researchers have found a positive relationship between salespeople who are motivated and high sales performance (Friend, Johnson, Luthans, & Sohi, 2016). Some would argue that salespeople perform better when given autonomy and when they are intrinsically driven (Deci & Ryan, 2000; Miao, Evans, & Shamoing, 2007). Others would argue that salespeople perform better when there is a dangling carrot or an outside stimulus in the form of extrinsic motivation (Kuvaas, Buch, Gagné, Dysvik, & Forest, (2016); Ingram, Lee & Skinner, 1989; Hart, 1984).

If motivational orientation is tied to individual sales performance, many companies can potentially improve how they hire, manage, and lead their salespeople (whether it be through intrinsic or extrinsic management practices). This study specifically investigates the pharmaceutical sales industry and asks the following question: Does motivational orientation among U.S. pharmaceutical salespeople influence sales performance?

History and Categories of Motivational Theories

Throughout history there have been many attempts to describe what motivates people (Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017); Weiner, B. (1990); Vroom, V. H. (1964); Maslow, A. H. (1943); Lewin, K. (1939); Pavlov, I. P. (1927). To better understand how motivational research and thought has evolved over time and applies to salespeople, a brief historical synopsis of the major motivational theories will be presented. Part of the foundation for studying motivation begins first with an understanding of similarities and differences between living organisms that exist here on earth. Weiner (1992) who is a thought leader on

motivational psychology, shares that there have been numerous motivational theories proposed that both segregate and integrate animals and humans (Weiner, 1992).

Some theories focus on a monistic and dualistic distinction separating animals from humans (Descartes, 1911), while others place animals and humans together in the same category as both being either monistic or dualistic (Darwin, 1936). Monistic means that behavior of an organism is largely described as instinctual and reflexive, and dualistic means that behavior is influenced by both mind and body (Weiner, 1992). It's important to note the impact that these early philosophical ideas of Darwin and others had on researchers' approaches to investigating motivation. The monistic and dualistic distinction and similarity argument among organisms influenced early motivational theorists such as Freud and Hull (1992). Although both monistic and dualistic motivational theories are used, human motivation is most closely aligned with dualistic motivational theories (Weiner, 1992).

The research on motivational metaphors has progressed through various stages. Darwin (1936) influenced the idea of a mechanistic metaphor in motivation while Descartes (1911) influenced the metaphor of Deity, or a being who is rational and knowledgeable. Weiner (1992) reiterates the impact that both Descartes and Darwin had on the beginnings of motivational theory and research. He determined, "Cartesian dualism and the contributions of Darwin, which provided these metaphors, are key historical antecedents for the growth of the scientific study of motivation" (p. 11).

Many different theories exist on what drives human beings to act. Theories on motivation and what drives focused human effort has been around for decades (Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017); Locke, E. A., & Latham, G. P. (2004); Weiner, B. (1990); Vroom, V. H. (1964); Skinner, B. F. (1953); Maslow, A. H. (1943); Lewin, K. (1939); Pavlov, I. P. (1927);

Descartes, R. (1911)). During the 1980s, many well-known scholars (Bandura, 1986 1988; Carver & Scheir, 1981; Nutting, 1984; Revelle, 1989; Kanfer, 1990) attempted to consolidate the many previously developed theories and ideas on motivation. The consolidation efforts of these scholars grouped motivational theories under ideas such as a) goals, b) self-regulation, c) affect, and d) distinguishing between dispositional and situational determinants to motivation, among others.

For the purposes of this research paper, the three categories listed in the *Elsevier's Dictionary of Psychological Theories* (Roeckelein, 2006) will be utilized to organize various motivational theories. In addition to three categories mentioned in *Elsevier's Dictionary of Psychological Theories,* self-determination theory will be a category in and of itself. The reason for putting self-determination theory in a category of its own is because it is the foundational theory guiding this research. The motivational categories explored are:

- Hedonic Motivational Theories
- Cognitive Motivational Theories
- Growth or Actualization Motivational Theories
- Self-Determination Theory

Every effort was made to categorize motivational theories under one of these four categories. Some motivational theories can fit in more than one of these categories, so the theory will be placed in the category in which it best fits. A brief description of the four categories will follow with a more detailed analysis in the literature review.

Hedonic motivational theories.

Motivational theories that fit under this category are concerned mainly with the pursuit of personal pleasure. Beyond any other force, hedonic motivational theories are concerned with a

human being's desire to maintain a sense of equilibrium or utopia. One theorist whose ideas fit under this category is Sigmund Freud. Sigmund Freud's psychoanalytic theories were concerned with, among other things, tension and tension reduction (Freud, 1955; Weiner, 1992). Freud (1955) believed that each human being had a set amount of energy or tension within themselves and to reach a state of equilibrium the said individual needed to find a way to release the tension or energy within themselves. In addition to Freud, Hull (1943) and Spence (1958) pushed the idea of drive in their stimulus response theory. The basic idea here is that to achieve a pleasurable state, basic innate needs such as hunger and thirst must be fulfilled.

Cognitive motivational theories.

The second category of motivational theories that *Elsevier's Dictionary of Psychological Theories* lists is cognitive or need-to-know motivational theories. As the name implies, these motivational theories deal with cognition and the processing of information and data which leads to informed action. Examples of cognitive theories include: a) Vroom's expectancy theory, b) Cognitive dissonance theory, and c) Goal setting theory (Roeckelien, 1998).

Growth or actualization motivational theories.

The third category of motivational theories listed in *Elsevier's Dictionary of Psychological Theories* is growth or actualization motivational theories. Motivational theorists who fit under this category rejected the idea of tension-reduction as a motivational force. The basic general idea behind motivational theories of growth or actualization is that human beings pursue those activities which best lead to personal fulfillment (Roeckelein, 1998). Some of the motivational theorists who fit this category include: a) Goldestein (1939), Maslow (1954), and Rogers (1961). Of these three mentioned, Maslow and his hierarchy of needs is probably the most recognizable and well known.

Self-determination theory.

To answer the main research question of this paper and differentiate between intrinsic and extrinsic motivation of salespeople, self-determination theory (SDT) of motivation (Deci & Ryan, 2000) will be used. Self-determination theory evolved out of a prior theory known as Cognitive Evaluation Theory (CET). CET (Deci & Ryan, 1985) is considered a sub theory of SDT. The fundamental idea of CET is that events and actions which promote a feeling of competence within an individual strengthen the intrinsic motivation of the individual for that specific activity. One of the keystones of CET is that the feelings of competence must be accompanied by feelings of autonomy or internally perceived locus of causality (IPLOC) (DeCharms, 1968). If the autonomous feelings are not present, CET states that they will not strengthen intrinsic motivation.

Self-determination theory expounds upon CET in that self-determination theory creates a continuum upon which extrinsic motivational factors morph into close proximity of intrinsic motivation, depending on the level and depth of autonomy and internalization of the extrinsic motivating factors. In terms of extrinsic motivational factors (Gagne & Deci, 2005) and their relation to intrinsic motivation, four different levels of autonomous regulation are listed. These four levels in order from least autonomous to most autonomous are: a) external regulation, b) introjected regulation, c) identified regulation, and d) integrated regulation (p. 336). In total, self-determination theory has six sub theories which are: a) cognitive evaluation theory, b) organismic integration theory, c) causality orientations theory, d) basic needs theory, e) goal contents theory, and f) relationships motivation theory.

Statement of the Research Problem

The purpose of this study is to investigate if pharmaceutical salespeople in the U.S.A. who are more oriented towards intrinsic motivation rank higher and achieve more sales goals than pharmaceutical salespeople in the U.S.A. who are more oriented towards extrinsic motivation. To be a salesperson takes a certain amount of motivation and fortitude due to the amount of daily rejection and obstacles. Many salespeople work solo in the field. A good salesperson needs to continually be motivated due to the amount of freedom and solitude that accompanies the job.

In terms of motivating salespeople, contemporary practices within most large organizations and corporations try to motivate salespeople through compensation in such a way that a portion of their pay is salaried, and another portion is bonuses based on performance. It costs a lot of money to train a new salesperson, which is why understanding salesperson motivation is so important (Churchill, Ford, and Walker, 1976).

Historically speaking, many researchers treated sales force motivation and sales force compensation as one in the same. This was particularly so with the time period pre-dating the 1970s (Stanton and Buskirk, 1969; Still, Cundiff, & Govani, 2011). This research asks the question if salespeople who are motivated by external factors—such as money or fear of being fired—perform better than salespeople who are motivated autonomously or intrinsically. Are salespeople predominantly monistic machine-like Pavlovian dogs who, when money is dangled in front of them, work harder, exert more energy, and perform better? Or are salespeople dualistic beings motivated by more intrinsic factors such as natural curiosity and a desire for personal growth and progression?

The answers to questions such as these have implications for hiring and compensating salespeople at corporations across the world. Research on motivating salespeople exists, but none of the studies performed have compared intrinsic and extrinsic motivational factors of salespeople and their relationship to salesperson performance. Some studies (Eisenberger, Cameron, and Rhoades, 1999) advocate extrinsic motivation, such as compensation, as the optimal form of motivation for salespeople, while others disagree and side with the benefits of intrinsic motivation (Deci and Ryan, 2000).

A Harvard Business Review article by Steinnbrink (1978) purported that the most important factor in managing and motivating a salesforce was the bonus and compensation structure. This idea was supported in a study by Ingram and Bellinger (1983) where they found money to be the number one factor of import to salespeople. Though money can be an extrinsic motivator, Pullins (2001) found that out of six different potential forms of compensation for salespeople, only one positively impacted the intrinsic motivation of a salesperson. The other five compensation forms either had no impact or negatively impacted the intrinsic motivation of the salesperson. Table 1 below highlights the results from Pullins (2001).

Table 1

Type of Salesperson Compensation	Type of Reward	Expected Impact on Intrinsic Motivation
Salesperson salary	Task non-contingent	No Effect
Volume spiffs or rewards for number of calls made	Task contingent	Negative Impact
Commissions paid strictly on volume	Task contingent	Negative Impact

Commission with defined requirements; control aspects highlighted	Performance contingent	Negative Impact
Commissions with defined requirements; information aspects highlighted	Performance contingent	Positive Impact
Contests/Competitions	Competitively contingent	Negative Impact

Of the two forms of motivation (intrinsic and extrinsic), intrinsic is purer and has the potential to keep a salesperson motivated much longer than that of extrinsic motivation. The intrinsic form of motivation, according to Goolsby et al. (1992) will lead to better interactions between salespersons and customers. A salesperson who is intrinsically motivated is going to act differently towards customers than one who is extrinsically motivated. Pittman, Boggiano, and Ruble (1983) determined that salespeople who are intrinsically motivated are going to try to better themselves and improve in their work because that's what naturally interests them. Intrinsically motivated salespeople are going to be better listeners, which will in turn make them more customer-centric and service-oriented (Futrell, 2002).

Though extrinsic motivation is commonly used, there is debate over its effectiveness. According to Weitz et al. (1986) those who are extrinsically motivated treat their work as a means to an end. In other words, they work more for the money, recognition, or promotion. Take away their incentive, and the motivation is gone. Weitz (1986) also notes that emphasizing extrinsic rewards over time can disintegrate what intrinsic drive a salesperson at one time might have had. According to Pittman et al. (1983), instead of focusing on customers and their needs,

some extrinsically motivated salespeople are focused on using a few sales tactics and methods to persuade the customer into adopting their product. Another issue that extrinsic motivators face is the realism of the sales goals. Unrealistic and lofty goals can be counter-motivating and increase the likelihood of unethical sales tactics (Schwepker, Jr. & Good, 2007).

One sub-theory of Self-determination theory (SDT), which is called organismic integration theory, explains how extrinsic motivators, coupled with autonomy and individual internalization, move closer on the continuum to intrinsic motivation (Deci and Ryan, 1985). The key differentiator of SDT is a distinction between autonomous motivation and controlled motivation. The more a salesperson internalizes and believes in what they are selling, the closer that person will be to being motivated intrinsically.

Deci and Ryan (1999) also were of the thought that tangible rewards undermine intrinsic motivation and positive feedback fosters intrinsic motivation. This was confirmed through a meta-analysis of 128 different experiments (Deci et al.1999). This study will shed additional light on the benefit or detriment of both intrinsic and extrinsic motivational orientation to salesperson performance.

Research Questions and Hypothesis

The research question being addressed in this study revolves around motivational orientation of pharmaceutical salespeople in the U.S.A. and the relationship of this orientation to performance. In the hypothesis below (H1), intrinsic motivation is hypothesized to more positively influence pharmaceutical sales performance than extrinsic motivation.

H1: U.S. Pharmaceutical Salespeople who are motivated intrinsically achieve annual sales awards and rank higher more frequently in their company (President's Club, Top 50% Ranking, etc.) than those who are motivated extrinsically.

Definition of Terms

There are a few terms that may be unfamiliar to readers as well as terms which have dual or ambiguous meanings. Table 2 lists these terms and their meanings to help add meaning and context to this research.

Table 2

Term	Definition
Hedonic Theories of Motivation	Motivational theories that deal with the pursuit of personal pleasure.
Cognitive Theories of Motivation	Motivational theories that deal with cognition and the processing of information.
Growth or Actualization Theories of Motivation	Motivational theories that deal with the human pursuit of fulfillment or accomplishment.
Self-Determination Theory of Motivation (SDT)	Motivational theory that submits that intrinsic motivation is the optimal form of motivation. Self-determination theory has six sub theories which are: a) cognitive evaluation theory, b) organismic integration theory, c) causality orientations theory, d) basic needs theory, e) goal contents theory, and f) relationships motivation theory.
General Causality Orientations Scale (GCOS)	A motivational research questionnaire and scale developed by Deci and Ryan (1985) that

	measures autonomous, controlled, and impersonal motivational orientations. The scale was developed by Deci and Ryan to measure the extent to which individuals are oriented towards intrinsic, extrinsic, or amotivation factors.
Pharmaceutical Salesperson	Deal with business transactions of a larger monetary value that take place over a period of weeks, months, or years. These salespeople typically sell products that are more technical and sophisticated in nature (Rackham, 1988).
Five Basic Components of Motivation	Choice, Latency, Intensity, Persistence, and Emotional Reactions

Delimitations

The choice has been made by the researcher to get the sample of pharmaceutical salespeople for this study to represent the entire United States. The estimated number of pharmaceutical salespeople in the U.S.A. is 62,723 (U.S. Bureau of Labor Statistics and QCEW, 2014). Due to the number of respondents in this survey (N=109 - U.S. pharmaceutical salespeople), the margin of error for the statistical results in representing the 62,723 pharmaceutical salespeople in the U.S.A. is 10% (Israel, 2009a, Yamane,1967). A larger number of respondents would have helped lower the margin of error to a smaller number, but it would have required getting around 1,000 respondents to have a margin of error of +/- 3%. Due to time

and resource limitations, the researcher has made the choice to limit the population to connections on LinkedIn who are pharmaceutical salespeople in the U.S.A. and the respondent size of N = 109.

Assumptions and Limitations

Within research, many confounding variables can affect the outcome of a study. Often within research it is difficult to control all the confounding variables. Some confounding variables may have influenced the outcome of this study. For example, there are other variables that influence the performance of a pharmaceutical salesperson besides their motivational orientation. Two such variables include managed care advantages, and physician access.

Managed care advantages can happen in a specific geography where a drug is placed in a favorable insurance coverage status with less obstacles, making it easier for the physician to prescribe and get the drug into the patients' hands at an affordable price. There is not equal managed care coverage across the United States and it differs from state to state and drug to drug. For example, one state may cover a certain medication on their Medicaid with a prior authorization or step therapy, and neighboring state may require both a prior authorization and a step therapy on their state Medicaid. A step therapy basically requires a doctor to try two or three medications before they will approve the desired medication.

These same nuances, with preferred drug placement, that happen with Medicaid also happen with commercial insurance and Medicare. Most pharmaceutical companies have what are called "managed care liaisons" who are specifically assigned the responsibility of negotiating with insurance companies to have a drug placed on a favorable tier or coverage status within an insurances drug formulary. An insurance drug formulary is a list of drugs that an insurance will cover as either preferred or non-preferred with required prior authorizations and step edits. A

prior authorization or step edit is a control mechanism that insurances put in place to control the cost, prescribing, and utilization of specific drugs.

Pharmaceutical companies typically focus more on larger markets with their managed care strategies. These include larger populated areas where a specific managed care plan will cover millions and millions of patients' lives. This focus on larger populated areas with placing a drug in a place of less restricted access can give pharmaceutical sales reps in these geographies an advantage. Examples of larger populated managed care areas include: California, Texas, and the Eastern Coast.

Another limitation of this study is pharmaceutical rep access to physicians. Some pharmaceutical salespeople can see more top tier targets in their territory than other territories. Some geographies across the United States, such as Texas, have more wide-open access for pharmaceutical sales representatives to see and talk to physicians. In the northwest corner of the United States, in states such as Washington and Oregon, pharmaceutical sales representatives have less access to physicians. This is also true for other parts of the United States such as Minnesota and Massachusetts.

A quick note about the questionnaire and scale picked for this study, the general causality orientations scale (GCOS). This questionnaire was specifically designed by the founders of self-determination theory (Ryan and Deci, 1985). This scale and questionnaire fit better than any other questionnaire that existed that had been tested for accuracy and validity. Deci and Ryan (1985) more specifically determined that the Cronbach α for the GCOS are 0.75 and a test-retest coefficient of 0.74 over two months. Cortina (2013) noted that multiple scholars determine a scale and survey to be sufficiently reliable if the Cronbach α value is greater than .70. Taber (2018) backs the findings of Cortina stating that it is common in science and education to accept

an alpha value of .70 as being a sufficient measure of reliability and consistency for an instrument of measurement.

> Cronbach α is a special measure of reliability known as internal consistency, where the more consistently individual item scores vary with the total score on the test, the higher the value. And, the higher the value, the more confidence you can have that this is a test that is internally consistent or measures one thing, and that one thing is the sum of what each item evaluates (Ayiro, 2012, p. 358).

They also found that the GCOS should correlate with a variety of other theoretically related constructs. No questionnaire aligns to my research questions exactly, but the GCOS fits well for this study.

Need or Significance of the Study

According to the August 2014 non-seasonally adjusted report from the United States Bureau of Labor and Statistics, the number of people employed in the profession of sales was approximately 15,102,000 (Bureau of Labor Statistics (BLS) 2014). Put into context and compared to the total employment number of 146,368,000, this means that approximately 10.3% of the United States work force was employed in some type of sales job in August of 2014 (BLS, 2014). With 1 out of 10 people working in the profession of sales, it demonstrates the importance that companies place on salespeople in generating revenue and contributing to their bottom line. More specifically when looking at the pharmaceutical industry, it is estimated that there are approximately 62,723 pharmaceutical salespeople in the U.S.A. (U.S. Bureau of Labor Statistics and QCEW, 2014).

In 1998, *Inc. Magazine* surveyed the CEOs of the fastest growing 500 companies to find out how much money they spent on sales and marketing as a percentage of their total annual

revenue for the year 1997 (Greco, 1998). The answers varied from company to company, but the average number hovered around 10% of annual revenue. Table 3 depicts the percentages for 426 of the 500 companies that *Inc. Magazine* surveyed (Greco, 1998).

Table 3

What the Inc. 500 Spend on Sales and Marketing	
Percentage of Revenues	**Percentage of Inc. 500 Companies**
Less than 1 %	3%
1 to 5%	43%
6 to 10%	25%
11 to 20%	18%
21 to 50%	9%
More than 50%	1%

With many resources both human and financial going towards salespeople in the United States economy, it becomes important for organizations to hire the most skilled and motivated salespeople. It also emphasizes the importance that managers and human resource departments play in the hiring process. The quantity of people working in the field of sales would lead one to think that there is a preexisting formula that has been developed on hiring the perfect salesperson, but there are only opinions (Roberge, (2016); Calvin, (2001); Lamont & Lundstrom, (1977)). This study not only gives credence to the type of U.S. pharmaceutical salespeople that might be best for hiring, but also potentially offers insights into how a pharmaceutical organization might better motivate its salesforce.

Weitz and Sujan (1986) discuss that the motivation of salespeople can influence them in different ways. In terms of motivation, many people commonly consider that a motivated person will work harder. Weitz et al. (1986) suggests that one other aspect of salesperson motivation that needs to be accounted for is the motivation of the salesperson to work smarter.

Using attribution theory of motivation, Weitz et al. (1986) investigate both strategy and effort from a motivational perspective. Weitz et al. found that when a salesperson assumes lack of results was due to poor strategy, they are motivated to work smarter; however, when their absence of sales numbers is due to effort, they are motivated to work harder.

Chapter 2 – Review of the Literature

The subject of human motivation has been researched for many years. Acknowledging the vast amount of literature written on motivation, this literature review aims to provide a summary of the literature on motivational theory and its relation to pharmaceutical salespeople. When the literature was scrutinized, every attempt was made to find connections between specific motivational theories and salespeople. As this literature review discusses various motivational theories, it will become evident why self-determination theory is well suited to compare the performance differences between intrinsically and extrinsically motivated pharmaceutical salespeople.

Rather than create three new categories to organize this literature review, the three categories of motivational theories recommended by *Elsevier's Dictionary of Psychological Theories* (Roeckelein, 2006) will be utilized. The three categories they recommend for categorizing all motivational theories are: a) Hedonic or Pleasure Motivational Theories, b) Cognitive or Need-to-Know Motivational Theories, and c) Growth or Actualization Motivational Theories. Self-determination theory, which is the main theory guiding this research, will be discussed as a fourth category of motivation theory.

As the various theories are discussed, it will be apparent that there is some crossover and similarity between sub-theories. Every effort was made to put the motivational sub-theory into the category in which it best fits. Some sub-theories are multifaceted and could fit in two categories. This is something to keep in mind as the literature review is read.

Hedonic Motivational Theories and Salespeople

The first category of motivational theories that will be reviewed are the hedonic or pleasure motivational theories. The idea of hedonism is that humans are motivated by pleasure

and de-motivated by pain. This idea and thought have been around for some time. Classical philosophers such as Aristippus and Epicurus back around 400 B.C. taught that hedonism drives human actions (Sedikides and Alicke, 2012). Sedikides et al. elaborate on this idea of hedonism put forth by classical philosophers. They share:

> People want to feel good, or avoid feeling bad about themselves, and they further proposed that humans want and pursue pleasurable experiences, while detesting and eschewing unpleasant ones (p. 304).

There are many different research angles which fit under the hedonic umbrella. The hedonic theories take more of an innate approach while the cognitive and other theories take more of an acquired approach. The author has organized the theories into those categories which they best fit. The hedonic motivational theories which will be discussed here include: a) psychoanalytic theory of motivation, b) drive theory, c) Dual factor theory, d) physiological theory, and e) conditioning and reinforcement theory (classical and operant). The connection of these hedonic motivation sub-theories to pharmaceutical salespeople will also be shared, if the research exists.

Psychoanalytic theory of motivation.

The psychoanalytic theory of motivation has its foundational underpinnings in the evolutionary ideas of Charles Darwin (Weiner, 1992). Charles Darwin (1936) believed that both humans and sub-humans have similar reflexive and habitual motives in life such as sleep, hunger, safety, etc. and operate and act in similar ways. Darwin viewed humans and sub- humans as both being mechanistic or monistic in nature. As mentioned earlier, this differentiated Darwin from the ideas of Descartes, who was an advocate of dualism being present in humans, but not in sub-humans.

The mechanistic ideas put forth by Darwin influenced Sigmund Freud and his psychoanalytic theory of motivation. Some consider the psychoanalytic theory of Freud as the most well-known of the different motivational theories (Weiner, 1992). There is probably no one who is a stronger advocate of hedonism than Sigmund Freud (Weiner, 1992). There are many parts to Freud's ideas and theories which are related to hedonism. Here, two parts of psychoanalytic theory will be discussed: energy and instincts.

Psychoanalytic theory and energy.

Much of Freud's ideas on human motivation revolved around the concept of energy. Freud believed that energy was involved in every human endeavor, whether that endeavor was physical or mental in nature (1955). Freud believed that each person was a closed energy system who was born with a set amount of energy within them. The key to happiness or pleasure (hedonism) in life was based on maintaining a healthy equilibrium or homeostatic energy environment within oneself. According to Freud, if energy was being used or instigated within a person, then that person was not in a state of homeostasis or pleasure. Weiner (1992) used biology to explain Freud's ideas of a homeostatic energy environment within an individual. He reports:

> If, for example, the organism is too hot, then sweating automatically occurs; if too cold, then there is reflexive shivering. At a more behavioral level, if an organism is hungry, then food-related activities are initiated to again bring about equilibrium. The underlying assumption of this analysis is that a detected discrepancy between an ideal and an actual need state initiates activity to reduce the need (p. 29).

Psychoanalytic theory and instincts.

In addition to motivational concepts on energy, Freud also had theoretical ideas on motivation that were related to instincts. According to Freud, instincts were directly related to satisfying bodily needs. According to Freud (1955) instincts come in the form of self-preservation or sexual or aggressive urges.

Freud contended that there were four basic aspects of instincts: a) pressure or strength, b) aim, c) objects or goals, and d) sources. The pressure or strength of instincts is dependent upon the length of time for which there has been a need. The aim refers to activity which will remove the pressure or bring about equilibrium. The objects and goals refer to the medium through which the instincts are satisfied. Finally, the source refers to bodily processes which instigate or bring about the instinctual desire.

Psychoanalytic theory, work, and salespeople.

Literature on psychoanalytic theory and motivation in salespeople could not be found. Empirical testing of Freud's psychoanalytic theory from a motivational standpoint is almost non-existent. Weiner (1992) stated the reason for the scant amount of empirical testing with psychoanalytic theory was due to the large scope of the theory. More specifically Weiner states:

> Many of the basic ideas incorporated within Freud's machine metaphor – the person is a closed energy system, object cathexis leaves less energy available for other functions, goal attainment frees energy, and so on – are not amenable to psychological test. Rather, they are basic assumptions, axioms, and postulates that guide or sensitize observers to particular phenomena (p. 37).

Hull and Spence's drive theory of motivation.

The next motivational theory within the hedonic category to address is Hull and Spence's drive theory. When considering major thought leaders in the United States on motivation, Weiner (1992) determined that there should be no doubt that Hull was the "first dominant motivational figure" (p. 59). Like Freud, Hull was a determinist and was of the mindset that causes of actions can be identified (1992). In fact, many of Hull's motivational theory ideas have similarities to those of Freud.

Like Freud, Hull (1943) suggested that organisms are motivated by physiological needs or deficits, and that these needs cause the individual or organism to carry out actions which will help it offset these deficits and return itself to a state of equilibrium. Weiner (1992) sums up Hull's idea of motivation and drive nicely by simply stating, "needs generate energy that is required for survival" (p. 64).

To put a more concrete and objective nature to Hull's motivational theory he developed a formula to describe an individual's behavior. In its simplest form, Hull's theory is, "behavior = drive x habit." Weiner (1992) shared that the reason that Hull's theory is multiplicative and not additive is that if either drive, or habit is 0, then the entire formula equates to zero. Hence, if there is no drive, there will be no action or habit; and vice versa.

Drive theory, work, and salespeople.

In examining the literature on Hull's drive theory and salespeople, it was hard to find any literature that was written specifically in the context of motivating salespeople. As explained above, Hull's drive theory revolves around the fact that people are motivated by physiological deficits. With a little extrapolation, it is not hard to see that money helps salespeople offset these physiological deficits.

Salespeople are motivated by money at varying levels. Chung (2015) has done research on compensation of salespeople and how the structure of the compensation plan can either motivate or stifle a salesperson's motivation. Of the many findings in Chung's research, one of interest is the fact that capped bonuses or earnings can lessen motivation among salespeople.

Dual factor theory of motivation.

Another motivational theory which fits under hedonic category is Herzberg's two factor theory or dual theory (Herzberg, Mausner, and Snyderman, 1959). Though Mausner and Snyderman helped Herzberg, he is largely given credit for the development of the theory. One other note is that this theory is also known as the hygiene factor theory in some circles.

Dual factor theory basics.

The basic idea of Herzberg's dual factor theory is that job performance is largely tied to an individual's motivation level. Herzberg then suggests that the motivation level of the employee is largely tied to both the satisfactory (pleasure) and dissatisfactory aspects of the job (1959). The two largest aspects of Herzberg's dual theory are hygiene and motivational factors. Herzberg developed his theory after researching a group of 200 engineers and accountants from nine different companies in the USA. Some of the factors that Herzberg found to be motivating to employees included: a) achievement, b) recognition, c) the work itself, d) responsibility, e) advancement, and f) growth (1959). The dissatisfactory aspects of the job which de-motivate included what Herzberg called hygiene factors. These included: a) policy and administration, b) supervision, c) relationships with supervisors, d) work conditions, e) salary, f) relationships with peers, g) personal factors, h) relationship with subordinates, i) status, and j) security (p. 10).

Dual factor theory, work, and salespeople.

In terms of studies that investigated Herzberg's theory in salespeople, there have been a few different studies. Winer and Schiff (1980) conducted a study where they asked a group of industrial salespeople to rate those items that motivated them to sell and those which brought feelings of dissatisfaction. Many of the factors and items used in this specific study paralleled those from Herzberg (1959). Winer and Schiff (1980) found that the highest-ranking motivator in their study was self-satisfaction for doing a good job.

In contrast to the findings of Herzberg, Winer et al. found that money was also a significant motivator for salespeople. A similar study replicated with British industrial salespeople by Shipley and Kiely (1986) found that contrary to Dual Factor Theory of Herzberg, factors listed as motivators and dissatisfiers in their study were not discrete and isolated from one another at separate ends of a continuum, but able to serve interchangeably as both a motivator and dissatisfier to the salespeople.

Physiological theory of motivation.

For the purposes of this literature review, the physiological theory of motivation will be placed under the hedonic category of motivational theories. In terms of the physiology of motivation, some physiological motives are automatic such as hunger or thirst, while others tend to be more intentional, cognitive and rational (Reeve & Lee, 2012). In this way, the physiology of motivation fits well under hedonism in that people pursue a homeostatic pleasurable reward while minimizing pain.

Physiology, neurotransmitters and motivation.

In terms of physiology, much of an individual's feeling of well-being comes from certain neurotransmitters within the human brain. While the main neurotransmitter involved in the

physiological reward process is dopamine, other neurotransmitters also play a role such as: choline, GABA, glutamate, opioid, norepinephrine, and serotonin (Knapp & Kornetsky, 2009; Reeve & Lee, 2012; Powley, 2009).

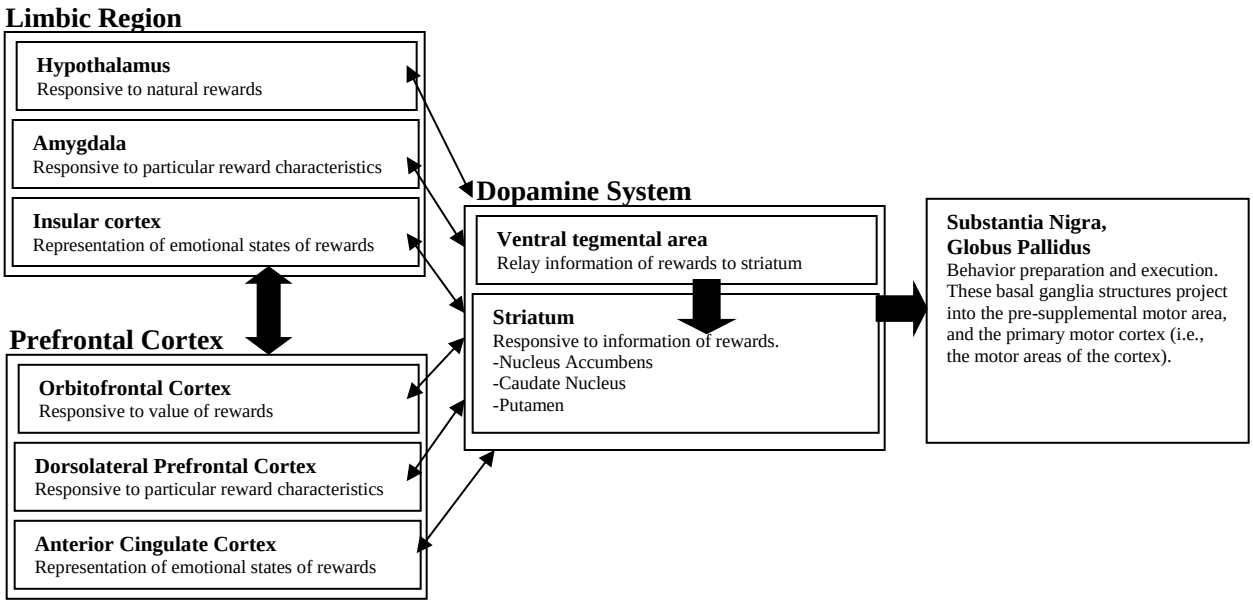
In distinguishing between automatic and intentional motivation via physiology, Reeve & Lee (2012) report that the hypothalamus is vital to automatic consummatory behavior, as is the dopamine-based mesolimbic system to learned instrumental behaviors. Expounding further upon the effect of dopamine on motivation, and positive affect Reeve et al. (2012) reports the following:

> The dopamine hypothesis of positive affect proposes that the presence of mild positive feelings systematically affects cognitive processes and that it is increased dopamine in certain brain regions that produces the mild positive feelings and facilitating effects on cognition. For instance, the receipt of a small unexpected positive event (unexpected gift, humor, task, success) activates dopamine neurons in the ventral tegmental area, which sends dopamine projections into many cortical areas, including (a) prefrontal cortex, which enriches working memory, openness to information, willingness to explore, creative problem solving, and the integration of ideas; and (b) the anterior cingulated cortex, which increases attention, flexible thinking, switching easily among alternative objects or action plans, and the sort of enhanced perspective taking that leads to prosocial behaviors such as cooperativeness, generosity, social responsibility, etc. (p. 370).

Figure 1 on the next page (Reeve & Lee, 2012) highlights certain brain structures and the key part they play in human motivational states.

Figure 1

Neural Core of Reward-Based Motivation Action



Physiology, neurotransmitters, work, and salespeople.

There have been a few research articles published about the physiology of motivation and its relationship to salespeople. Bagozzi, Verbeke, Berg, Rietdijk, Dietvorst, and Worm (2012) explored the relationship between dopamine and a salesperson's propensity to be motivated towards either customer orientation (CO) or salesperson orientation (SO). When a salesperson is customer oriented, they are more focused on the needs of the customer and making sure the customer is satisfied. When a salesperson is more sales oriented, their concern is more short-sighted and inward on getting the sale. The findings from the study by Bagozzi et al. (2012) were that salespeople high in customer orientation (CO) also had high levels of dopaminergic activity.

The dopamine system, which is also known as the reward system, is linked to an individual or salesperson's desire for novel experiences. Nicolaou, Shane, Cherkas, Spector (2008) specifically state that there are two dopamine receptor genes, DRD4 and DRD2, which

regulate dopamine signals in the brain and have been found to be associated with the recognition of opportunity. Berns (2005) shares that certain regions of the brain associated with dopamine activity are activated when people are motivated and anticipate an imminent reward.

Conditioning and reinforcement theories of motivation.

Classical conditioning and motivation.

Another motivation theory that will be placed under the hedonic category of motivation is conditioning theory. In terms of conditioning, there are two main categories that are usually discussed. One is classical conditioning and one is operant conditioning. Classical conditioning is associated with Ivan Pavlov. Pavlov first explained and identified classical conditioning in his book, *Conditioned Reflexes* (Pavlov, 1927). The basic idea of classical conditioning revolves around four points: a) conditioned responses, b) unconditioned responses, c) conditioned stimulus, and d) an unconditioned stimulus (1927).

The most famous of Pavlov's experiments involved dogs, a metronome, and dog food. The metronome in the study served as the conditioned stimulus (CS), the food as the unconditioned stimulus (US), and the salivation from the dog as both the conditioned response (CR) and unconditioned response (UR). The key motivator in classical conditioning is the stimulus, which in the study with Pavlov was the metronome.

Operant conditioning and motivation.

The other type of conditioning theory associated with motivation is operant conditioning. Operant conditioning differs from classical conditioning in that the frequency of a behavior is in direct correlation to the consequences (Skinner, 1953). Another term that is often used interchangeably with consequences when talking about operant conditioning is reinforcement.

B.F. Skinner, the man credited with developing the field of operant conditioning, came up with the word operant by combining the words operate and environment (Murphy & Lupfer, 2014).

Operant conditioning refers to the idea that consequences are instrumental in determining how often a certain behavior is exhibited. Skinner (1953) distinguishes between those behaviors which are replicated by differentiating between consequences as reinforcers or punishers. If the end result of a behavior is a punisher, the behavior that resulted in punishment is less likely to be repeated. If the result of a behavior is a reinforcer, the behavior is more likely to be repeated. Operant conditioning has four different consequences: a) positive reinforcement, b) negative reinforcement, c) positive punishment, and d) negative punishment (Skinner, 1953).

Conditioning theory, work, and salespeople.

There has been various research on conditioning theory and its effects on salespeople. In terms of motivating salespeople, managers have many different approaches they can take. The approach taken by the manager can either reinforce or punish the salesperson. Davis (2005) paints a great picture of how a salesperson can either be motivated and reinforced or demotivated and punished depending on the management approach. He shares:

> A salesperson who has a tremendous month of prospecting with numerous sales appointments but fails to achieve sales goals is often criticized by a manager who does not recognize the long-term seeds being planted. The manager, failing to consider that the seeds of sales often take months to germinate, ignores the positive contributions of his employee. By criticizing the performance, the manager inadvertently sends a message of negative reinforcement. Not only has the manager failed to reward a desired behavior, he has potentially stopped it with the "electric shock" of criticism (p. 48).

Cognitive or Need-to-Know Motivational Theories and Salespeople

Now that many of the hedonic motivational theories have been discussed, the literature review will now turn to those motivational theories that are more cognitive in nature. The second category of motivational theory recommended by *Elsevier's Dictionary of Psychological Theories* (Roeckelein, 2006) is cognitive or need-to-know motivational theories. Cognitive theories of motivation propose that individual motivation and initiative is formed through the processing of information or data (2006). The cognitive theories of motivation discussed here include: a) Vroom's expectancy theory, b) Festinger's cognitive dissonance theory, c) Locke's Goal setting theory, d) Attribution theory and d) Lewin's force field theory.

Vroom's expectancy theory of motivation.

Valence, expectancy, and instrumentality: Vroom's theory defined.

As the name of the theory suggests, Victor Vroom, a Yale business professor, is the man credited with creating the expectancy theory of motivation. In its simplest form, the expectancy theory consists of three main variables that when combined determine an individual's overall motivational level. These three variables are: a) valence (v), b) expectancy (e), and c) instrumentality (i) (Vroom, 1964; Walkley, 2008).

According to Vroom, the valence of motivation refers to the extent an individual wants the desired outcome (1964). The valence of an individual in Vroom's formula can be anywhere between -1 and +1 (1964). The second part of Vroom's theory is expectancy. Expectancy is simply the strength of the belief that an individual has in their own ability to carry out or achieve the task. In Vroom's formula, expectancy can be anywhere between 0 and 1 (1964). The last variable of Vroom's equation is instrumentality. Instrumentality refers to the extent to which a

person believes that upon completion of the task, they will receive the reward promised. Instrumentality can be anywhere between 0 and 1 according to Vroom's formula.

Vroom's expectancy theory, work, and salespeople.

There has been a fair amount of research written on expectancy theory with respect to its application to salespeople. In fact, there were a few scholars in the late 1980s and early 1990s who considered Vroom's expectancy theory to be the dominant theory for researching motivation among salespeople (Brown, Cron and Slocum, 1998; Cron, Dubinsky, & Michaels,1988; Ingram, Lee, and Skinner 1989). Ingram et al. (1989) explored the relationship between salesperson effort and sales performance and found that there is a direct relationship between the two variables. Salesperson effort was determined by two variables: job commitment and extrinsic motivation (i.e. expectancy theory).

In a separate study, Brown, Cron, and Leigh (1993) investigated the impact that anticipatory emotions, both positive and negative, had on goal attainment. The anticipatory emotions are like the expectancy and instrumentality variables in Vroom's formula. Brown et al. found that goal attainment was positively associated with positive anticipatory emotions and negatively associated with negative anticipatory emotions.

Last, regarding expectancy theory and salespeople, Dubinsky et al. (1993) explored the differences between salesmen and saleswomen in terms of Vroom's three variables of: valence, expectancy, and instrumentality. The results from their research showed that saleswomen had significantly higher expectancy estimates than the salesmen. The implications of these findings are important for managers who need to be able to paint a clear picture for both salesmen and saleswomen of what is required to attain their desired future state.

Festinger's cognitive dissonance theory.

Cognitive dissonance theory explained.

Another motivational theory that fits under the category of cognitive or need to know motivational theories is Festinger's dissonance theory. Dissonance happens according to Festinger (1957) when comparing two cognitions; "the obverse of one element would follow from the other" (p. 13). Festinger further proposes that dissonance is motivating to the average individual. Weiner (1992) gives two examples of dissonance and how it can be motivating. He shares, "If one believes smoking causes cancer or perceives that a particular car model is poorly made, then it follows that one should not smoke or buy that make of car" (p. 102).

Also, interesting and of note, Festinger (1957) explains that dissonance can be lessened by individuals who rationalize their incongruent actions. An example of individuals lessening dissonance is a government study that surveyed smokers to see if they thought there was sufficient proof linking smoking to cancer. The categories of smoking habits in the study were: a) nonsmokers, b) light smokers, c) medium smokers, and d) heavy smokers. Those smokers who smoked the most thought there was insufficient evidence linking smoking to cancer while non-smokers had the highest percentage agreeing that there was conclusive evidence linking cancer to smoking (Weiner, 1992).

Cognitive dissonance theory, work, and salespeople.

Much of the literature written on cognitive dissonance in business and sales is from the viewpoint of the customer and the dissonance that can arise post purchase with certain products. Another term for cognitive dissonance in this aspect is buyer's remorse. Companies and products that have high cognitive dissonance after the sale are at risk of order cancellations and diminished brand and customer loyalty (Bolia, Jha, 2016).

Though there is scant literature on cognitive dissonance within sales professions, one pharmaceutical sales profession did have a little literature. Fischer, Keough, Baril, Saccoccio, Mazor, Ladd, and Gurwitz (2009) explored the potential cognitive dissonance that physicians face when interacting with pharmaceutical sales representatives. Their study set out by asking the question of why physicians and pharmaceutical sales representatives still meet. The conclusion to their study was the following:

> Despite evidence that PR (pharmaceutical representative) detailing influences prescribing, providers from several health professions continue to believe that PR interactions improve patient care, and that they can adequately evaluate, and filter information presented to them by PRs (p. 801).

Locke's goal setting theory of motivation.

Goal setting theory of motivation is the next cognitive motivational theory that will be discussed. Goal setting theory is credited to Edwin Locke, a professor from University of Maryland. Table 4 highlights the basic tenets of goal setting theory.

Table 4

Edwin Locke's Goal Setting Theory – Key Findings (Locke & Latham, 2002)
• The most difficult goals produce the highest levels of effort and performance • Performance and ability decrease only when max ability of the individual is reached and when commitment to the goal weakens • Specific difficult goals lead to higher performance than simply encouraging an individual to do their best • Goal specificity reduces variability in performance

- Goals affect performance through 4 mechanisms
    - Goals direct effort and attention
    - Goals energize
    - Goals affect persistence
    - Goals induce strategizing
- Commitment to goals increases performance
    - Goal commitment can be increased by making the goal important to the individuals involved

Goal setting theory, work, and salespeople.

Hart (1984) investigated the impact that goals have on salespeople during a sales contest as part of her dissertation. Using multivariate multiple regression to make inferences of survey data, Hart found that goal difficulty was related to increased or higher effort. She also found that increased acceptance of a goal was related to increased effort of salespeople. The findings of Hart (1984) parallel those of Locke (2002) and his goal setting theory.

In a separate study, Murphy and Dacin (2009) found several variables that impact a salesperson's desire to pursue a goal. One of these variables includes the industry within which the salesperson works. For example, Murphy and Dacin (2009) noted that consumer and commercial salespeople are more likely to pursue goals related to a contest than are salespeople in the industrial or healthcare sector. A few of the reasons why salespeople in the healthcare and industrial sector are less motivated by incentive goals are that their sale is more long term and complex. Goals and incentives are motivating to salespeople, but the context and the industry must be taken into consideration.

Brown, Cron & Slocum (1998) assessed what they called trait competitiveness and the competitive psychological climate on self-set goals and sales performance. Trait competitiveness was defined as a personality characteristic that drives an individual to want to win and be better than others (Spence and Helmreich 1983); while competitive psychological climate is defined as the extent to which an employee perceives that the rewards they receive are dependent upon their superior individual performance compared to that of an internal colleague (Kohn, 1992). The findings from Brown et al. (1998) were that salespeople with high trait competitiveness characteristics set higher goals when the organizational climate is more competitive and salespeople low in trait competitiveness set low goals regardless of the competitive psychological climate within the organization.

Attribution theory of motivation.

Attribution theory is another motivational theory that fits under the category of cognitive or need-to-know motivational theories. Attribution theory is applied in many other areas of research besides motivation. Reiterating this point, Weiner (1992) states that, "there are many types of attribution theories and theorists" (p. 230). Though there are many different types of attribution theories, there is one overarching commonality among all attribution theories. The commonality is a concern with people's perceptions of why something happened (Heider, 1958; Kelley 1967, Weiner 1992). Many theorists argue that we are all scientists trying to figure out the causal structure of the world. Beneath the overarching guidepost of perceived causality lie three different research approaches:

1) A distinction between internal/personal and external/environmental causality
2) Laws that explore relationships between antecedent information and cognitive structures to causality

3) Observed behavior and its relationship to causality

In differentiating between personal causality and environmental causality within attributional theory, the following example is given:

> If all individuals except John succeed, then John's failure is attributed to him. Similarly, if individuals succeed at all exams but the one in chemistry, then John's failure at chemistry will be ascribed to that class or subject, and not to John (Weiner, 1992, p. 235)

Attribution theory and motivation

Heider (1958) purported that there were two dimensions that contributed to the outcome of an action. These two dimensions were "can" or the relationship between a person's ability and the task difficulty, and "try" or the execution. Heider postulated that "can" is dependent on motivation. Regarding "can" and "try" he shares:

> Relating the roles of "can" and "try" we can state the following: When we say, "He can do it, but fails only because he does not try sufficiently" then we mean that the effective personal force is smaller than the restraining environmental force only because the exertion is not great enough; with greater exertion he would succeed (p. 86).

Attribution theory, work, and salespeople.

Attribution theory in relation to salespeople has been investigated by various scholars. Teas and McElroy (1986) conducted research in which they investigated causal attributions on sales force motivation via expectancy estimates. Expectancy estimates, according to Walker, Churchill and Ford (1977) is, "the salesman's estimate of the probability that expending a given amount of effort on a task will lead to an improved level of performance on some dimension" (p. 156). Regarding expectancy, Seligman (1975) purported that when people find that their actions do not impact the outcome, they become helpless.

Teas and McElroy (1986) chose two attributions, locus and stability, which were the two most known causal dimensions. The research of Teas et al. is more hypothetical than empirical. The conclusion of their research is that if attributions of salespeople can be demonstrated or proven to impact expectancy estimates, then sales management can use performance information to impact motivation and causal attributions of salespeople (p. 85).

Weitz et al. (1986) utilized attribution theory to investigate salesperson motivation. He investigated the variable of motivation from two different angles. The first angle investigated the motivation of salespeople to work harder. The second angle of his study investigated the motivation of salespeople to work smarter. The conclusions of his study are that when a salesperson assumes lack of results were due to poor strategy, they are motivated to work smarter; and when their low sales numbers are due to effort, they are motivated to work harder.

Kurt Lewin's Field Theory of Motivation.

Another cognitive or need-to-know motivational theory is that of Kurt Lewin's Force Field Theory. Unlike other motivational theories, Lewin (1939) and his field theory is ahistorical and deals with the idea that motivation and behavior are a direct effect of the immediate field or forces which act on an individual at a specific moment in time (Weiner, 1992). In addition to focusing on a specific moment in time, Lewin's field theory also takes a holistic approach which considers the whole situation and not just compartmentalized pieces.

Lewin developed a formula of what he called "life space" that encapsulated many of his ideas. Lewin (1939) theorizes that behavior is influenced by both the person (P) and the environment (E) with f representing a function of the relationship: B=f (P, E). According to Lewin's ideas of life space, there is nothing else outside of the person (P) and their perception of the environment (E) that determines behavior at a specific moment (p. 115).

Lewin and the person (P).

In focusing on the concepts related to the person, Lewin proposed both structural concepts of the person as well as dynamic concepts of the person. The structural concepts of the person that are most important in Lewin's theory are the regions, boundaries, and adjacencies (Lewin, 1939; Weiner, 1992). These structural concepts serve as the containers or vessels with walls that have varying levels of permeability. The dynamic concept of the person deals with the state of tension in the region. When there is a specific need within a region, a tension arises concomitantly within that same region. One factor that differentiates Lewin from other motivational theorists is that his field theory is not relegated to solely bodily functions and survival, his theory deals with higher needs. In terms of goal attainment, Lewin postulated that tension would dissipate after goal attainment had been achieved.

Lewin and the environment (E).

Lewin also proposed structural and dynamic concepts of the environment**.** Similar to the structural concepts of the person, those of the environment also deal with regions, barriers, and adjacencies (Lewin, 1939; Weiner, 1992). Though there are similar named structures, their utilities differ. A region, in the environmental sense of Lewin's field theory, deals principally with the activities of the individual. The activities include everything that was needed to reach the end goal.

Lewin's field theory of motivation, work, and salespeople.

There was no specific literature found when searching for specific examples of Lewin's field theory applied to salespeople. Though there was no literature found, there were other studies which paralleled some of the ideas of Lewin (1939). Plank and Greene (1996) explored the relationship between salesperson personality and personal selling performance. Personality

would be a component of the person (P) part of Lewin's field theory. Plank and Greene (1996) explain how the person (P) and the environment (E) interact. They report, "fundamental to personal selling and most socially-oriented activities is the perception of the environment and the responses to and within that environment" (p. 25).

Personal Growth or Actualization Motivational Theories and Salespeople

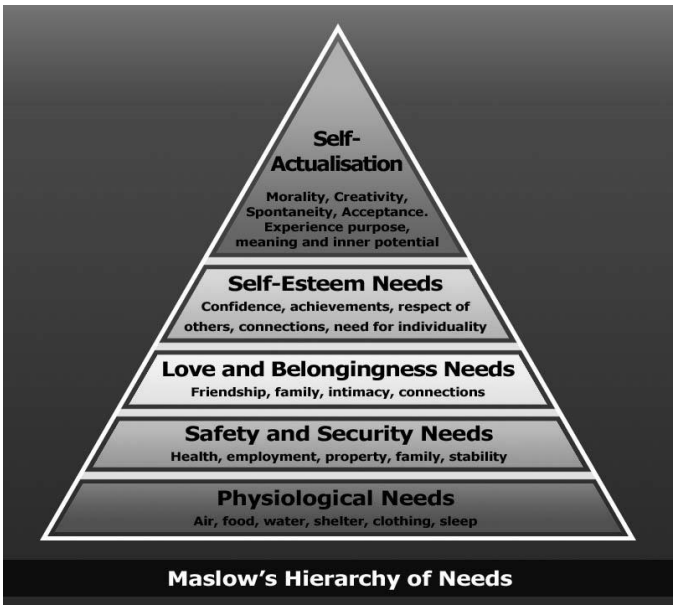
The third and last category of motivational theories that will be discussed is personal growth or actualization motivational theories. This is the third category of motivational theory recommended by *Elsevier's Dictionary of Psychological Theories* (Roeckelein, 2006). Personal growth or actualization theories of motivation deal with motivation that is driven by an individual's desire for growth, self-fulfillment and self-actualization (2006). The personal growth or actualization theories of motivation that will be discussed here include: a) Maslow's hierarchy of needs, b) Alderfer's ERG Theory, and c) self-efficacy theory.

Maslow's Hierarchy of Needs.

Probably the most well-known and discussed motivational theory of the growth and actualization theories is Abraham Maslow's hierarchy of needs. Maslow (1943) wrote about his motivational theory on hierarchy of human needs in his research article entitled, *A theory of human motivation.* Maslow's hierarchy of needs consists of basic needs which must be met first in order to progress to higher order needs. As human basic needs are met, there is a yearning and longing for more personal growth. Maslow states simply that "man is a perpetually wanting animal" (p. 370). Maslow's hierarchy of needs, in order from most basic (base of the pyramid) to higher order needs (pinnacle of the pyramid) are: a) physiological needs, b) safety needs, c) love, affection and belonging, d) esteem (confidence, recognition, appreciation), and e) self-

actualization (reaching your potential) (pgs. 370-382). Figure 2 depicts the five levels of the hierarchy.

Figure 2



To better understand the ordinal nature of Maslow's (1943) hierarchy of needs, a quote from his research on human motivation is shared below:

> If all the needs are unsatisfied, and the organism is then dominated by the physiological needs, all other needs may become simply non-existent or be pushed into the background. The urge to write poetry, the desire to acquire an automobile, the interest in American history, the desire for a new pair of shoes are, in the extreme case, forgotten or become of secondary importance. For the man who is extremely and dangerously hungry, no other interests exist but food. He dreams food, he remembers food, he thinks about food, he emotes only about food, he perceives only food and he wants only food. For our chronically and extremely hungry man, Utopia can be defined very simply as a place where there is plenty of food. He tends to think that, if only he is guaranteed food for the

rest of his life, he will be perfectly happy and will never want anything more (p. 373-374).

Maslow's hierarchy of needs, work, and salespeople.

There have been a few studies done specifically looking at Maslow and his hierarchy of needs in relation to the motivation of salespeople. Bobrow (1991) researched specifically how companies can utilize Maslow's hierarchy of needs to motivate salespeople at an individual level based on their specific needs. Bobrow shares that a salesperson's location on the hierarchy of needs can depend on such things as: age, economic conditions, job market, corporate culture, family matters, etc. (p. 82).

In a separate study Berl, Williamson, and Powell (1984) examined Maslow's hierarchy of needs among 266 industrial salespeople using a within persons research method. Berl (1984) utilized the 6-point Likert scale INDSALES satisfaction tool and found that salespeople's satisfaction levels and needs did not coincide with Maslow's motivational hierarchy.

Walker, Churchill, and Ford (1979) also examined Maslow's hierarchy in relation to salespeople and had findings like Bobrow (1991) regarding motivation differing by salesperson age. More specifically, Walker et al. (1979) found that increased financial rewards were more highly valued by four groups: a) older salespeople b) those salespeople with longer tenure, c) those that are married, and d) those with larger families (p. 46). With respect to the higher order rewards described by Maslow, Walker et al. (1979) found that promotion and opportunity for accomplishment and growth were more likely among: a) younger salespeople, b) unmarried salespeople, or c) salespeople with larger amounts of formal education.

Alderfer's ERG Theory.

The ERG theory developed by Clayton Alderfer is like the hierarchy of needs developed by Abraham Maslow. Landy (1985) argues that Maslow's hierarchy of needs is too broad and geared towards human development instead of focusing specifically on work motivation. Alderfer (1967) and his ERG theory is his attempt to address some of his perceived shortcomings of Maslow's hierarchy of needs with more of an empirically sound approach. Simply put, Alderfer's ERG theory states that human motivation can be summed up by three simple human core needs: existence (E), relatedness (R) and growth (G). These three areas of human motivation encapsulate in a condensed version the five levels of Maslow's hierarchy of needs. The existence needs that Alderfer (1969) lists are those needs which are vital to human existence. The relatedness needs refer to the motivation to maintain healthy interpersonal relationships in life. The last part of Alderfer's ERG theory is growth. Growth refers to motivation for personal development, self-fulfillment and self-actualization.

ERG theory, work, and salespeople.

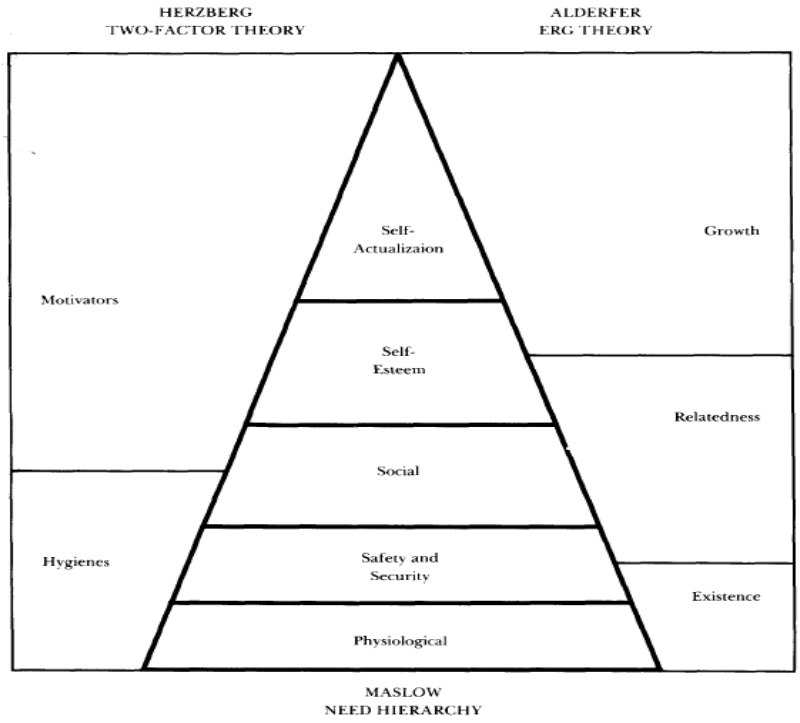
Berl and Williamson (1987) describe how Alderfer's (1969) ERG theory is applicable from a sales perspective. In terms of existence (E), Berl et al. state that some of the basic motivational needs of salespeople include the likes of pay, fringe benefits, and physical working conditions (p. 57). In terms of relatedness (R), Berl et al. thought of the immediate relationships that are closest and impactful to a salesperson such as supervisors, coworkers, and customers. The growth (G) aspect of Alderfer's theory can be applied in helping salespeople take on tasks which utilize their full potential and cause them to stretch and develop new skills (1987, p. 57).

There was a time when Alderfer's ERG theory was held up as the most plausible explanation of human motivation (Etzel & Ivancevich, 1974). In terms of ERG and empirical

research with salespeople, a couple of other studies are worth noting. One study (Berl, Williamson, and Powell, 1984) used ERG theory with industrial salespeople. The findings from their study gave support to two of Alderfer's six propositions: the satisfaction-progression proposition, and frustration-regression proposition. Berl et al. (1984) found that sales representatives who had tasted the feeling of growth and progression wanted more of that feeling, hence the satisfaction-progression proposition of Alderfer. The other finding from Berl et al. was that salespeople who were dissatisfied with existence needs were more worried and focused on how to satisfy those existence needs, hence the frustration-regression proposition of Alderfer. One other interesting finding by Walker, Churchill, and Ford (1979) was that a salesperson's desire for personal growth and accomplishment diminished with age and tenure.

Figure 3 is a visual depiction of the relationship between Maslow's Hierarchy of Needs, Herzberg's two factor theory and Alderfer's ERG theory.

Figure 3



Self-Efficacy Theory and Motivation

People who are self-efficacious believe in their ability to exercise action and effort to produce a desired outcome. Individuals with high levels of self-efficacy believe in their ability to overcome obstacles and persevere to their end goal (Bandura, 1997, 2006). Bandura (2000) shares that, “Efficacy beliefs form the foundation of human agency. Unless people believe that they can produce results by their actions, they have little incentive to act” (p.212).

Bandura (2000) goes on to explain that there are four common means to developing a strong sense of efficacy and motivation within oneself. The first and most effective way is through what he terms mastery experiences. Mastery experiences deal with the idea that success builds a belief within oneself in one’s efficacy, while failures have the opposite effect. The harder and more difficult the success achieved, the stronger the individual’s self-efficacy.

The second common mean or way of developing self-efficacy is through what Bandura (2000) calls social modeling. The basic premise of social modeling is that if an individual sees someone else like them accomplish a certain task, they then believe that they themselves can accomplish that same task. This works in the opposite manner as well. If an individual sees someone like them fail a task, they doubt their own ability to accomplish the same task.

The third way to develop a strong sense of self-efficacy is through social persuasion (Bandura, 2000). Social persuasion is when someone else convinces or persuades someone that they have the skills and the abilities to accomplish whatever it is they set out to do. The fourth and last way to develop a strong sense of self-efficacy is by being able to deal with emotional and physical discomforts and ailments that can accompany the pursuit of any goal or task.

Self-Efficacy theory, work, and salespeople

The basic theoretical tenets of self-efficacy theory apply well to the study of motivation among salespeople. Locke (2002) explored the effects that challenging sales goals had on salespeople's self-efficacy and performance and found that challenging goals were an expression of confidence in a salesperson's ability and thus directly influenced their self-efficacy.

In a separate study, Krishnan, Netemeyer, and Boles (2002) tested three different antecedents to salesperson performance, with one of those antecedents being self-efficacy. The results from Krishnan et al. showed that self-efficacy had both a direct and indirect impact on sales performance. The direct impact of self-efficacy on sales performance stems from a belief and confidence of the salesperson in their ability to sell and achieve their goals. The indirect impact of self-efficacy that Krishnan et al. (2002) describe from a sales perspective is increased effort. Krishnan et al. found that the more self-efficacious a salesperson, the more effort and energy they will exert to achieving the sale.

These findings parallel those of Sujan, Weitz, and Kumar (1994) who found that self-efficacious salespeople not only work harder, they also work smarter. One last study of note is a meta-analysis performed by Stajkovic and Luthans (1998). Their meta-analysis included 114 studies on self-efficacy and performance, and found, "a corrected weight average correlation of .38 between self-efficacy and work-related performance" (p. 287).

Self-Determination Motivational Theory: A Detailed Review

Exploring Elsevier's three categories of motivational theory (hedonic, cognitive, and actualization) and their relationship to salespeople leads to a better understanding of self-determination theory. Self-determination theory is exceptionally positioned to explore the nuances of extrinsic and intrinsic motivational orientation among pharmaceutical salespeople in

the U.S.A. Self-Determination theory includes heuristic properties in that it encourages autonomy and individual discovery of things for oneself, as opposed to being coerced or forced into action.

Ryan and Deci (2002), who are considered the thought leaders on SDT, determined that the foundational ideology of SDT "begins by embracing the assumption that all individuals have natural, innate, and constructive tendencies to develop an ever more elaborated and unified sense of self" (p. 5). Said in a different way, Deci and Ryan believe that humans have the capacity and ability to make sense of their relationship with their surroundings and their environment through their own integrative process, balancing both autonomy and homonymy (p. 5).

The idea behind SDT is that if people are motivated in the proper way (excluding the variable of social environment) they will be more integrated with oneself as opposed to being fragmented (Deci and Ryan, 2002). Healthy motivation, according to Deci, Olafsen, and Ryan (2017), consists of intrinsic motivation or extrinsic motivation which has been internalized in a healthy manner. Deci et al. (2017) speak of intrinsic motivation as being something that's done for the interest and enjoyment of the activity itself. Two examples given by Deci et al. that depict intrinsic motivation in its most pure form are kids playing without any need for reward or recompense, and adults' willing and voluntary participation in sports and outdoor recreation.

The social environment is a key factor in determining if SDT is a possible means of motivating the salesperson or individual. Emphasizing the importance of environment on SDT, Ryan and Deci (2002) make this strong statement:

> Social environments can, according to this perspective, either facilitate or enable the growth and integration propensities with which the human psyche is endowed, or they

> can disrupt, forestall, and fragment these processes resulting in behaviors and inner experiences that represent the darker side of humanity (p. 6).

When looking at motivation from a need-based perspective, most research focus tends to be on physiological needs as opposed to psychological needs. Throughout their research on SDT, Ryan et al. (2002) have focused more on the basic psychological needs of humans and have explored which variables are crucial to maintaining a motivational environment that allows a healthy development of the self. Their research over many years has determined that: a) autonomy, b) competence, and c) relatedness (p. 6) are the three variables most important to motivating individuals in a proper environment that allows for growth and integration of oneself for a healthy psychological self. Without these three variables, alienation and antagonism can occur, creating an unhealthy environment which leads to the darker side of humanity.

To explore the motivational theory of SDT in detail, six sub-theories of self-determination theory will be explored. These six sub-theories include: a) cognitive evaluation theory, b) organismic integration theory, c) causality orientations theory, d) basic needs theory, e) goal contents theory, and f) relationships motivation theory (Ryan & Deci, 2002).

Cognitive evaluation theory.

The basic premise of cognitive evaluation theory (CET) revolves around the idea that people's social environments impact their intrinsic motivation. Deci and Ryan (1980) list three different social contexts that impact people's intrinsic motivation: a) autonomy supportive (informational), b) controlling, and c) amotivating. Those social environments which are controlling undermine intrinsic motivation while those that are autonomy supportive, encourage and facilitate intrinsic motivation. One example that demonstrates the impact of the social context or environment deals with giving positive feedback to employees. Ryan (1982) reports

that on most occasions, positive feedback is experienced as informational, but when positive feedback is accompanied with a high-pressure environment or context, that positive feedback then takes on a new meaning and becomes controlling instead of informational.

Stated in the words of Deci, Ryan and Koestner, "CET proposes that rewards can be interpreted by recipients primarily as controllers of their behavior or, alternatively, as indicators of their competence" (p. 628). In the former case, rewards are predicted to thwart satisfaction of the need for autonomy, lead to a more external perceived locus of causality (deCharms, 1968), and undermine intrinsic motivation. In the latter case where rewards are positively *informational,* they are predicted to provide satisfaction of competence and enhance intrinsic motivation.

To help determine whether a reward is helping to meet basic needs or undermining them, Deci et al. (1999) categorize rewards into three different categories: a) task-noncontingent rewards, b) task-contingent rewards, and c) performance-contingent rewards (p. 628). In some studies, Deci et al. (1999) break task-contingent rewards down even further into completion-contingent rewards and engagement-contingent rewards.

For most of the research done on CET, these three reward categories are used for determining whether a reward is viewed as controlling or affirmational of an individual's competence, and whether the reward enhances versus lessens an individual's intrinsic motivation. CET predicts that task-noncontingent rewards will not undermine intrinsic motivation whereas task-contingent rewards can depend on whether the task is engagement or completion centric. Finally, performance-contingent rewards can undermine intrinsic motivation, but if achieved can affirm competence if the individual reaches the preset level of performance.

Organismic integration theory.

While cognitive evaluation theory is primarily concerned with intrinsic motivation among individuals doing activities that they find inherently interesting and pleasing, organismic integration theory (OIT) takes on the reality that humans must be extrinsically motivated to do those tasks which at many times can be uninteresting and non-pleasing (Deci & Ryan, 2002). There are many detractors, such as deCharms (1968), who advocate that extrinsic motivation and autonomy cannot exist in the same space. Organismic integration theory takes on detractors and says that it is possible to maintain a sense of autonomy while being extrinsically motivated.

Organismic integration theory at its most fundamental level deals with the idea that humans are inclined to integrate their life's experiences within themselves (Deci & Ryan, 2002). The higher the level of self-integration of the extrinsic motivation by an individual, the higher will be their sense of autonomy. Said another way, if extrinsic motivation is going to coexist with any form of autonomy, it will happen as the individual makes sense of extrinsic stimuli and internalizes them more deeply. The more internalized the extrinsic motivation or regulation, the more self-determined the person.

One aspect of organismic integration theory that differentiates it from other internalization theories such as that of Bandura (1996), is that Deci and Ryan (2002) view the internalization process in terms of a continuum rather than an either-or dichotomy. The continuum of organismic integration theory deals with six different levels of regulation or self-determination based on the degree of internalization by the individual. The higher the degree of internalization and integration, the more autonomous the extrinsic motivation becomes. The opposite extreme also exists where there is minimal internalization and the extrinsic motivation becomes more controlling instead of autonomous (2002).

The six levels of integration on Deci and Ryan's (2002) continuum are: a) non-regulation, b) external regulation, c) introjected regulation, d) identified regulation, e) integrated regulation, and f) intrinsic regulation. Non-regulation is simply dealing with an individual who is unmotivated. External regulation is the classic definition of extrinsic motivation where an individual is motivated to obtain rewards or avoid punishment (2002).

Deci and Ryan reference Skinner's operant motivation theory as an example of external regulation. Introjected regulation is the most superficial form of internalization where the extrinsic regulation has been partially internalized, but not to the point of being considered part of the integrated self. Regulation through identification occurs when the extrinsic regulation or motivator has been internally accepted by the individual as important and relevant in their own life and they can identify with it on a personal level. At this level of regulation, the extrinsic motivator is accompanied with a higher degree of perceived autonomy.

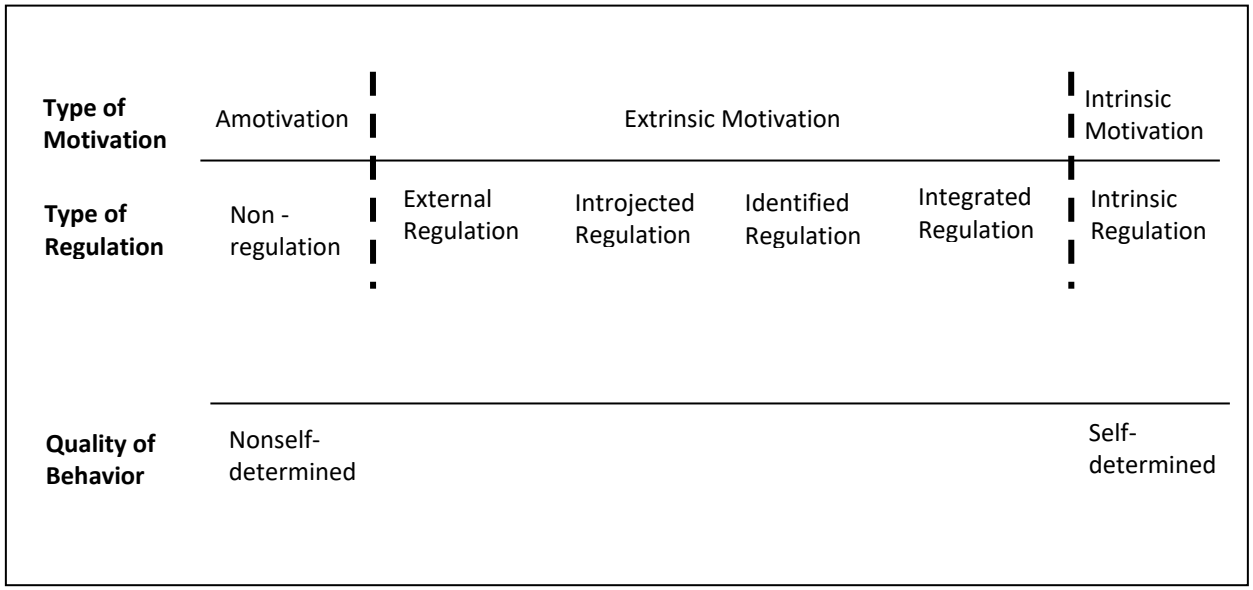
Integrated regulation is the most autonomous form of extrinsic motivation and the closest that extrinsic motivation can get to being like intrinsic motivation. Integrated regulation occurs when the extrinsic motivation aligns perfectly with an individual's goals and values (2002) and has been internalized at a deep level. Figure 4 (Ryan & Deci, 2002) depicts the varying degrees of internalization on the continuum with extrinsic regulations and their relationship to both amotivation and intrinsic motivation.

Causality orientations theory.

The next sub theory of self-determination theory is "causality orientations theory." Causality orientations theory investigates a person's motivational intentions from the perspective of what Ryan and Deci (2002) call individual inner resources. Specifically, causality orientations theory deals with three different orientations of how individuals are more prone to be or not to be

motivated. These three orientations include: a) autonomy orientation, b) controlled orientation, and c) impersonal orientation (p. 21).

Figure 4



Each one of the three orientations are related to the continuum of motivation developed with organismic integration theory. A person who is autonomy oriented is more oriented towards being intrinsically motivated as well as a higher level of self-integration among extrinsic motivational regulations (Ryan & Deci, 2002). Second, a person who is more motivationally oriented towards controlled orientation, does things because that is what they are expected and supposed to do. Last, a person who is motivationally oriented impersonally is amotivated and has no intentional actions for what they do. Deci and Ryan (2002) developed the General Causality Orientations Scale (GCOS) to measure an individual's degree of motivational orientation to each of three categories.

Three orientations and their associated characteristics.

In exploring these three orientations, various authors and scholars have had important findings. Ryan and Deci (1985) found that a high score in each orientation had specific

correlations in terms of personality etc. Regarding the autonomy orientation, Ryan et al. found that individuals who scored high on this orientation had higher levels of self-actualization, self-esteem, and ego development among others (p. 21).

Regarding the controlled orientation it was found that individuals who scored high in this orientation were more publicly self-conscious and more worried about the external outward pressure as opposed to their interests (1985). As one would expect, the level of well-being in these high scoring-controlled individuals did not match the well-being of those who scored high on the autonomy orientation. The impersonal orientation that is associated with the lowest level of personal well-being is related to individuals who suffer from self-derogation, low self-esteem, and depression (p. 21).

Koestner, Bernieri, & Zuckerman (1992), investigated whether autonomous- or controlled-oriented individuals were more skilled and capable of integration. Based on results from test scores, two groups were formed for the purposes of the study, one group consisting of individuals who are more autonomous oriented in nature, and one group of individuals who are more control oriented in nature. Koestner et al. found that individuals who are more autonomous oriented are better at integration than individuals who are more control oriented.

Basic needs theory.

The next sub theory of self-determination theory is basic needs theory. Basic needs theory focuses on those needs which are fundamental to the well-being of an individual. Basic needs theory deals with the psychological well-being of individuals (Ryan and Deci, 2002). It is suggested that the most basic human needs are universal, no matter gender, age, or culture (2002). According to basic needs theory, for an individual to psychologically thrive, they need to have healthy amounts of autonomy, competence, and relatedness.

Most research about well-being can be divided into two separate classes. The first class of well-being is what is called hedonic well-being. This form of well-being is more subjective and is equated with happiness in terms of pleasure attainment and pain avoidance (Kahneman, Diener, & Schwartz, 1999). The other form of well-being commonly studied is that of eudaimonic. Eudaimonic well-being focuses more on meaning and the level of self-realization actualized by an individual (Deci and Ryan, 2001). The goal of eudaimonic well-being is for an individual to be fully functioning (Ryff & Singer, 1998). When exploring well-being and its relationship to SDT, Ryan and Frederick (1997) found that eudaimonic well-being fits better with the basic ideals of autonomy, competence, and relatedness.

In exploring the research on autonomy, competence, and relatedness, it was difficult to find studies that explored performance of salespeople. When looking at the workplace in general, there are a few examples that demonstrate statistical relationships between these variables and well-being.

In one study, Kasser and Ryan (1999) found that two variables of autonomy and relatedness were positively related to the well-being of patients in a nursing home. In a separate study that looked at workplace well-being, employees reported that when their fundamental needs (autonomy, competence, and relatedness) were met, they experienced self-esteem, health and vitality (Baard, Deci and Ryan, 2004). As mentioned previously, if any of the three vital elements (autonomy, relatedness, or competence) are thwarted or malnourished, there will be negative effects including individual actions that display the darker side of humanity.

Goal contents theory.

The fifth sub theory of self- determination theory is goal contents theory. Goal contents theory deals with the behind-the-scenes motives for the goal and submits that the “why” (the

process), and the "what" (the content) of the goal matters and can lead to optimal or poor mental health (Deci & Ryan, 2000). Goals are either sought for intrinsic aspirations or extrinsic aspirations (Kasser & Ryan, 1993). According to Kasser and Ryan (1993) examples of intrinsic aspirations are things such as: a) affiliation, b) personal growth, or c) community contribution. Extrinsic aspirations, on the other hand, are focused on the attainment of wealth, fame, and image.

It is argued by Kasser and Ryan (1993) that intrinsic aspirations are more in line with meeting the basic psychological needs of people than extrinsic aspirations, and as such lead to more optimal mental health and well-being. Backing up their argument are multiple studies. These studies (Jones & Crandall, 1986; Ryan & Frederick, 1997) show that an individual's self-actualization and vitality were significantly positively related to intrinsic aspirations. Extrinsic aspirations (financial success) on the other hand were negatively related to well-being.

The process or the "why" of goal setting is another important aspect to consider for individual health and well-being. The main point of consideration for the process of goal setting is the degree of autonomy or control that is present. Deci and Ryan (2000) provide a nice synopsis on the importance of "why" in goal setting for various levels of education. They found:

> Studies of student motivation in elementary through medical schools and in diverse cultures indicate that the SDT model of regulatory styles has considerable generalizability. Students' pursuit of educational goals for autonomous relative to heteronomous reasons has been positively associated with value endorsement, behavioral persistence, conceptual understanding, personal adjustment, and positive coping. The "why" of goal pursuits does make a difference in terms of educational outcomes (p. 240).

Relationships motivation theory.

The sixth sub theory of self-determination theory is relationship motivation theory. The underlying premise with relationship motivation theory is that filling the need for relatedness and relationships is not enough. In addition to relatedness needs being fulfilled, for a relationship to fully thrive and be all that it can be the relationship must have healthy amounts of both autonomy and competence (Deci & Ryan, 2012). That which was essential at the individual level for optimal health and quality of life is also essential at the relationship level with two individuals. When examining the impact of autonomy on relationships between best friends, Deci, La Guardia, Moller, Scheiner, and Ryan (2006) showed that autonomy was related to higher levels of relationship satisfaction, attachment security, emotional reliance, and dyadic adjustment.

One other point of consideration that relationship motivation theory makes is that if an individual in the relationship is highly concerned with extrinsic goals such as wealth or fame, they will view their partner not as a person, but more as an object or instrument which will help facilitate and bring about their desired extrinsic goals.

Self-Determination Theory: Salespeople and Work

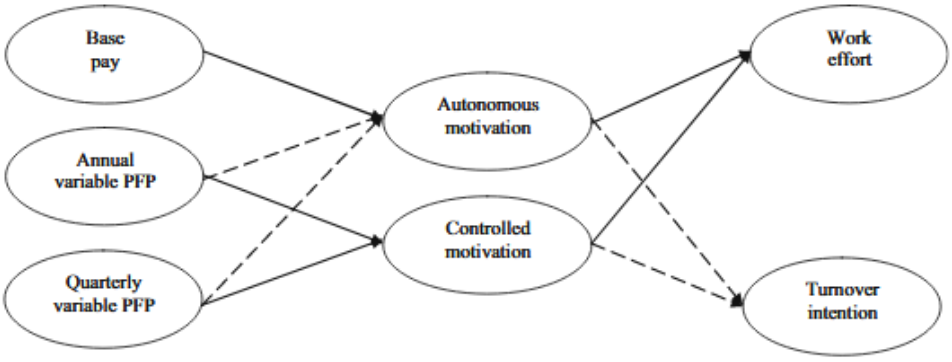
While many of the research studies utilized in this section highlight specific theories or sub theories of self-determination theory and their relation to salespeople or employees in the work setting, some don't. Some of the research herein doesn't utilize exact theories of SDT, but includes ideas that are foundational to SDT such as control and autonomy, etc.

Kuvaas, Buch, Gagne, Dysvik, and Forest (2016) performed a 2-year longitudinal study to explore how sales incentives influence motivation, turnover retention, and work effort among salespeople. There were three types of pay-for-performance (PFP) variables considered in the study: a) annual pay-for-performance, b) quarterly pay-for performance, and c) base pay level.

These PFP variables were then analyzed in relation to self-reported employee outcomes, namely work effort, and turnover intention.

The last part of the study investigated whether PFP and employee outcomes were influenced at all by controlled or autonomous motivation. Figure 5, constructed by Kuvaas et al. (2016), demonstrates the setup of their study and their hypothesis. Solid lines represent positive relationships, and the dashed lines represent negative relationships.

Figure 5



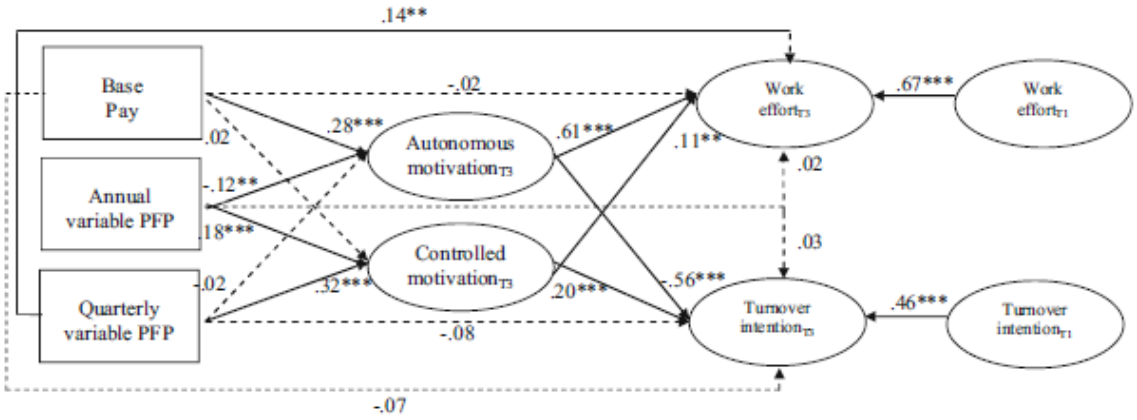
To carry out their study, Kuvaas et al. (2016) surveyed Norwegian insurance salespeople of one company. The surveys were spread over two years. The first survey took place in February of 2007 with 643 of the salespeople completing surveys. The second survey took place in April of 2008 with 471 of the salespeople completing surveys. The third survey took place in April/May of 2009 with 368 employees completing surveys.

Each of the surveys assessed something slightly different and used a five-point Likert scale that ranged from 1 “strongly disagree” to 5 “strongly agree” (Kuvaas et al., 2016). The first survey was used to assess the initial value of the dependent variables (self-reported work effort and turnover intention). The second survey investigated the perceived effectiveness or instrumentality of pay for performance (PFP). The third and last survey assessed both the mediating and dependent variables.

There were several findings uncovered from the research of Kuvaas et al. (2016). First, there was a positive relationship between base pay and autonomous motivation ($\beta = .28$, $p < .001$). Both variable PFP and quarterly PFP were found to be positively related to a feeling of controlled motivation among salespeople ($\beta = -.12$, $p < .001$) and ($\beta = .32$, $p < .001$). Annual PFP was negatively related to autonomous motivation ($\beta = .18$, $p < .01$).

Both autonomous ($\beta = .61$, $p < .001$) and controlled ($\beta = .11$, $p < .01$) motivation predicted increased work effort. Autonomous motivation ($\beta = -.56$, $p < .001$) was associated with a decrease in turnover intention. The exact opposite was true for controlled motivation ($\beta = .20$, $p < .001$), which was associated with an increase in turnover intention. Figure 6 demonstrates the aforementioned relationships.

Figure 6



Other studies that differentiate between controlled and autonomous motivational orientations in the workplace include the following. Deci, Olafsen, and Ryan (2017) found that when employees are intrinsically motivated they report higher wellness and quality of work. Landry, Kindlein, Trepanier, Forest, Zigarmi, Houson and Broadbeck (2016) investigated individual motives for making money and the impact of these motives on psychological well-being. They utilized the Motives for Making Money Scale (MMMS) for their research.

Their findings showed that self-integration of motives for making money increased the satisfaction of basic psychological needs (autonomy, competence, and relatedness), while non-integration of motives frustrated the satisfaction of basic psychological needs. Translating these findings to pharmaceutical salespeople, it is easy to see how salespeople who don't self-integrate their motives for selling or don't believe in their product can burnout.

Olafsen, Niemiec, Halvari, Deci, & Williams (2017) studied what they termed, "the dark side" of work. This dark side of work is exhibited when employee's basic psychological needs (autonomy, competence, and relatedness) are thwarted due to high levels of work-related stress. Their study demonstrated that the higher levels of work-related stress are related to: a) somatic symptom burden, b) emotional exhaustion, c) turnover intention, d) and absenteeism.

Work can be stressful, but the reality of life is that every human being must earn a living and provide for themselves and their loved ones. The question though, is whether an individual's motive for earning money affects their psychological well-being. Landry, Kindlein, Trépanier, Forest, Zigarmi, Houson, & Brodbeck (2016) and their research show that motives behind making money do influence psychological well-being for better or for worse.

Specifically, Landry et al. (2016) show that when an individual's motivation for making money is self-integrated, they enjoy a greater level of well-being due to need-satisfaction. On the flip side, when an individual's motivation is not self-integrated, it decreases well-being and is positively related to need-frustration. When these findings are translated into the pharmaceutical sales world, it is important that salespeople integrate within themselves and their social psyche their motivation for doing their job. If you are selling a product you don't believe in, and there is no self-integration, the motivational orientation is going to be more controlled.

Howard, Gagné, Morin, and Van den Broeck (2016) used self-determination theory to investigate various motivational profiles of employees at work. Instead of reducing their motivational profiles to the dichotomy of internal and external motivational tendencies, Howard et al. (2016) utilized four profiles: a) balanced motivation, b) amotivated, c) autonomously regulated, and d) highly motivated employees. Their findings show that autonomously motivated employees as well as highly motivated employees produce higher quality work and enjoyed a higher level of well-being. Most importantly, their findings show that autonomous motivation is much more effective in promoting positive workplace outcomes than controlling forms of motivation (p. 74).

Gillet, Fouquereau, Lafrenière, & Huyghebaert (2016) researched the impact of role ambiguity within the workplace and how this ambiguity, combined with either autonomous or controlled motivation, influenced employees' work satisfaction and anxiety. Their research utilized The Multidimensional Work Motivational scale survey as well as four questions about role ambiguity. From 698 employees (449 men, 249 women) surveyed, their research showed that role ambiguity influenced both autonomous and controlled motivation. Autonomous motivation was strongly related to satisfaction when ambiguity was low, and controlled motivation was strongly related to anxiety when role ambiguity was high. The more defined and specific the role of the pharmaceutical salesperson, the more satisfied and autonomously motivated they will be.

Olafsen, Halvari, Forest, and Deci (2015) researched whether work outcomes and employee motivation had any relation to employee compensation. They also investigated how intrinsic motivation and basic psychological needs were affected. To carry out their research they sent an electronic survey to 166 bank employees. They found that the amount of pay and

employee's perception about distributive justice of pay were not related to satisfaction of employee needs and intrinsic motivation. Put simply, monetary rewards did not impact an employee's intrinsic motivation.

Gillet, Lafrenière, Huyghebaert, and Fouquereau (2015) examined the underlying motives, both controlled and autonomous, for achievement goals in both work and education. They used the 3x2 achievement goal model which utilizes six basic goal constructs: ask-approach, task-avoidance, self-approach, self-avoidance, other-approach, and other-avoidance (p. 859). One interesting research finding was that, "achievement goals were most strongly related to positive outcomes when individuals pursue these goals for autonomous reasons" (p. 872). If pharmaceutical salespeople in the U.S.A. can have a certain amount of autonomy in the pursuit of their goals it appears that it might be beneficial to performance.

Cerasoli, Nicklin, & Ford (2014) conducted a meta-analysis researching the relationship between intrinsic motivation, extrinsic incentives and performance at work, school, and within physical domains. In their meta-analytical analysis they used two different moderators: a) performance type (quality vs, quantity), and b) incentive contingency (directly performance-salient vs. indirectly performance-salient). The meta-analysis consisted of 183 studies and 212,468 individuals ($k = 183$, $N = 212,468$). Using random effects meta-analytic methods, Cerasoli et al. concluded that intrinsic motivation is a medium to strong predictor of performance ($p=.21-.45$). They also found that intrinsic motivation was important no matter what incentive was in place; but found that intrinsic motivation was more important for incentives that were indirectly attached to performance as opposed to incentives that were directly attached.

When looking at performance from a quality vs. quantity standpoint. Cerasoli, Nicklin, & Ford (2014) found that intrinsic motivation was a strong predictor of the quality of performance,

whereas extrinsic incentives were a strong predictor of quantity performance. The conclusion of Cerasoli et al. from their meta-analysis is that intrinsic motivation and extrinsic motivation don't have to be antagonistic, but rather when combined together simultaneously produce the best motivational results. These are interesting findings for pharmaceutical sales people and those in positions of management. Instead of an either-or motivational approach, Cerasoli's meta-analytical findings suggest an all-inclusive approach for motivating pharmaceutical salespeople. These findings also corroborate the foundations of organismic integration theory (Deci & Ryan, 2002), which is a sub theory of self-determination theory.

Van Den Broeck, Lens, De Witte, Hans, & Van Coillie, (2013) researched the impact that controlled and autonomous forms of motivation had on a person's well-being. They did this utilizing SDT (self-determination theory) and a person-centered approach. Through the course of their research and samples from three different populations, four different motivational profiles or orientations emerged. These four profiles were:

- HA-HC profile - high autonomous and high controlled motivation
- HA-LC profile - high autonomous and low controlled motivation
- LA-HC profile - low autonomous and high controlled motivation
- LA-LC profile - low autonomous and low controlled motivation

Of these four different profiles, it was found that those scoring high in autonomous motivation scored the highest in work satisfaction and lowest in stress and burnout. These results reiterate the importance of autonomy for a healthy workplace, i.e. pharmaceutical salespeople.

Fernet, Austin, & Vallerand (2012) explored motivation at work utilizing the job demands resources model (JD-R) along with self-determination theory. They studied both autonomous motivation and controlled motivation and looked at how they related to employee

exhaustion and commitment. The data was collected from 586 school principals in the Quebec, Canada area. Data was collected on two different occasions nine months apart. From their research findings they concluded that autonomy had a negative relation to exhaustion, but a positive relation to commitment; and controlled motivation had a positive relation to exhaustion.

Grant, Nurmohamed, Ashford, & Dekas (2011) researched whether autonomous and controlled motivation toward a task moderated the relationship between initiative and performance. Specifically, Grant et al. investigated "whether the association between the quantity of initiative and their performance is strongest when their primary motivations toward a task are autonomous and not controlled" (p. 244). To carry out their research, Grant et al. looked at call center employees. They found that the initiative taken by call center employees was most positively related to the revenue they generated in the months where they reported high autonomous motivation and low controlled motivation. The work setting of call center employees is different from that of a pharmaceutical salesperson, but these findings again point to the importance of creating an environment for U.S. pharmaceutical salespeople where they feel autonomous and empowered.

Van den Broeck, Schreurs, De Witte, Vansteenkiste, Germeys, & Schaufeli (2011) used self-determination theory to understand the underlying motives for workaholism. Their study focused on two variables that are commonly associated with workaholism: a) working excessively, and b) working compulsively. Van den Broeck et al. (2011) utilized data from 370 Belgian white-collar workers. They found that autonomous motivation was positively associated with excessive working which translated into a positive association with vigor. Controlled motivation positively correlated to compulsive work and exhaustion (p. 600-601).

Opponents of self-determination theory in the workplace.

Eisenberger, Cameron, and Rhoades (1999) investigated the effects of pay for performance (PFP) on perceived self-determination and intrinsic motivation. They conducted three different studies. The first study was with college students, while the second and third studies were with employees in the workplace. Their findings tend to be at odds with the core ideas of self-determination theory (SDT). A quick synopsis of each study follows.

The first study by Eisenberger et al. (1999) was set up with four different groups of college students. The four groups categorized: a) normative-standard reward, b) normative-standard non-reward, c) absolute-standard reward, and d) absolute-standard non-reward. The students were then asked to look at two pairs of similar pictures with minor differences. Their instruction was to identify the minor differences in the pictures. This was done for multiples sets of pictures. Each group was read a slightly different message after they had identified the required number of differences in the pictures. Table 5 is a representation of the differences that each group was read:

Table 5

Group	Message
Normative-Standard Reward Group	You found more differences in the drawing than 80 % of your classmates, you will have achieved an excellent level of performance, for which you will receive a reward of $3.
Normative-Standard Non-Reward Group	You found more differences in the drawing than 80 % of your classmates; you will have achieved an excellent level of performance.

Absolute-Standard Reward Group	If you reach the point where you can find four differences, you will have achieved an excellent level of performance, for which you will receive a reward of $3.
Absolute-Standard Non-Reward Group	If you reach the point where you can find four differences, you will have achieved an excellent level of performance.

After the students performed the picture analysis, the experimenter then told the students that he had to leave the room for five or six minutes to retrieve a questionnaire for them to fill out. Before leaving the room, the experimenter told the students that they were free to look at magazines (Time or Newsweek) or the pictures they had just examined. Upon leaving the room, the experimenter then measured the amount of time that each student looked at the picture.

The findings from this study by Eisenberger et al. (1999) support some aspects and contrast other aspects of Cognitive Evaluation Theory (CET) (Deci et al., 1999). Cameron et al. showed that reward for higher performance has incremental effects on intrinsic motivation, which contrasts CET (p. 1031). Their findings also showed that the incremental effects of self-determination and competence regarding self-reported task enjoyment support CET.

In the second study performed by Eisenberger et al. (1999) they investigated sales employees in the workforce and how expected rewards for high performance affected employees' perceived autonomy. To carry out the research, 348 employees of a large chain discount electronics store in the Northeast United States were surveyed. Those surveyed were divided up between hourly paid and salaried employees: a) hourly paid sales support – 42%, b)

hourly paid salespeople - 34%, c) salaried sales-support – 20%, and d) salaried salespeople – 4%. In addition to the surveys from employees, supervisor ratings of each employee were also taken into account. Their findings contradicted that of CET in that performance-reward expectancy was positively related to perceived self-determination. Specifically, in summarizing their findings from study 1 and 2 Cameron et al. state:

> Reward for high performance appears to strengthen the perception of freedom of action experienced both for college students given novel tasks (Study 1) and employees carrying out their usual job responsibilities (Study 2). These effects are opposite to the decremental effects of reward predicted by CET (p. 1033).

The third study by Eisenberger et al. (1999) sampled a different population from the same electronics discount store in the Northeast United States. The intention of the third study was to assess: a) performance-reward expectancy, b) desire for control, and c) intrinsic motivation. Of the 367 employees who were surveyed, there was a 92% response rate. The findings from the third study were of a similar nature to studies 1 and 2. Study 3 Eisenberger et al. (1999) showed that a positive relation existed between expressions of interest in their ongoing work and performance-reward expectancy.

Although Eisenberger, Cameron, and Rhoades (1999) are antagonistic in their research towards self-determination theory, the pro-research for self-determination theory far outweighs the oppositional research. Self-determination theory is one of the most researched (Ryan, & Deci, 2017) motivational theories. Self-determination theory along with its measurement tool called the General Causality Orientations Scale, address the need of the study to be able to differentiate between intrinsic and extrinsic motivation. A few antagonistic studies in opposition

to self-determination theory were not enough to dissuade and move the research in a different direction.

Chapter 3 – Method

Research Design and Rationale

To determine if motivational orientation among U.S.-Based Pharmaceutical salespeople influences performance, a quantitative study will be undertaken. The two motivational orientations which are the focus of this study are intrinsic and extrinsic motivation. This study focuses on how these two orientations contribute to or undermine a U.S. pharmaceutical salesperson's performance. Self-determination theory, which encompasses both intrinsic and extrinsic motivation, is the underlying theory guiding this research. The results of this research have implications for both how pharmaceutical companies hire and manage their salespeople.

Basic research roadmap.

To measure whether a U.S.-Based Pharmaceutical salesperson is oriented more towards intrinsic or extrinsic motivation; the "General Causality Orientations Scale" will be used. The author utilized his LinkedIn Network of pharmaceutical salespeople with whom he has connected and networked over the years. The pharmaceutical companies from which the sample will be retrieved include the following: a) Pfizer, b) Amgen, c) Eli Lilly, d) Sunovion, e) Takeda, f) Sanofi, g) Astra Zeneca, h) Bayer, i) Allergan, j) Actelion, k) Bristol Meyers Squibb, l) Boehringer Ingelheim, m) Daiichi Sankyo, n) Eisai, o) Merck, p) Novartis, q) GlaxoSmithKline, r) Lundbeck, s) Indivior, t) Genentech, u) Otsuka, and v) Sage.

The author exported his LinkedIn connections into a Microsoft Excel document and then sifted his connections to find those who were employed within the pharmaceutical industry. After sifting through the LinkedIn connection, the author found 224 LinkedIn connections within his network. The author then sorted through these 224 connections to narrow down his sample population to a smaller group of likely respondents.

The number of U.S.-Based Pharmaceutical salespeople to whom the GCOS survey was sent was 172. Of these 172 pharmaceutical salespeople, 109 responded, thus giving a response rate of 63%. These U.S.-Based Pharmaceutical salespeople surveyed live in different locations around the United States. These geographic locations cover every corner of the United States, from New York to California, Florida to Washington State, and everything in between.

The General Causality Orientations Scale (GCOS) measures autonomous and controlled orientations (as well as impersonal) which are akin to intrinsic and extrinsic motivation (1985). Deci and Ryan (1985), the founders of SDT and the creators of the GCOS, state that the "scale was shown to have internal consistency and temporal stability" (p. 109). As stated earlier, Deci and Ryan (1985) also found that the Cronbach α for the GCOS are 0.75 and a test-retest coefficient of 0.74 over two months. As noted previously, Cortina (2013) noted that multiple scholars determine a scale and survey to be sufficiently reliable if the α value is greater than .70. Taber (2018) backs the findings of Cortina stating that it is common in science and education to accept an alpha value of .70 as being a sufficient measure of reliability and consistency for an instrument of measurement.

> Cronbach α is a special measure of reliability known as internal consistency, where the more consistently individual item scores vary with the total score on the test, the higher the value. And, the higher the value, the more confidence you can have that this is a test that is internally consistent or measures one thing, and that one thing is the sum of what each item evaluates (Ayiro, 2012, p. 358).

Deci and Ryan (1985) also shared that the GCOS should correlate with a variety of other theoretically related constructs.

The answers from the General Causality Orientations Scale will then be used in combination with the U.S.-Based Pharmaceutical salespeople's performance to run various inferential statistics such as: a) linear regression, b) multiple regression, and c) correlation. To verify sales performance, there will be a few questions added to the end of the GCOS survey asking how many times these pharmaceutical salespeople have achieved presidents club, and the number of quarters (3-month periods) where they achieved 100% or greater to goal in sales performance. The president's club sales awards is an indicator of performance because it is an award given to the top 10% of sales performers (annual % to goal) in many pharmaceutical companies.

The presidents club award is given out only once a year. For the purposes of the survey, president's club will be measured in increments of 2 (i.e. 1-2, 3-4, 5-6, and 7+). Having the motivational orientation and performance findings data should indicate whether motivational orientation does in fact influence performance.

The survey request will be sent out by the author of this research via e-mail with a link to the survey. The survey software that the author has chosen to utilize is Survey Monkey. Survey Monkey offers multiple means by which the survey can be sent. Some of these include: a) custom hyperlink, b) e-mail, and c) text. The author will utilize each one of these means to increase the response rate.

Initially, the survey will be sent out via a hyperlink with an e-mail catered to each individual with my photo at the end. Each participant was promised a $25 Amazon e-gift card for their time. An example of a customized e-mail is something close to the following on the next page (for anonymity names have been changed):

John,

I hope that all is well with you and your family! I am a former colleague from Takeda. It's been a while!

In order to graduate and finish my degree, I need your help by taking this 5 minute survey (click on the link). I am sending this survey to people that I know work in the pharmaceutical industry. Survey Monkey estimates that this survey will take 5 minutes. Your answers will be anonymous, and reported in aggregate.

I know your time is valuable, so as a token of appreciation for taking this survey, ***I will send you a $25 Amazon e-gift card****. After you take the survey, simply email me to let me know you finished, and I will email your e-gift card within a week.*

Thank You So Much!

After an initial customized e-mail is sent to each participant, the author will then send out a blanket e-mail to all of those who have not taken the survey. This will be done a few days after the initial customized e-mail. There are also a handful of participants whose phone number the author has saved in his phone. A few individualized texts will be sent to these individuals

with a link to the survey. Two reminder e-mails will also be sent out. The majority of survey responses were collected over the period of about two weeks (June 18 – July 3, 2019).

Strength of the general causality orientations scale (GCOS).

The General Causality Orientations Scale (GCOS) was chosen due to its ability to differentiate between motivational orientations at an individual level (Deci & Ryan, 1985). The GCOS measures the strength of three motivational orientations at the individual level: a) autonomous, b) controlled, and c) impersonal orientations. The autonomous orientation of motivation measures the extent to which an individual prefers an environment that appeals to their intrinsic motivation while giving them a healthy challenge (1985).

The controlled orientation of motivation deals primarily with people who are oriented towards extrinsic motivators such as: a) rewards, b) deadlines, c) structures, d) ego-involvements, and e) the directives of others (1985). The third and last orientation that the GCOS measures is the impersonal motivational orientation. Individuals scoring high in the impersonal motivational orientation are those individuals who feel that a desired state is unattainable and that people who reach a desired state did so by luck. People who score high in the impersonal orientation also may feel anxious and ineffective and as if they are unable to influence any outcome (1985). They could also be considered amotivated.

The GCOS comes in two forms: a 12-question version with 36 total items, and a 17-question form with 51 total items. The 12-question version is the most tested and validated of the two GCOS versions. The GCOS presents various situational questions, with some looking at social motives and others looking at achievement motives. With each situational question, there are three statements below with a Likert scale numbered from 1 to 7 (very unlikely; moderately likely; and very likely) below each statement. Each of the three statements below each question

or sketch is geared to one of the three orientations: a) autonomous, b) controlled, and c) impersonal.

It is interesting to note that in the beginning stages of developing the GCOS, what is now known as the autonomous orientation was called internal orientation, and what is now known as the controlled orientation was called external orientation (p. 111). The initial reasons for naming them internal and external were due to the perceived locus of causality associated with each orientation. As Deci and Ryan considered the names of these first two orientations more, they changed them to what they are now known as, autonomous and controlled.

If there were a continuum to show how each of the three orientations of the GCOS is related to self-determination, Deci & Ryan (1985) determined that the autonomous orientation would be most closely related to self-determination, with controlled orientation being quite a bit less, while the impersonal orientation would be considered the antithesis of self-determination. In the development of the GCOS, Deci and Ryan made predictions about how other certain constructs might be related either positively or negatively to one of the three motivational orientations. Some of the constructs include: a) self-esteem, b) self-consciousness, c) supporting-autonomy, d) type A behavior, e) self-derogation, f) depression, and g) behaviors (p. 115-118).

Development of the GCOS.

The development of the GCOS was done through a rigorous process to make sure that it provided valid and reliable results. To begin the development of the GCOS, people familiar with self-determination theory developed a 96-item (32 vignettes) scale that asked different situational questions and provided choices related to how people would typically respond to those situations. To each situational question, there were three probable responses that matched motivational orientations of: autonomous (A), controlled (C), or, impersonal (I). Each of these

responses could be rated on a Likert scale of 1 to 7, with 1 being very unlikely in how the individual would respond to the situation, and 7 being very likely of how the individual would respond to the situation.

The initial 96-item questionnaire was administered to 200 undergraduate students at the University of Rochester. The answers from these 200 undergraduate students were then put through a factor analysis. From the initial factor analysis, 36 items (12 vignettes) were identified as giving the appropriate factor loading pattern. Of these 36 items, five were rewritten due to loading on a correct factor of less than .4. The final GCOS had 12 autonomy items, 12 controlled items, and 12 impersonal items, one for each situational question. To see the GCOS in its entirety please refer to Appendix A. Table 6 explains each of the steps of the questionnaire process in a more concise manner.

Table 6

Development Process for the General Causality Orientations Scale (GCOS)	
Step 1	96-item questionnaire (36 vignettes) was developed by people familiar with self-determination theory that was then administered to 200 undergraduate students at the University of Rochester.
Step 2	The 200 undergraduate students' answers were put through a factor analysis.
Step 3	36 items (12 vignettes) were identified from the initial factor analysis of the students' answers. This included 12 questions for each motivational orientation (autonomy, controlled, and impersonal)
Step 4	5 of the 36 items were rewritten due to loading on a correct factor of less than 4.
Step 5	The revised 36 item questionnaire was then administered to 923 undergraduate students and 123 nonstudents.

Step 6	To analyze the reliability of the questions of each motivational orientation (autonomous, controlled, and impersonal), the Cronbach α procedure was utilized for 636 students' answers. The Cronbach α non-standardized values for each motivational orientation were: a) autonomy, .744, b) control, .694, and c) impersonal, .741.
Step 7	Correlation Analysis was utilized to compare each subscale item with the overall total for each motivational orientation.
Step 8	To test the temporal stability of the GCOS 51 people took the GCOS again two months later. The Cronbach α for each category of the retest were: autonomy .749, controlled .711, and impersonal .778, indicating stability.

The revised GCOS was then given to a much larger sample population of 923 undergraduate students and 123 nonstudents. Some of the sample population completed the questionnaire once, and some completed it twice, so the final numbers used to analyze the scale vary. To analyze the reliability of the three subscales (A, C, and I) of the GCOS, data was taken from 636 students and the Cronbach α procedure was utilized. The Cronbach α non-standardized values were: a) autonomy, .744, b) control, .694, and c) impersonal, .741 (Deci and Ryan, 1985, p. 118-119).

Further analysis was carried out to verify the accuracy of the GCOS using correlation. Each item in each subscale (A, C, I) was compared with the overall total of the subscale through correlation analysis. The table below represents the mean and range correlation scores for each item in each category (Deci & Ryan, 1985). As a reminder, correlations and their R-value

(whether negative or positive) (+/-.01 to +/-.3) are considered weak; between (+/-.4 to +/-.6) are considered moderate; and between (+/-.7 to +/-.99) are considered strong.

Table 7

THE RANGE AND THE AVERAGE OF CORRELATION COEFFICIENTS ($\bar{r}$) BETWEEN THE ITEMS FROM EACH SUBSCALE AND THE THREE SUBSCALE TOTAL SCORES (n = 636)

	A total score	C total score	I total score
Items from A subscale	.428–.603	−.087–.151	−247–.032
	$\bar{r}$ = .522	$\bar{r}$ = .018	$\bar{r}$ = .117
Items from C subscale	−.108–.296	.368–.590	−.034–.251
	$\bar{r}$ = .023	$\bar{r}$ = .483	$\bar{r}$ = .131
Items from I subscale	−.334–.040	−.054–.301	.335–.593
	$\bar{r}$ = −.134	$\bar{r}$ = .147	$\bar{r}$ = .508

To test the temporal stability of the scale, 51 subjects took the GCOS again two months later. The test-retest reliabilities were very strong indicating good stability for each of the 3 categories. The Cronbach α for each category of the retest were: A .749, C .711, and I .778. In addition to being tested for reliability and validity, the GCOS was also analyzed in comparison to other constructs or questionnaires. Some of these constructs include:

- Social Desirability
- Supporting Autonomy in Children
- Type – A Coronary Prone Behavior Pattern
- Locus of Control
- Self-Derogation
- Depression
- Private self-consciousness
- Public self-consciousness
- Social Anxiety
- Ego Development

- Self-Esteem

In terms of the relationship among the A (autonomy), C (controlled), and I (impersonal) subscales of the GCOS and the various constructs listed above, various positive and negative relationships were statistically significant (Deci & Ryan, 1985). To offer a better idea of the structure and makings of the GCOS, it is included in its entirety, along with the instructions in Appendix A (Deci & Ryan, 1985).

Participants and Site

The U.S.-Based Pharmaceutical salespeople to whom the GCOS survey will be sent come from a conglomerate of biopharmaceutical companies. Some of these include: a) Pfizer, b) Amgen, c) Eli Lilly, d) Sunovion, e) Takeda, f) Sanofi, g) Astra Zeneca, h) Bayer, i) Allergan, j) Actelion, k) Bristol Meyers Squibb, l) Boehringer Ingelheim, m) Daiichi Sankyo, n) Eisai, o) Merck, p) Novartis, q) GlaxoSmithKline (GSK), r) Lundbeck, s) Indivior, t) Genentech, u) Otsuka, and v) Sage. The survey was sent to a total of 172 pharmaceutical salespeople individuals at these companies via e-mail and text.

For the purposes of this study, pharmaceutical sales will be defined as a more technical and sophisticated sale than your typical car, retail, or door-to-door sale. More specifically, this study will utilize the points of differentiation that Rackham (1988) utilizes to separate technical sales from less technical sales. Rackham (1988) uses four categories to differentiate what he terms a small sale from a large sale (pharmaceutical sale). These four points are: a) length of the selling cycle, b) size of the customer's commitment, c) ongoing relationship, and d) the risk of mistakes. In a large or pharmaceutical sale, the selling cycle is much longer; the customer's monetary commitment is larger; there is an ongoing relationship with the client; and there is

much more risk of mistake. The industry of pharmaceutical sales met the criterion of a technical sales described by Rackham (1988).

Being that this survey will be sent directly to the pharmaceutical salespeople, there is no need for a randomized sample. The minimum requirement for entry into the profession of pharmaceutical sales is a bachelor's degree in a scientific or business field of study, and years of successful business-to-business selling experience. The competition for these positions can be extremely fierce due to the high paying nature of these jobs. As the pharmaceutical sales positions become more specialized, the pay goes up even higher and the competition becomes even more fierce. Some people in pharmaceutical sales roles have a master's degree and some even more education than that.

Using this population of pharmaceutical salespeople will provide insight into how a pharmaceutical salesperson's motivational orientation—whether intrinsic (autonomous) or extrinsic (controlled)—factors into their performance. Because the pharmaceutical salespeople population for this study is located all over the United States, the study has generalizability potential to the entire United States and to the pharmaceutical industry.

Data Collection

For data collection, this study is utilizing the General Causality Orientations Scale (GCOS) survey developed by Ryan and Deci (1985). Deci and Ryan stated that the GCOS "was shown to have internal consistency and temporal stability" (p. 109). It is interesting to note that in the beginning stages of the GCOS development, what is now known as the autonomous orientation was called internal orientation, and what is now known as the controlled orientation was called external orientation (p. 111).

The GCOS measures the strength of three motivational orientations at the individual level which are: a) autonomous, b) controlled, and c) impersonal orientations. The autonomous orientation of motivation measures the extent to which an individual prefers an environment that appeals to their intrinsic motivation (1985). The controlled orientation deals primarily with people who are oriented towards extrinsic motivators such as: a) rewards, b) deadlines, c) structures, d) ego-involvements, and e) the directives of others (1985). Individuals scoring high in the impersonal orientation feel that a desired state is unattainable and that people who reach a desired state did so by luck. People who score high in the impersonal orientation may feel anxious and ineffective and unable to affect an outcome (1985). They are also amotivated.

In addition to the GCOS data, the other pieces of data that will be needed revolve around the demographics of the salesforce and their performance over a set period of time. Some of the demographics required are: a) years of pharmaceutical sales experience, b) company sales rankings c) sales awards (president's club, etc.), and d) gender

To collect this data, the survey will be sent out via e-mail and text to the 172 pharmaceutical salespeople across the United States included in the author's study. The survey will be created electronically using Survey Monkey and a link to the survey will be included in the e-mail. Some pharmaceutical salespeople will also be contacted via text with a link to the survey to increase the response rate.

When the first e-mail with the invitation to the survey is sent to the pharmaceutical salespeople it will not have a "complete by date." Three to four days after the initial e-mail is sent out, a follow up e-mail will be sent reminding those people who have yet to complete the survey about its deadline. Text messages will then be sent to those who have not completed the essay. The answers from the completed surveys will be recorded and kept automatically on a

data cloud of Survey Monkey. The data will then be retrieved after the survey deadline has passed and exported into SPSS to run various statistical measures.

Measures

The General Causality Orientations Scale (GCOS) is the survey instrument of choice for this specific study. The main reason that the GCOS has been chosen is that it aligns very closely with what this study is trying to determine; the motivational orientation of pharmaceutical salespeople. There are 12 vignettes that have three sub questions/statements beneath each vignette. Each of the three sub questions/statements is a situational question with a Likert scale numbered from 1 to 7 below each statement. Each of the three statements for each question on the survey is geared to one of the three motivational orientations: a) autonomous, b) controlled, and c) impersonal.

The survey results for each individual can be tallied to show to what extent they are oriented to an autonomous, controlled, or impersonal form of motivation. This is done by adding the autonomous sub-scores from each statement of the 12 vignettes, along with the controlled and impersonal scores and then taking the averages. The closer the sub-scale average is to 7, the stronger the motivational orientation for that specific individual. The exact opposite would be true (weaker) for those individuals scoring closer to a 1 in a certain motivational orientation.

There are both independent and dependent variables in the study which will be utilized to run various inferential statistics. The main dependent variable in this study is the sales performance of the pharmaceutical salespeople. This will be supplied via information provided by those taking the survey at the end of the GCOS. The most important independent variables in this study are the three motivational orientations from the GCOS, which are autonomy,

controlled, and impersonal. Other independent variables which will be used to answer the research questions of this study include years of pharmaceutical sales experience and gender.

The reliability and validity of the GCOS is very strong and went through a rigorous process to make sure that it provided accurate data. As has been noted previously, Deci and Ryan (1985) who created the instrument stated that the GCOS "was shown to have internal consistency and temporal stability" (p. 109). The GCOS comes in two forms, a 12-question version with 36 total items, and a 17-question form with 51 total items. The 12 questions version in terms of quality is the most tested and validated of the two GCOS versions.

Data Analysis

To analyze the data collected from the GCOS questionnaire, various inferential and descriptive statistics will be utilized. The descriptive statistics that will be utilized are: a) mean, b) median, c) mode, and d) standard deviation. These descriptive statistics will be used with each of the three motivational orientations both at the individual and group level. Each of the 12 vignettes on the GCOS has three statements, one for each of the motivational orientations.

The score for each sub statements will be added together and divided by 12 to give the average motivational orientation at the individual level. To take the average of the group, the same process would be followed as was done at the individual level, then adding all those scores together and dividing by the number of completed responses. Having the statistical mean of autonomous, controlled, and impersonal motivational orientations are important for being able to answer the research questions of this study.

The first and main research question of this study is the following, "Do U.S.-Based Pharmaceutical Salespeople who are motivated intrinsically achieve annual sales awards and rank higher more frequently in their company (President's Club, Top 50% Ranking, etc.) than

those who are motivated extrinsically?" To answer this first research question inferential statistics will be used, including both correlation and linear regression analysis.

To see which motivational orientation has a stronger correlation to sales performance, the statistical mean of each of these orientations (autonomous, controlled, and impersonal) will be correlated to the sales performance (ranking, average ranking, etc.) of each pharmaceutical salesperson. As mentioned previously, correlations (whether negative or positive) with an r value between (+/-.01 to +/-.3) are considered weak; between (+/-.4 to +/-.6) are considered moderate; and between (+/-.7 to +/-.99) are considered strong.

To answer the first research question using linear regression, sales performance will be used as the dependent variable, and motivational orientation will be used as the independent variable. Each motivational orientation (autonomous, controlled, and impersonal) can then be compared both individually and at the group level to see how strong of a predictor (to what extent) each motivational orientation is for sales performance.

To answer the second research question, linear regression and multiple regression will be used. As a reminder the second research question is the following, "Do U.S.-Based Pharmaceutical Salespeople who are motivated extrinsically achieve annual sales awards and rank higher more frequently in their company (President's Club, Top 50% Ranking, etc.) than those who are motivated intrinsically?" As with the first research question, sales performance will be used as the dependent variable, and motivational orientation will be used as the independent variable.

The reason for selecting correlation, linear regression and multiple regression as the inferential statistics is for their ability to show relationships, and the strength of those relationships between variables. Regression, gives a stronger inference of causality among

predictor (independent) variables and outcome (dependent variables). In addition to the inferential statistics (correlation, regression, and multiple regression) other inferential statistics may also be used.

Chapter 4 - Results and Data Analysis

This study sought to identify if motivational orientation of pharmaceutical salespeople in the U.S.A. influenced sales performance. Specifically, the main research question of this research is the following, "Do U.S.-Based Pharmaceutical salespeople who are motivated intrinsically achieve annual sales awards and rank higher more frequently in their company (President's Club, Top 50% Ranking, etc.) than those who are motivated extrinsically?"

This study utilized the General Causality Orientations Scale (GCOS) developed by Deci and Ryan (1985) to measure the motivational orientation (autonomous, controlled, or impersonal) of each of the pharmaceutical sales participants. The autonomous motivational orientation is akin to intrinsic motivation; the controlled motivational orientation is similar to extrinsic motivation; and the impersonal motivational orientation is like amotivation.

To examine the results derived from the GCOS survey, this chapter will examine the following items: a) response rate, b) demographics, c) descriptive statistics of GCOS, and d) Research Question Analysis.

Response Rate

After approximately three weeks of sending out emails, texts, and reminders via Survey Monkey, 109 (n = 109) of the 172 pharmaceutical salespeople to whom the GCOS survey was sent completed the survey in its entirety, giving a response rate of about 63%. There were five pharmaceutical salespeople who started the survey but failed to finish and complete all the questions. Had the other five completed the survey in its entirety it would have been a sample size of 114, but their responses won't be included in statistical calculations due to them not completing the survey.

With a survey response of 109 (n = 109) U.S.-Based Pharmaceutical salespeople, the margin of error for all calculations will be plus or minus 10%, with a 95% confidence interval (Israel, 2009a; Yamane, 1967). This factors in the estimate of the number of pharmaceutical salespeople in the U.S.A. at 62,723 (BLS and TEConomy, 2014).

Yamane's (1967) sample table shows that when the size of the population being represented is between 50,000 and 100,000 that a sample of 100 is sufficient to represent this population with a 95% confidence interval and a margin of error or 10%. To corroborate Yamane's table, his formula (n = N / (1 + Ne^2)) was utilized. The number from the BLS of 62,723 was plugged into the formula and it corroborated the table findings showing that a sample size of approximately 99.84 pharmaceutical salespeople was needed for a margin of error of 10% and a 95% confidence interval. These findings back the response of N=109 completed surveys and the validity of the findings.

The response of n=109 is enough to run linear regression and correlation calculations. Green (1991) has two formulas which he uses to determine the number of responses necessary to run these calculations. He utilizes number of subjects (N) and number of predictors (m) to represent the variables in his formula. His formulas are $N \geq 50 + 8\ m$ for the multiple correlation and $N \geq 104 + m$ for the partial correlation. With a response of n=109, there is a sufficient number of subjects to run regression and correlation analysis.

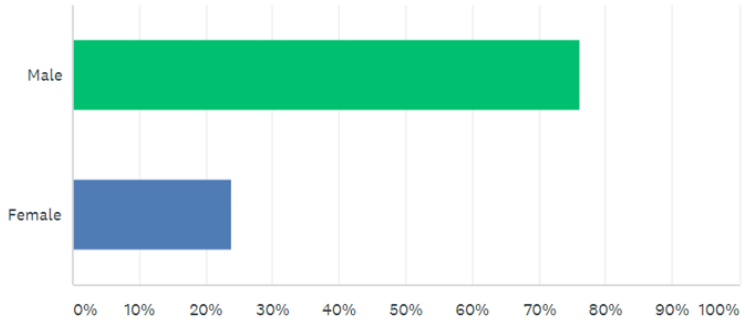
Demographics

Gender.

Of the 172 pharmaceutical salespeople to whom the survey was sent, 109 (n = 109) completed the survey; 76.15% were male (n=83), and 23.85% were female (n=26), which denotes a heavily weighted male sample. This is not too far off from the industry norms. A 2019

industry survey done by medreps.com had a 67% male response and a 33% female response (Mullins, 2019). In their prior year industry survey of 2018, medreps.com had a 70% male response with a 30% female response. Table 8 below shows the gender breakdown of the 109 responses by pharmaceutical salespeople.

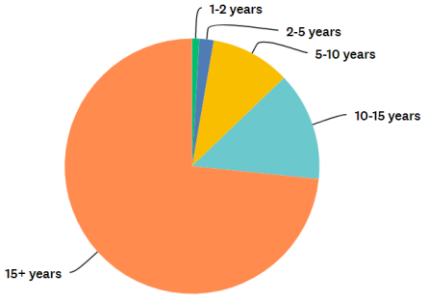
Table 8

Question	What is your Gender?
Responses	

Pharmaceutical sales experience.

The survey respondents had many years of experience in pharmaceutical sales. Seventy-three percent (n=80) of the 109 respondents had 15+ years of experience in pharmaceutical sales. Approximately 14% (n=15) of the respondents had between 10 and 15 years of experience in pharmaceutical sales. Ten percent (n = 11) of the respondents had between 5 and 10 years of pharmaceutical sales experience. Only 1 percent of the respondents had between 5-2 years (n=2) of experience as was the same for those with 1-2 years (n=1) of pharmaceutical sales experience. This was a very seasoned and experienced group of pharmaceutical salespeople. Table 9 on the next page shows the breakdown of years of pharmaceutical sales experience.

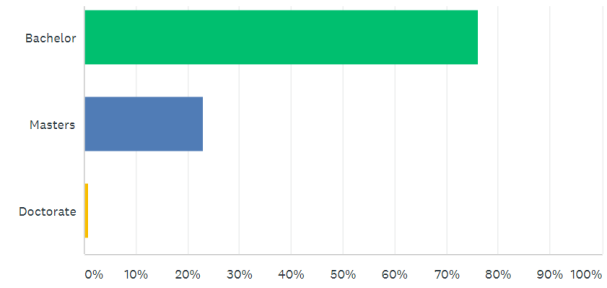
Table 9

Question	**How many years of experience do you have in pharmaceutical sales?**
Responses	

Education.

The highest education level of the of the n=109 respondents was split between three levels: a) bachelor's, b) master's and c) doctorate. When looking at the bachelor's level of education, 76% of the pharmaceutical sales respondent's (n=83) highest level of education was at this level. At the master's level of education, there were 23% of the respondents (n=25) who had achieved this level, and just one person out of the 109 respondents had achieved the doctorate level of education. As mentioned previously, most pharmaceutical sales jobs require a bachelor's degree as part of the minimum requirements for being hired. Table 10 shows the breakdown of the education level of the respondents.

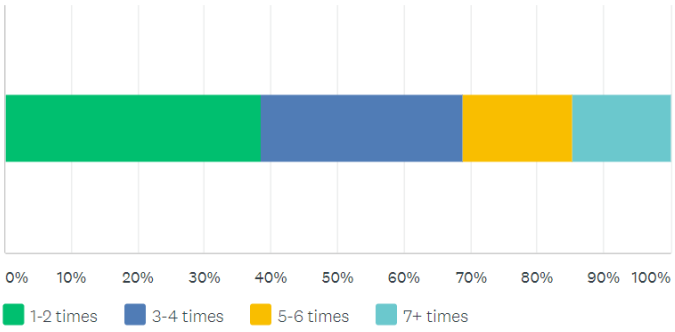
Table 10

Question	What is your highest level of education achieved?
Responses	

Awards.

A question at the end of the survey asked the following, “How many times in your pharmaceutical career have you received a sales award such as presidents club or the equivalent thereof (please guess if you are unsure)”? The answer options for the respondents were: a) 1-2 times, b) 3-4 times, c) 5-6 times, and d) 7+ times. Of the respondents, 42 (n=42) had achieved the president’s club award 1-2 times in their career; 33 (n=33) of the respondents had achieved the president’s club award 3-4 times in their career. The number of pharmaceutical salespeople who had achieved the president’s club at least 5-6 times in their career was smaller, at 18. The final category of 7+ presidents club wins was achieved by 16 of the respondents. Table 11 below shows the breakdown of the quantity of president’s club wins.

Table 11

Question	**How many times in your pharmaceutical career have you received a sales award such as presidents club or the equivalent thereof (please guess if you are unsure)?**
Responses	

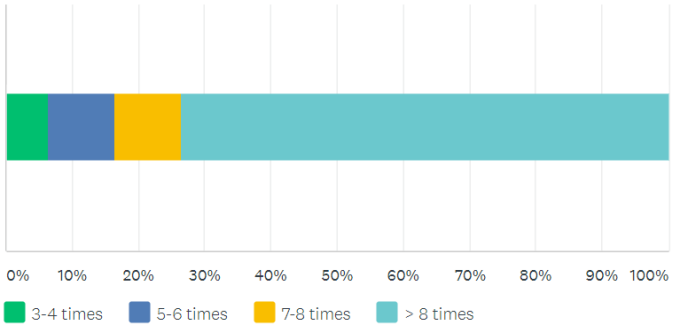
Sales Rankings.

One question towards the end of the survey asked, “How many times in your pharmaceutical sales career have you finished in the top 50% of the salesforce at year end”? Pharmaceutical salespeople in each company are ranked against their peers on an annual basis.

These rankings determine awards and bonus payouts among other things. The response options for this question were the following: a) 3-4 times, b) 5-6 times, c) 7-8 times, and d) > 8 times.

The largest response for this question was for the people who finished in the top 50% of their respective salesforce more than 8 times in their careers. The number of people selecting this response on the question was 80 (n=80), or 73% of the respondents. Eleven respondents finished in the top 50% of their companies 7-8 times. Eleven (n=11) respondents also finished in the top 50% of their companies 5-6 times. Seven respondents selected finishing in the top 50% of their companies' annual sales rankings 3-4 times. Table 12 Below shows the respondents choices.

Table 12

Question	**How many times have you finished ranked in the top 50% of your salesforce at year end?**
Responses	

Descriptive Statistics of the General Causality Orientations Scale (GCOS)

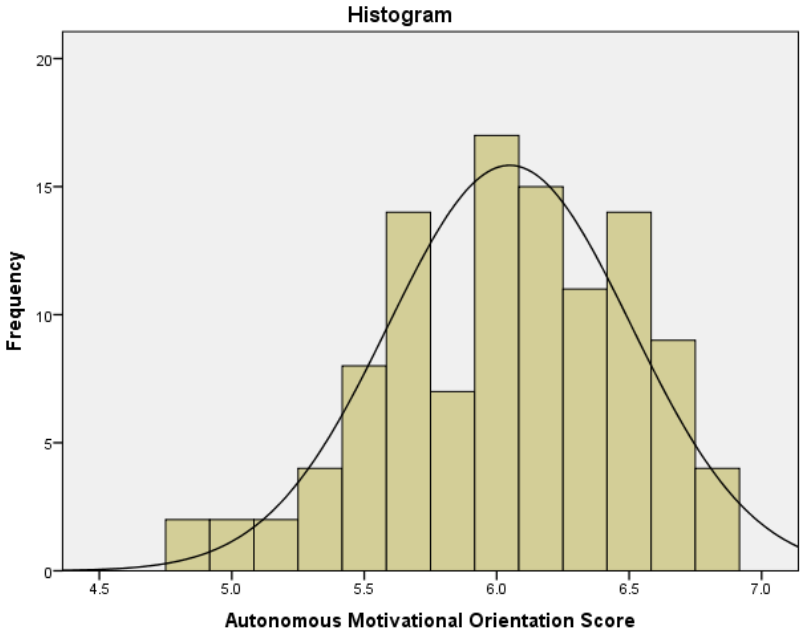
The GCOS measures the strength of three motivational orientations at the individual pharmaceutical salesperson level which are: a) autonomous, b) controlled, and c) impersonal orientations. The descriptive statistics that will be utilized are: a) mean, b) median, c) mode, and d) standard deviation. These descriptive statistics will be used with each of the three motivational orientations. Each of the 12 vignettes on the GCOS has three statements, one for each of the

motivational orientations. The score for each sub statement will be added together and divided by 12 to give the average for each motivational orientation at the individual level.

Autonomous Motivational Orientation.

The autonomous orientation of motivation measures the extent to which an individual prefers an environment that appeals to their intrinsic motivation (Deci & Ryan, 1985). Various findings were found when analyzing the autonomous survey results for the pharmaceutical salespeople. As a reminder, a 7-point Likert scale was utilized ranging from very unlikely (1) to very likely (7). Refer to the appendix to look at what the 12 specific autonomous questions were for each vignette.

The histogram below gives a frequency summary for the average autonomous motivational orientation score for all n=109 pharmaceutical sales respondents. This was done by taking the score for each of the autonomous questions in the 12 vignettes, adding them together and dividing by 12. As a reminder, those being surveyed didn't know what questions were for autonomous, controlled, impersonal, etc.



Autonomous Motivational Orientation - Select Vignettes.

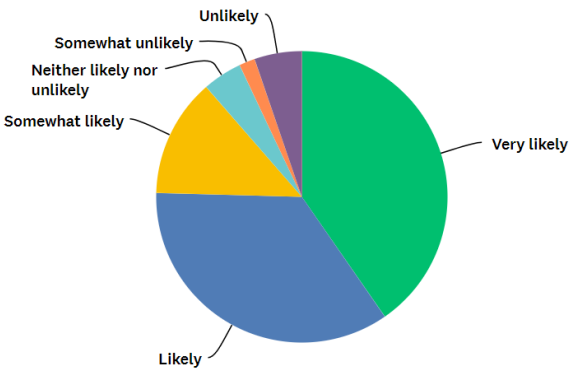
To get into more of the specifics, three of the autonomous questions will be reviewed in more detail. As a reminder, all the questions can be viewed in their entirety in the appendix in the GCOS survey. Due to the enormity of data, only three questions for each motivational orientation will be reviewed. The three questions that will be reviewed in the autonomous results are from vignette 4, 8, and 12.

In vignette #4, the following situation is presented: "You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. You would likely handle this by." After this scenario is presented, there are three different response options with one response representing either autonomous, controlled, or impersonal motivational orientations. Each response was rated individually on a 1 to 7 Likert scale by the pharmaceutical salespeople.

The autonomous response, was, "telling the three workers the situation and having them work with you on the schedule." The spread of the responses from very unlikely to very likely was the following: a) very unlikely (n= 0), b) unlikely (n= 6), c) somewhat unlikely (n= 2), d) neither likely nor unlikely (n= 5), e) somewhat likely (n= 15), f) likely (n= 40), and g) very likely (n=46). Table 14 below shows the: a) situation, b) the autonomous behavior, and c) the responses of the pharmaceutical salespeople.

Table 14

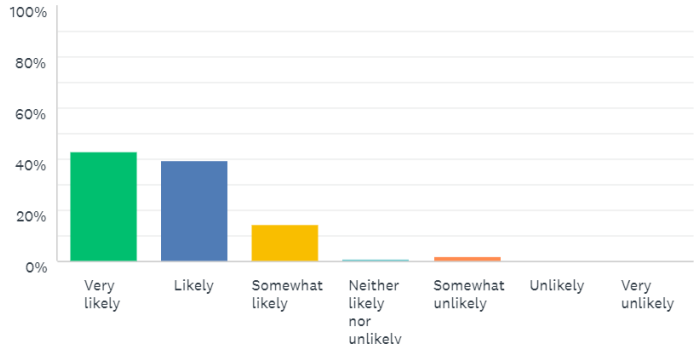
Situation Vignette #4	You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. you would likely handle this by:
Autonomous Behavior	Telling the three workers the situation and having them work with you on the schedule.

Responses	

In vignette #8, the following situation is presented, "You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterized as:" Each response was rated individually on a 1 to 7 Likert scale by the pharmaceutical salespeople. The autonomous response was, "Seek participation: get inputs from others who want to make them before you make the final plans." The spread of the responses from very unlikely to very likely was the following: a) very unlikely (n= 0), b) unlikely (n= 0), c) somewhat unlikely (n= 2), d) neither likely nor unlikely (n= 1), e) somewhat likely (n= 16), f) likely (n= 44), and g) very likely (n=48). Table 15 below shows the: a) situation, b) the autonomous behavior, and c) the responses of the pharmaceutical salespeople.

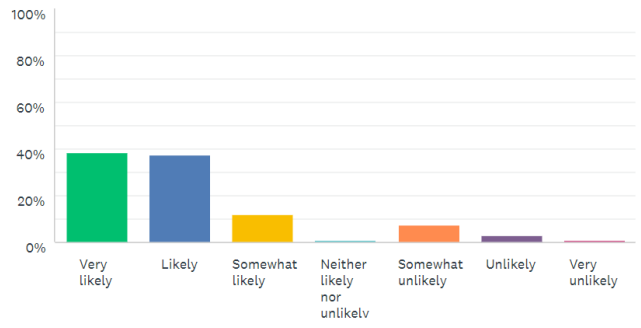
Table 15

Situation Vignette #8	You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterized as:
Autonomous Behavior	Seek participation: get inputs from others who want to make them before you make the final plans.

Responses	

In vignette #12, the following situation is presented, "Your company has promoted you to a position in a city far from your present location. As you think about the move you would probably:" Each response was rated individually on a 1 to 7 Likert scale by the pharmaceutical salespeople. The autonomous response, was, "Feel interested in the new challenge and a little nervous at the same time." The spread of the responses from very unlikely to very likely was the following: a) very unlikely (n= 1), b) unlikely (n= 3), c) somewhat unlikely (n= 8), d) neither likely nor unlikely (n= 1), e) somewhat likely (n= 13), f) likely (n= 41), and g) very likely (n=42). Table 16 below shows the: a) situation, b) the autonomous behavior, and c) the responses of the pharmaceutical salespeople.

Table 16

Situation Vignette #12	Your company has promoted you to a position in a city far from your present location. As you think about the move you would probably:
Autonomous Behavior	Feel interested in the new challenge and a little nervous at the same time.
Responses	

Autonomous Motivational Orientation Descriptive Statistics.

This section analyzes the average of the autonomous responses of the 109 pharmaceutical salespeople as a group. To do this there were 12 autonomous responses (1 for each vignette) for each of the 109 pharmaceutical salespeople. These 12 responses were added together and divided by 12 to give an average autonomous orientation response for each pharmaceutical salesperson. Each of the averages for the 109 pharmaceutical salespeople were then used to calculate the descriptive statistics of: a) min, b) max, c) mean, and d) standard deviation.

The minimum autonomous average among the 109 pharmaceutical salespeople was 4.83. The maximum, or highest autonomous motivational orientation average of the 12 responses from one pharmaceutical salesperson was 6.83. The mean of the 109 pharmaceutical salespeople for the autonomous (intrinsic) motivational orientation was approximately 6.05. The standard deviation for the 109 pharmaceutical salespeople was approximately .458. These items are presented in table 17 below.

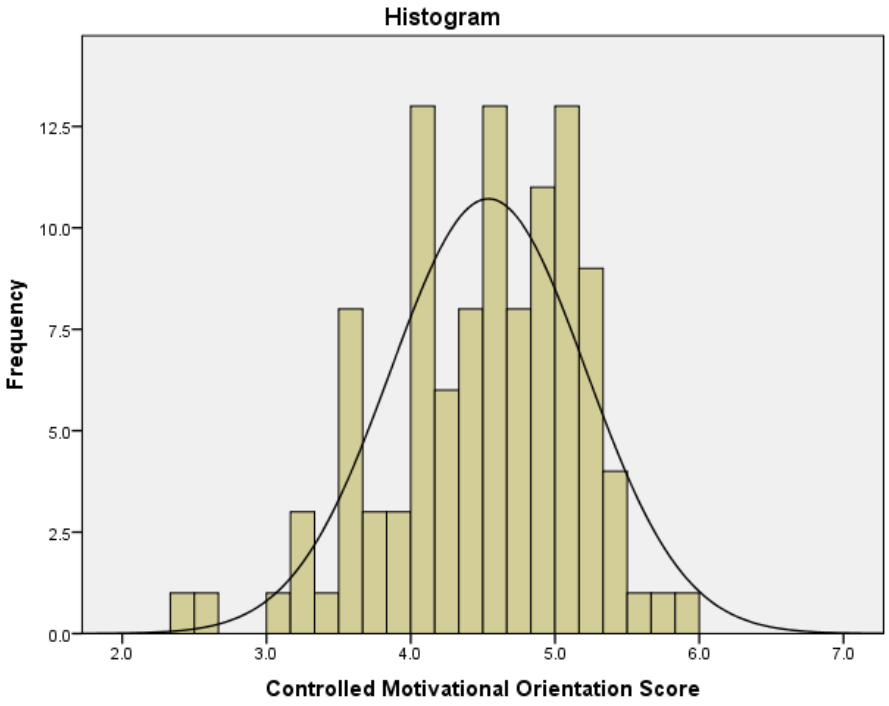
Table 17

Autonomous Motivational Orientation - Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Autonomous Orientation	109	4.83	6.83	6.05	.46
Valid N (listwise)	109				

Controlled Motivational Orientation.

The controlled orientation deals primarily with people who are oriented towards extrinsic motivators such as: a) rewards, b) deadlines, c) structures, d) ego-involvements, and e) the directives of others (Deci & Ryan, 1985). Similar to the autonomous motivational orientation, there were 12 questions (1 for each vignette) that were designed to assess the extent to which a person is motivated by extrinsic factors, or a controlled motivational orientation. As was the case

with the autonomous questions, a 7-point Likert scale was utilized ranging from very unlikely (1) to very likely (7). The histogram below gives a summary for the average controlled motivational orientation score for all n=109 respondents. This was done by taking the score for each of the controlled questions in the 12 vignettes, adding them together and dividing by 12.



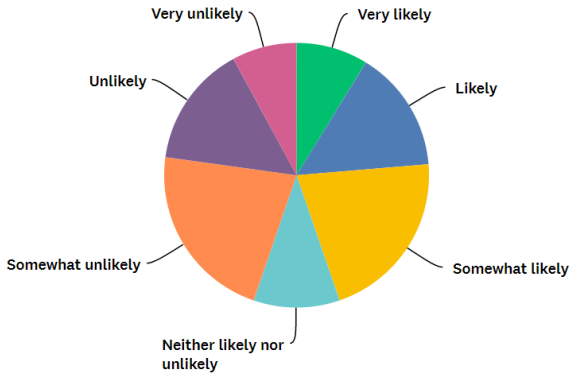
Controlled Motivational Orientation - Select Vignettes.

As was done with the autonomous orientation, three of the controlled questions will be reviewed in more detail. The three questions that will be reviewed in the controlled motivational orientation results are from the same vignettes that were used in the autonomous section, vignettes 4, 8, and 12.

In vignette #4, the following situation is presented, “You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. You would likely handle this by.” After this scenario is presented, there are three different

response options with one response representing either autonomous, controlled, or impersonal motivational orientations. Each response was rated individually on a 1 to 7 Likert scale by the pharmaceutical salespeople. The controlled response was, “simply assigning times that each can break to avoid any problems.” The spread of the responses from very unlikely to very likely was the following: a) very unlikely (n= 9), b) unlikely (n= 17), c) somewhat unlikely (n= 25), d) neither likely nor unlikely (n= 12), e) somewhat likely (n= 24), f) likely (n= 17), and g) very likely (n=10). Table 19 below shows the: a) situation, b) the controlled behavior, and c) the responses of the pharmaceutical salespeople.

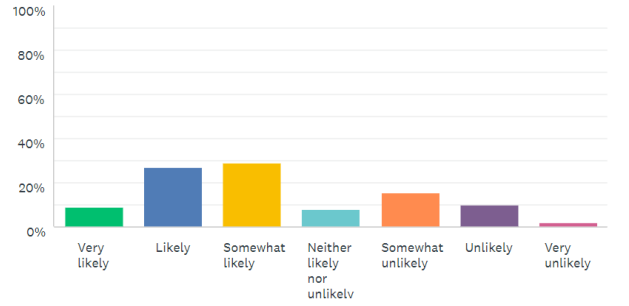
Table 19

Situation Vignette #4	You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. you would likely handle this by:
Controlled Behavior	Simply assigning times that each can break to avoid any problems.
Responses	

As a reminder, in vignette #8, the following situation is presented, “You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterized as:” Each response was rated individually on a 1 to 7 Likert scale by the pharmaceutical salespeople. The controlled response, was, “Take charge: that is, you would make most of the major decisions yourself.” The spread of the responses from very unlikely to

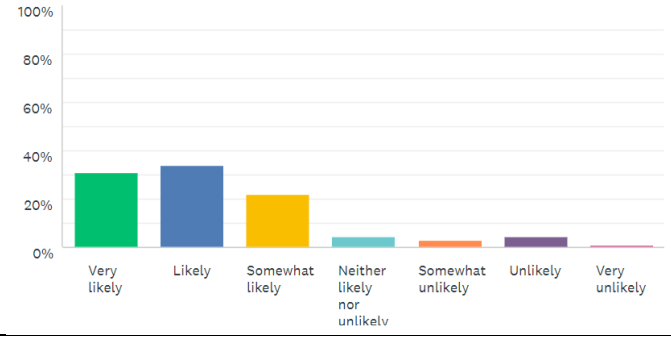
very likely was the following: a) very unlikely (n= 2), b) unlikely (n= 11), c) somewhat unlikely (n= 17), d) neither likely nor unlikely (n= 9), e) somewhat likely (n= 32), f) likely (n= 30), and g) very likely (n=10). Table 20 below shows the: a) situation, b) the controlled motivational orientation behavior, and c) the responses of the pharmaceutical salespeople.

Table 20

Situation Vignette #8	You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterized as:
Controlled Behavior	Take charge: that is, you would make most of the major decisions yourself.
Responses	

In vignette #12, the following situation is presented, “Your company has promoted you to a position in a city far from your present location. As you think about the move you would probably:” Each response was rated individually on a 1 to 7 Likert scale by the pharmaceutical salespeople. The controlled response, was, “Feel excited about the higher status and salary that is involved.” The spread of the responses from very unlikely to very likely was the following: a) very unlikely (n= 1), b) unlikely (n= 5), c) somewhat unlikely (n= 3), d) neither likely nor unlikely (n= 5), e) somewhat likely (n= 24), f) likely (n= 37), and g) very likely (n=34). Table 21 on the next page shows the: a) situation, b) the controlled behavior, and c) the responses of the pharmaceutical salespeople.

Table 21

Situation Vignette #12	Your company has promoted you to a position in a city far from your present location. As you think about the move you would probably:
Controlled Behavior	Feel excited about the higher status and salary that is involved.
Responses	

Controlled Motivational Orientation Descriptive Statistics.

This section analyzes the average of the controlled responses of the 109 pharmaceutical salespeople as a group. To do this there were 12 controlled responses (1 for each vignette) for each of the 109 pharmaceutical salespeople. These 12 responses were added together and divided by 12 to give an average controlled motivational orientation response for each pharmaceutical salesperson. Each of the averages for the 109 pharmaceutical salespeople were then used to calculate the descriptive statistics of: a) min, b) max, c) mean, and d) standard deviation.

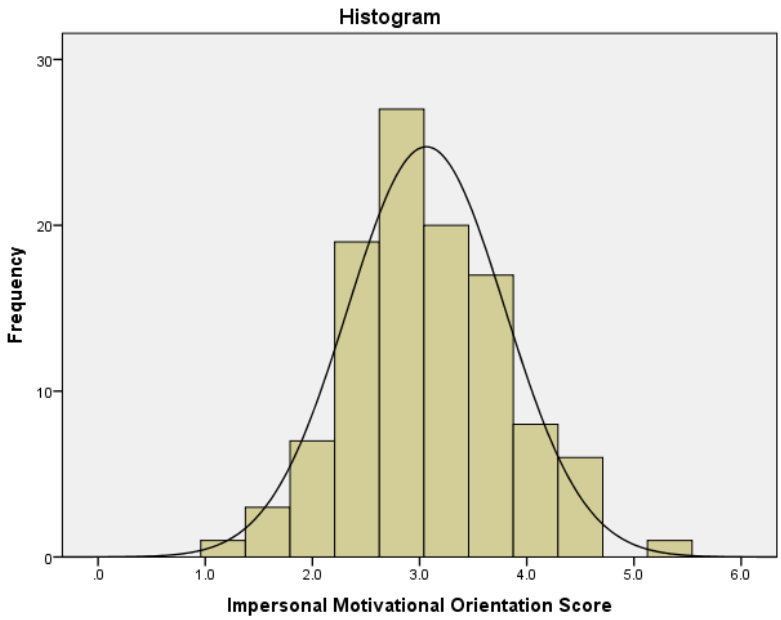
The minimum controlled average among the 109 pharmaceutical salespeople was 2.42. The maximum, or highest controlled motivational orientation average of the 12 responses from one pharmaceutical salesperson was 6.00. The mean of the 109 pharmaceutical salespeople for the controlled (extrinsic) motivational orientation was approximately 4.54. The standard deviation for the 109 pharmaceutical salespeople for controlled orientation was approximately .676. These items are presented in table 22 on the next page.

Table 22

Controlled Motivational Orientation - Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Controlled Orientation	109	2.42	6.00	4.54	.68
Valid N (listwise)	109				

Impersonal Motivational Orientation (Amotivation).

Individuals scoring high in the impersonal orientation feel that a desired state is unattainable and that people who reach a desired state did so by luck. People who score high in the impersonal orientation may feel anxious and ineffective and unable to affect an outcome (Deci & Ryan,1985). They are also amotivated or lacking in motivation. The same 7-point Likert scale was utilized ranging from very unlikely (1) to very likely (7). The histogram below gives a summary for the average impersonal motivational orientation score for all n=109 respondents. This was done by taking the score for each of the impersonal questions in the 12 vignettes, adding them together and dividing by 12.

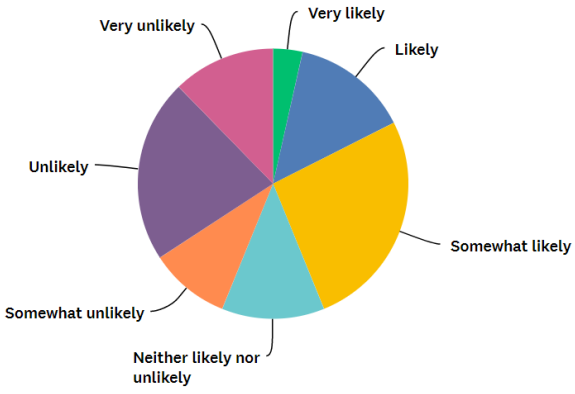


Impersonal Motivational Orientation - Select Vignettes.

As was done with both the autonomous and controlled motivational orientations, vignettes, 4, 8, and 12 will be reviewed from the impersonal perspective. In vignette #4, the following situation is presented, "You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. You would likely handle this by." After this scenario is presented, one of the three response options presented is an impersonal orientation response. The impersonal response, was, "Find out from someone in authority what to do or do what was done in the past."

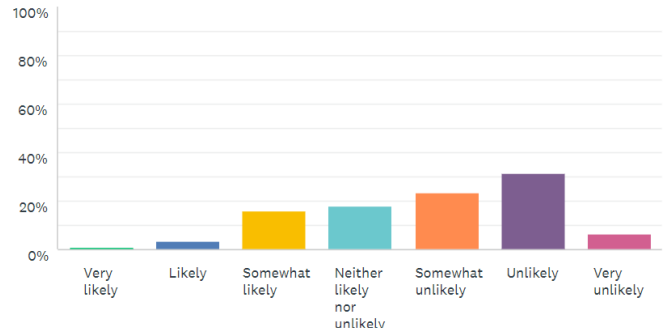
The spread of the responses from very unlikely to very likely was the following: a) very unlikely (n= 14), b) unlikely (n= 25), c) somewhat unlikely (n= 11), d) neither likely nor unlikely (n= 14), e) somewhat likely (n= 30), f) likely (n= 16), and g) very likely (n= 4). Table 24 below shows the: a) situation, b) the impersonal behavior, and c) the responses of the pharmaceutical salespeople.

Table 24

Situation Vignette #4	You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. you would likely handle this by:
Impersonal Behavior	Find out from someone in authority what to do or do what was done in the past.
Responses	

Recall that in vignette #8, the following situation is presented, “You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterized as:” Each response was rated individually on a 1 to 7 Likert scale by the pharmaceutical salespeople. The impersonal response was, “Follow precedent: you’re not really up to the task so you’d do it the way it’s been done before.” The spread of the responses from very unlikely to very likely was the following: a) very unlikely (n= 7), b) unlikely (n=35), c) somewhat unlikely (n= 26), d) neither likely nor unlikely (n= 20), e) somewhat likely (n= 18), f) likely (n= 4), and g) very likely (n=1). Table 25 below shows the: a) situation, b) the impersonal motivational orientation behavior, and c) the responses of the pharmaceutical salespeople.

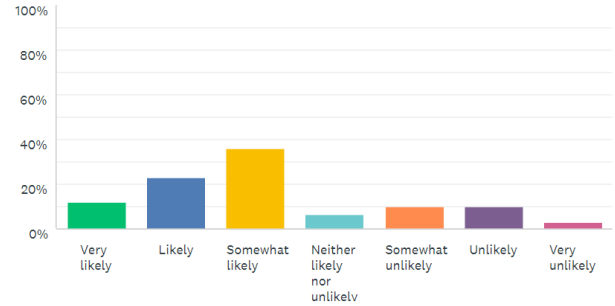
Table 25

Situation Vignette #8	You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterized as:
Impersonal Behavior	Follow precedent: you're not really up to the task so you'd do it the way it's been done before.
Responses	

Vignette #12 once again presents the following situation, “Your company has promoted you to a position in a city far from your present location. As you think about the move you would probably:” Each response was rated individually on a 1 to 7 Likert scale by the pharmaceutical salespeople. The impersonal response, was, “Feel stressed and anxious about the upcoming

changes." The spread of the responses from very unlikely to very likely was the following: a) very unlikely (n= 3), b) unlikely (n=11), c) somewhat unlikely (n= 11), d) neither likely nor unlikely (n= 7), e) somewhat likely (n= 39), f) likely (n= 25), and g) very likely (n=13). Table 26 below shows the: a) situation, b) the impersonal behavior, and c) the responses of the pharmaceutical salespeople.

Table 26

Situation Vignette #12	Your company has promoted you to a position in a city far from your present location. As you think about the move you would probably:
Impersonal Behavior	Feel stressed and anxious about the upcoming changes.
Responses	

Impersonal Motivational Orientation Descriptive Statistics.

The descriptive statistics for the impersonal orientation responses of the 109 pharmaceutical salespeople as a group are included in this section. To do this there were 12 impersonal responses (1 for each vignette) for each of the 109 pharmaceutical salespeople. These 12 responses were added together and divided by 12 to give an average controlled motivational orientation response for each pharmaceutical salesperson. Each of the averages for the 109 pharmaceutical salespeople were then used to calculate the descriptive statistics of: a) min, b) max, c) mean, and d) standard deviation.

The minimum impersonal orientation average among the 109 pharmaceutical salespeople was 1.17. The maximum, or highest controlled motivational orientation average of the 12

responses from one pharmaceutical salesperson was 5.25. The mean of the 109 pharmaceutical salespeople for the impersonal motivational orientation (amotivation) was approximately 3.06. The standard deviation for the 109 pharmaceutical salespeople for the impersonal orientation was approximately .732. These items are presented in table 27 below.

Table 27

Impersonal Motivational Orientation - Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Impersonal Orientation	109	1.17	5.25	3.06	.73
Valid N (listwise)	109				

Inferential Statistics - Research Question Findings

The main question that this research attempts to answer is the following, "Do U.S.-Based Pharmaceutical Salespeople who are motivated intrinsically achieve annual sales awards more frequently and rank higher (president's club, top 50% ranking, etc.) than those who are motivated extrinsically?" As has been explained previously, the General Causality Orientations Scale (GCOS) measures the extent to which an individual is oriented towards: a) autonomous (intrinsic), b) controlled (extrinsic), and c) impersonal motivation.

The definition of pharmaceutical salesman performance will be defined as: a) number of president's club awards (or the equivalent thereof), and b) the number of times at year end they finished in the top 50% of their pharmaceutical company for annual sales performance. The results of the GCOS combined with the answers of the pharmaceutical salespeople on how they performed will help give insight into if motivational orientation influences pharmaceutical salesperson performance.

Autonomous Motivational Orientation and Pharmaceutical President's Club Awards.

The first relationship that will be investigated from the data is the relationship between the autonomous motivational orientation of the pharmaceutical salespeople and the number of times that these people won a president's club sales award within pharmaceuticals. This will be investigated utilizing both correlation and linear regression.

Utilizing a sample of 109 pharmaceutical salespeople (n=109), a correlation was conducted between the following two variables: a) autonomous motivational orientation, and b) number of president's club sales awards in pharmaceutical sales. After performing the calculation, the following was found. There was no correlation (r = -.080) between the number of president's club awards won and autonomous motivational orientation. Statistical Significance was not achieved (p = .4), so it failed to reject the null hypothesis. Table 28 below shows the correlation output from SPSS.

Table 28

Correlation Between Autonomous Orientation and Number of President's Club Awards			
		Autonomous Orientation	**Number of President's Club Awards**
Autonomous Orientation	**Pearson Correlation**	1	-.080
	Sig. (2- tailed)		.409
	N	109	109
Number of President's Club Awards	**Pearson Correlation**	-.080	1
	Sig. (2- tailed)	.409	
	N	109	109

Linear regression was also performed with the dependent or outcome variable being the number of president's club awards in pharmaceutical sales and autonomous motivational orientation being the independent or predictor variable. These findings show that the differences

in the level of autonomous motivational orientation account for .06% of the variance in the number of president's club awards in pharmaceutical sales.

Each additional point increase in the level of autonomous motivational orientation is associated with an approximate .19 decrease in number of president's club awards achieved in pharmaceutical sales. In summation, utilizing a sample of 109 pharmaceutical salespeople (n=109) it was found that autonomous motivational orientation was not a significant predictor (p = .41) of the number of president's club awards won by pharmaceutical salespeople. Table 29 below shows the results from the regression calculations.

Table 29

Linear Regression – Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.080	.006	-.003	1.071
Predictors: (Constant), Autonomous Orientation				

Linear Regression – Coefficients					
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
1 (Constant)	3.203	1.365		2.346	.021
Autonomous Orientation	-.187	.225	-.080	-.830	.409
Dependent Variable: Number of President's Club Sales Awards in Pharmaceutical Sales					

Autonomous Motivational Orientation and Top 50% Year End Sales Ranking.

The next relationship investigated from the data is the relationship between the autonomous motivational orientation of the number of top 50% annual pharmaceutical sales rankings. This will be investigated utilizing both correlation and linear regression.

Utilizing a sample of 109 pharmaceutical salespeople (n=109), a correlation was conducted between the following two variables: a) autonomous motivational orientation, and b) number of top 50% annual sales rankings in pharmaceutical sales. There was no correlation (r = .003) between the number of top 50% annual pharmaceutical sales rankings and autonomous motivational orientation. This relationship was not statistically significant (p = .97), so it failed to reject the null hypothesis. Table 30 below shows the correlation output from SPSS.

Table 30

Correlation Between Autonomous Orientation and Year-end Top 50% Sales Rankings

		Autonomous Orientation	**Number of Year-end Top 50% Rankings**
Autonomous Orientation	**Pearson Correlation**	1	.003
	Sig. (2- tailed)		.974
	N	109	109
Number of Year-end Top 50% Rankings	**Pearson Correlation**	.003	1
	Sig. (2- tailed)	.974	
	N	109	109

Linear regression was also performed with the dependent or outcome variable being the number of top 50% sales rankings in pharmaceutical sales and autonomous motivational orientation being the independent or predictor variable. These findings show that the differences in the level of autonomous motivational orientation account for 0% of the variance in the number of top 50% sales rankings in pharmaceutical sales.

Each additional point increase in the level of autonomous motivational orientation is associated with an approximate .006 increase in number of top 50% sales rankings achieved in pharmaceutical sales. In summation, utilizing a sample of 109 pharmaceutical salespeople (n=109) it was found that autonomous motivational orientation was not a significant predictor (p

= .97) of the number of top 50% sales rankings by pharmaceutical salespeople. Table 31 below show the results from the regression calculations.

Table 31

Linear Regression – Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.003	.000	-.009	.923
Predictors: (Constant), Autonomous Orientation				

Linear Regression – Coefficients					
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
1 (Constant)	3.467	1.178		2.944	.004
Autonomous Orientation	.006	.194	.003	.032	.974
Dependent Variable: Number of Year-end Top 50% Sales Rankings in Pharmaceutical Sales					

Controlled Motivational Orientation and Pharmaceutical President's Club Awards.

The next motivational orientation that will be investigated is the controlled orientation. This will be investigated utilizing both correlation and linear regression. Utilizing a sample of 109 pharmaceutical salespeople (n=109), a correlation was conducted between the following two variables: a) controlled motivational orientation, and b) number of president's club sales awards in pharmaceutical sales. After performing the calculation, the following was found. There was no correlation (r = -.062) between the number of president's club awards won and controlled motivational orientation. Statistical Significance was not achieved (p = .525), so it failed to reject the null hypothesis. Table 32 on the next page shows the SPSS correlation output.

Table 32

Correlation Between Controlled Orientation and Number of President's Club Awards			
		Controlled Orientation	**Number of President's Club Awards**
Controlled Orientation	**Pearson Correlation**	1	-.062
	Sig. (2- tailed)		.525
	N	109	109
Number of President's Club Awards	**Pearson Correlation**	-.062	1
	Sig. (2- tailed)	.525	
	N	109	109

Calculations utilizing linear regression were performed with the dependent or outcome variable being the number of president's club awards in pharmaceutical sales and controlled motivational orientation being the independent or predictor variable. These findings show that the differences in the level of controlled motivational orientation account for .04 % of the variance in the number of president's club awards in pharmaceutical sales.

Each additional point increase in the level of controlled motivational orientation is associated with an approximate .097 decrease in number of president's club awards achieved in pharmaceutical sales. In summation, utilizing a sample of 109 pharmaceutical salespeople (n=109) it was found that controlled motivational orientation was not a significant predictor (p = .53) of the number of president's club awards by pharmaceutical salespeople. Table 33 below shows the results from the regression calculations.

Table 33

Linear Regression – Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.062	.004	-.006	1.072

Predictors: (Constant), Controlled Orientation					
Linear Regression – Coefficients					
Model	**Unstandardized Coefficients**		**Standardized Coefficients**		
	B	**Std. Error**	**Beta**	**T**	**Sig.**
1 (Constant)	2.515	.700		3.594	.004
Autonomous Orientation	-.097	.153	-.062	-.638	.525
Dependent Variable: Number of President's Club Sales Awards in Pharmaceutical Sales					

Controlled Motivational Orientation and Top 50% Year End Sales Ranking.

The other sales performance metric that will be analyzed in combination with controlled motivational orientation is how many times the pharmaceutical salespeople were ranked in the top 50% of their company salesforce at year end. Utilizing a sample of 109 pharmaceutical salespeople (n=109), a correlation was conducted between the following two variables: a) controlled motivational orientation, and b) number of year-end top 50% sales rankings in pharmaceutical sales. There was no correlation (r = -.103) between the number of top 50% sales rankings and controlled motivational orientation. This relationship was not statistically significant (p = .285). Table 34 below shows the correlation output from SPSS.

Table 34

Correlation Between Controlled Orientation and Year-end Top 50% Sales Rankings			
		Controlled Orientation	**Number of Year-end Top 50% Rankings**
Controlled Orientation	**Pearson Correlation**	1	-.103
	Sig. (2- tailed)		.285
	N	109	109
	Pearson Correlation	-.103	1
	Sig. (2- tailed)	.285	

Number of Year-end Top 50% Rankings	**N**	109	109

Calculations utilizing linear regression were performed with the dependent or outcome variable being the number of year-end sales rankings in the top 50% in pharmaceutical sales and controlled motivational orientation being the independent or predictor variable. These findings show that the differences in the level of controlled motivational orientation account for .11 % of the variance in the number of year-end top 50% rankings in pharmaceutical sales.

Each additional point increase in the level of controlled motivational orientation is associated with an approximate .140 decrease in number of year end top 50% sales rankings in pharmaceutical sales. In summation, utilizing a sample of 109 pharmaceutical salespeople (n=109) it was found that controlled motivational orientation was not a significant predictor (p = .285) of the number of president's club awards by pharmaceutical salespeople. Table 35 below shows the results from the regression calculations.

Table 35

Linear Regression – Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.103	.011	.001	.919
Predictors: (Constant), Controlled Orientation				

Linear Regression – Coefficients					
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
1 (Constant)	4.142	.600		6.907	.000
Controlled Orientation	-.140	.131	-.103	-1.075	.285

Dependent Variable: Number of Year-end Top 50% Sales Rankings in Pharmaceutical Sales

Impersonal Motivational Orientation and Pharmaceutical President's Club Awards.

Utilizing a sample of 109 pharmaceutical salespeople (n=109), a correlation was conducted between the following two variables: a) impersonal motivational orientation, and b) number of president's club sales awards in pharmaceutical sales. There was no correlation (r = -.183) between the number of president's club awards won and impersonal motivational orientation. Statistical Significance was not achieved (p = .056), so it failed to reject the null hypothesis. Table 36 below shows the correlation output from SPSS.

Table 36

Correlation Between Impersonal Orientation and Number of President's Club Awards			
		Impersonal Orientation	**Number of President's club Awards**
Impersonal Orientation	**Pearson Correlation**	1	-.183
	Sig. (2- tailed)		.056
	N	109	109
Number of President's Club Awards	**Pearson Correlation**	-.183	1
	Sig. (2- tailed)	.056	
	N	109	109

Linear regression was performed with the dependent or outcome variable being the number of president's club sales awards in pharmaceutical sales and impersonal motivational orientation being the independent or predictor variable. These findings show that the differences in the level of impersonal motivational orientation account for .34 % of the variance in the number of president's club awards in pharmaceutical sales.

Each additional point increase in the level of impersonal motivational orientation is associated with an approximate .268 decrease in number president's club sales awards in pharmaceutical sales. In summation, utilizing a sample of 109 pharmaceutical salespeople (n=109) it was found that impersonal motivational orientation was not a significant predictor (p = .056) of the number of president's club awards won by pharmaceutical salespeople. Table 37 below show the results from the regression calculations.

Table 37

Linear Regression – Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.183	.034	.025	1.056
Predictors: (Constant), Impersonal Orientation				

Linear Regression – Coefficients					
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
1 (Constant)	2.893	.437		6.624	.000
Impersonal Orientation	-.268	.139	-.183	-1.929	.056
Dependent Variable: Number of President's Club Sales Awards in Pharmaceutical Sales					

Impersonal Motivational Orientation and Year-end Top 50% Sales Rankings.

Utilizing a sample of 109 pharmaceutical salespeople (n=109), a correlation was conducted between the following two variables: a) impersonal motivational orientation, and b) year-end top 50% rankings in pharmaceutical sales. There was no correlation (r = -.118) between the number of president's club awards won and impersonal motivational orientation. Statistical Significance was not achieved (p = .22), so it failed to reject the null hypothesis. Table 38 below shows the correlation output from SPSS.

Table 38

Correlation Between Impersonal Orientation and Year-end Top 50% Sales Rankings			
		Controlled Orientation	**Number of Year-end Top 50% Rankings**
Impersonal Orientation	**Pearson Correlation**	1	-.118
	Sig. (2- tailed)		.220
	N	109	109
Number of Year-end Top 50% Rankings	**Pearson Correlation**	-.118	1
	Sig. (2- tailed)	.220	
	N	109	109

Once again, linear regression was performed with the dependent or outcome variable being the number of year-end top 50% sales rankings in pharmaceutical sales and impersonal motivational orientation being the independent or predictor variable. These findings show that the differences in the level of impersonal motivational orientation account for .14 % of the variance in the number of year-end top 50% sales rankings in pharmaceutical sales.

Each additional point increase in the level of impersonal motivational orientation is associated with an approximate .149 decrease in number of year-end top 50% sales rankings in pharmaceutical sales. In summation, utilizing a sample of 109 pharmaceutical salespeople (n=109) it was found that impersonal motivational orientation was not a significant predictor (p = .22) of the number of year-end top 50% sales rankings by pharmaceutical salespeople. Table 39 below shows the results from the regression calculations.

Table 39

Linear Regression – Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.118	.014	.005	.917

Predictors: (Constant), Impersonal Orientation					
Linear Regression – Coefficients					
Model	**Unstandardized Coefficients**		**Standardized Coefficients**		
	B	**Std. Error**	**Beta**	**T**	**Sig.**
1 (Constant)	3.960	.379		10.440	.000
Impersonal Orientation	-.149	.120	-.118	-1.234	.220
Dependent Variable: Number of Year-end Top 50% Sales Rankings in Pharmaceutical Sales					

Secondary Findings - ANOVA – Autonomous, Controlled, and Impersonal Orientations.

In addition to correlation and linear regression being performed, a one-way ANOVA was also performed to look for any findings that might be statistically significant. The one-way ANOVA compared the means of autonomous, controlled, and impersonal orientations in relation to a year-end top 50% sales ranking in the pharmaceutical industry to see if the means of the three motivational orientations differed significantly.

Using a sample of 109 pharmaceutical salespeople, a one-way ANOVA was conducted to compare the effects on year-end top 50% sales rankings in pharmaceutical sales of three different motivational orientations: autonomous motivational orientation (n = 109), impersonal motivational orientation (n = 109), and controlled motivational orientation (n = 109). Of the three motivational orientations, only controlled orientation showed a statistically significant difference between groups for number of year-end top 50% pharmaceutical sales rankings.

Looking specifically at controlled motivational orientation, there was a significant difference between the number of year-end top 50% sales rankings F [3,105=4.23, p=.007]. Posthoc comparison using the Tukey test indicated that there was a significant difference in controlled orientation between those pharmaceutical reps who had achieved 3-4 top 50% finishes (M = 4.20, SD=.62) and 5-6 top 50% finishes (M=5.16, SD = .53). There was also a significant

difference in controlled orientation between those pharmaceutical reps who had 5-6 top 50% finishes (M=5.16, SD = .53) and >8 top 50% finishes (M=4.48, SD=.69). Driscoll (1996) states that the benefit of using the Tukey is that if the null hypothesis is rejected, the Tukey procedure can determine which pairs of means have statistically significant differences. Verleysen (2013) adds to Driscoll by saying that the Tukey critical value mean difference must be exceeded to achieve significance and the Tukey test has more power than most ANOVA tests under most circumstances. Table 40 below shows the one-way ANOVA with the three motivational orientations and top 50% finishes.

Table 40

One-Way ANOVA						
Autonomous, Controlled, and Impersonal Orientation Comparison of Means via Top 50% Year End Sales Ranking (Sales Performance)						
		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Autonomous Orientation	Between Groups	.364	3	.121	.571	.635
	Within Groups	22.264	105	.212		
	Total	22.628	108			
Impersonal Orientation	Between Groups	1.840	3	.613	1.149	.333
	Within Groups	56.079	105	.534		
	Total	57.919	108			
Controlled Orientation	Between Groups	5.329	3	1.776	4.233	.007
	Within Groups	44.054	105	.420		
	Total	49.382	108			

Secondary Findings – Chi-Square of President's Club Awards and Top 50% Finishes

Another secondary finding was found utilizing chi-square calculations. A chi-square test of independence was performed to examine the difference between the number of president's club awards and year-end top 50% sales rankings achieved among pharmaceutical salespeople.

The difference between these variables was statistically significant, X2 (9, N=109) = 45.16, p=.001. President's club awards were less likely to be achieved by pharmaceutical salespeople than a year-end ranking in the top 50% of their company's salesforce. The magnitude of the difference was large with a phi value of .644. Tables 41, 42 and 43 below show the results from the chi-square cross tabulation of these different type of sales results.

Table 41

Year End Top 50% Ranking and Presidents' Club Awards – Crosstabulation					
	Year End top 50 % Sales Ranking				
	3-4 Times	5-6 Times	7-8 Times	8+ Times	Total
Count	7	10	9	16	42
President's Club 1-2 Times	16.7%	23.8%	21.4%	38.1%	100%
Count	0	1	2	30	33
President's Club 3-4 Times	0.0%	3.0%	6.1%	90.9%	100%
Count	0	0	0	18	18
President's Club 5-6 Times	0.0%	0.0%	0.0%	100%	200%
Count	0	0	0	16	16
President's Club 7+ Times	0.0%	0.0%	0.0%	100%	100%
Total Count	7	11	11	80	109
President's Club	6.4%	10.1%	10.1%	73.4%	100%

Table 42

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	45.160	9	.000
Likelihood Ratio	52.517	9	.000
Linear by Linear Association	27.928	1	.000
N of Valid Cases	109		

Table 43

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.644	.000
	Cramer's V	.372	.000
N of Valid Cases		109	

Chapter 5 – Summary, Conclusions, and Recommendations

Summary of Background and Constructs

Motivation is the basis for human action or inaction. Without some level of motivation, nothing would ever get accomplished in humanity (Kanfer, 1994). The relationship between motivation and work is something that has been widely researched (Kanfer, 1990; Locke, E. A., & Latham, G. P. (2004); Ryan, R. M., & Deci, E. L. (2002); Weiner, B. (1990); Vroom, V. H. (1964); Skinner, B. F. (1953); Maslow, A. H. (1943)). When employees in an organization are motivated and happy, they are also more productive (Grant, 2008).

The purpose of this study was to find out if motivational orientation (intrinsic vs. extrinsic) influences the sales performance of pharmaceutical salespeople in the U.S.A. The main research question is the following, "Do U.S.-Based Pharmaceutical Salespeople who are motivated intrinsically achieve annual sales awards and rank higher more frequently in their company (President's Club, Top 50% Ranking, etc.) than those who are motivated extrinsically?"

A high level of motivation is necessary for salespeople to perform and attain organizational goals and quotas. In terms of salespeople and motivation, many researchers have found a positive relationship between salespeople who are motivated and high sales performance (Friend, Johnson, Luthans, & Sohi, 2016). Some argue that salespeople perform better when given autonomy (Deci & Ryan, 2000; Miao, Evans, & Shamoing, 2007). Others argue that salespeople perform better when there is some extrinsic stimulus (Kuvaas, Buch, Gagné, Dysvik, & Forest, 2016; Ingram, Lee & Skinner, 1989; Hart, 1984).

Self-determination theory will be the foundational theory guiding this research. Self-determination theory is exceptionally positioned to explore the nuances of extrinsic and intrinsic

motivational orientation among pharmaceutical salespeople in the U.S.A. Self-determination theory encourages autonomy and individual discovery of things for oneself, as opposed to being coerced or forced into action.

Ryan and Deci (2002), the thought leaders on SDT, determined that the foundational ideology of SDT "begins by embracing the assumption that all individuals have natural, innate, and constructive tendencies to develop an ever more elaborated and unified sense of self" (p. 5). Deci and Ryan believe that humans have the ability to make sense of their relationship with their surroundings and their environment through their own integrative process (p. 5).

If people are motivated in the proper way (excluding the variable of social environment) they will be more integrated with oneself as opposed to being fragmented (Deci and Ryan, 2002). Healthy motivation, according to Deci, Olafsen, and Ryan (2017), consists of intrinsic motivation or extrinsic motivation which has been internalized in a healthy manner. Deci et al. (2017) speak of intrinsic motivation as something that's done for interest and enjoyment.

The six sub-theories of self-determination theory are: a) cognitive evaluation theory, b) organismic integration theory, c) causality orientations theory, d) basic needs theory, e) goal contents theory, and f) relationships motivation theory (Ryan & Deci, 2002). Each of these sub-theories contributes to the overall understanding of Self-Determination theory.

Summary of Study Design

To answer the question of whether motivational orientation influences sales performance among pharmaceutical salespeople, the General Causality Orientations Scale (GCOS) was sent out to pharmaceutical salespeople across the United States. The General Causality Orientations Scale (GCOS) was chosen due to its ability to differentiate between different motivational orientations at an individual level (Deci & Ryan, 1985). The GCOS measures the strength of

three motivational orientations at the individual level which are: a) autonomous, b) controlled, and c) impersonal orientations.

The autonomous orientation of motivation measures the extent to which an individual is motivated intrinsically. The controlled orientation of motivation deals primarily with people who are oriented towards extrinsic motivators such as: a) rewards, b) deadlines, c) structures, d) ego-involvements, and e) the directives of others (1985). The third and last orientation that the GCOS measures is the impersonal motivational orientation. Individuals scoring high in the impersonal motivational orientation feel that a desired state is unattainable (1985).

Deci and Ryan (1985), the founders of SDT and the creators of the GCOS, state that the, "scale was shown to have internal consistency and temporal stability" (p. 109). Deci and Ryan (1985) also found that the Cronbach α for the GCOS are 0.75 and a test-retest coefficient of 0.74 over two months. Cortina (2013) notes that multiple scholars determine a scale and survey to be sufficiently reliable if the Cronbach α value is greater than .70.

The author utilized his LinkedIn Network of pharmaceutical salespeople with whom he has connected and networked over the years for a survey sample. The pharmaceutical companies from which the sample was retrieved include the following: a) Pfizer, b) Amgen, c) Eli Lilly, d) Sunovion, e) Takeda, f) Sanofi, g) Astra Zeneca, h) Bayer, i) Allergan, j) Actelion, k) Bristol Meyers Squibb, l) Boehringer Ingelheim, m) Daiichi Sankyo, n) Eisai, o) Merck, p) Novartis, q) GlaxoSmithKline, r) Lundbeck, s) Indivior, t) Genentech, u) Otsuka, and v) Sage.

The LinkedIn connections were exported into Microsoft Excel and then filtered for those employed within the pharmaceutical industry; 224 pharmaceutical salespeople were found within his LinkedIn network. These 224 connections were narrowed down even further to a smaller group of likely respondents.

Of the initial 224 sifted from LinkedIn, there were 172 U.S. pharmaceutical salespeople whom received the GCOS survey via email or text. Of these 172 pharmaceutical salespeople, 109 responded thus giving a response rate of 63%. These U.S.-Based Pharmaceutical salespeople surveyed live in different geographic locations around the United States, covering every corner of the United States from New York to California, Florida to Washington State.

The survey was created electronically using Survey Monkey and a link to the survey was included in the e-mail. Some pharmaceutical salespeople were also contacted via text with a link to the survey. The first e-mail invitation from Survey Monkey was followed by a reminder email three to four days later. The answers from the completed surveys were recorded and kept on a data cloud of Survey Monkey. After the survey deadline passed, the data from Survey Monkey was exported into SPSS to run various descriptive and inferential statistics.

Summary of Findings

Conclusions and Implications Drawn from the Findings

Initial thought might lead many to believe that a non-statistically significant finding is of no importance. Lederman & Lederman (2016) give their reason as to why a non-significant finding is of importance. They share, “Given that answers are not known in advance leads to the conclusion that either statistically significant or not statistically significant results provides important knowledge to the literature” (p. 349). There are implications and recommendations for practice and application even with a lack of statistical significance utilizing the GCOS-12.

Value can be derived from research even in the absence of significant findings. Intuition would lead one to believe that autonomously oriented pharmaceutical salespeople perform better in sales outcomes than those who are control oriented, but this was not the case in this research. According to the findings of this research, motivational orientation doesn’t matter as much as

just plain being motivated. Autonomous and controlled orientations did not produce statistical significance in terms of predicting performance. There was a mere statistical significance of impersonal motivational orientation to the number of president's club awards won by pharmaceutical sales representatives. This was a negative relation (r = -.183), indicating that impersonal orientation negatively impacts the number of president's club awards won (p= .056).

These findings could potentially provide a new way for pharmaceutical companies to alter their hiring process and screen out low performing salespeople in their interview process. It is common practice for pharmaceutical companies to have applicants take personality or other assessments to during the interview process. One potential option for pharmaceutical companies is to add a version of the GCOS-12 survey during the hiring process and eliminate those pharmaceutical sales applicants who score high on the impersonal orientation part of this survey.

Descriptives for autonomous, controlled, and impersonal motivational orientations.

The mean of the 109 pharmaceutical salespeople for the autonomous (intrinsic) motivational orientation was approximately 6.05. The autonomous orientation standard deviation for the 109 pharmaceutical salespeople was approximately .458. The mean of the 109 pharmaceutical salespeople for the controlled (extrinsic) motivational orientation was approximately 4.54. The controlled orientation standard deviation for the 109 pharmaceutical salespeople for controlled orientation was approximately .676. The mean of the 109 pharmaceutical salespeople for the impersonal motivational orientation (amotivation) was approximately 3.06. The impersonal orientation standard deviation for the 109 pharmaceutical salespeople was approximately .732.

Primary research question findings.

Intrinsic (autonomous) motivation and sales performance.

The main research question that this research attempts to answer is, "Do U.S.-Based Pharmaceutical Salespeople who are motivated intrinsically achieve annual sales awards and rank higher more frequently in their company (President's Club, Top 50% Ranking, etc.) than those who are motivated extrinsically?"

Utilizing a sample pharmaceutical salespeople (n =109), a correlation was conducted between the following two variables: a) autonomous motivational orientation, and b) number of president's club sales awards in pharmaceutical sales. There was no correlation (r = -.080) between the number of president's club awards won and autonomous motivational orientation. Statistical Significance was not achieved (p = .4). It failed to reject the null hypothesis.

Another correlation (n= 109) was conducted between the following two variables: a) autonomous motivational orientation, and b) number of top 50% annual sales rankings in pharmaceutical sales. There was no correlation (r = .003) between the number of top 50% annual pharmaceutical sales rankings and autonomous motivational orientation. This relationship was not statistically significant (p = .97). It also failed to reject the null hypothesis.

Linear regression was performed with the dependent or outcome variable being the number of president's club awards in pharmaceutical sales and autonomous motivational orientation being the independent or predictor variable. The differences in the level of autonomous motivational orientation account for .06% of the variance in the number of president club awards in pharmaceutical sales.

Each additional point increase in the level of autonomous motivational orientation is associated with an approximate .19 decrease in number of president's club awards achieved in

pharmaceutical sales. Autonomous motivational orientation was not a significant predictor (p = .41) of the number of president's club awards won by pharmaceutical salespeople (n= 109).

Linear regression was also performed with the dependent or outcome variable being the number of top 50% sales rankings in pharmaceutical sales and autonomous motivational orientation being the independent or predictor variable. The differences in the level of autonomous motivational orientation account for 0% of the variance in the number of top 50% sales rankings in pharmaceutical sales.

Each additional point increase in the level of autonomous motivational orientation is associated with an approximate .006 increase in number of top 50% sales rankings achieved in pharmaceutical sales. In summary, it was found that autonomous motivational orientation was not a significant predictor (p = .97) of the number of top 50% sales rankings by pharmaceutical salespeople (n = 109).

Extrinsic (controlled) motivation and sales performance.

Utilizing a sample of 109 pharmaceutical salespeople (n=109), a correlation was conducted between the following two variables: a) controlled motivational orientation, and b) number of president's club sales awards in pharmaceutical sales. There was no correlation (r = -.062) between the number of president's club awards won and controlled motivational orientation. Statistical Significance was not achieved (p = .525); it failed to reject the null hypothesis.

Another (n=109) correlation was conducted between: a) controlled motivational orientation, and b) number of year-end top 50% sales rankings in pharmaceutical sales. There was no correlation (r = -.103) between the number of top 50% sales rankings and controlled motivational orientation. This relationship was not statistically significant (p = .285).

Linear regression was performed with the dependent or outcome variable being the number of president's club awards in pharmaceutical sales and controlled motivational orientation being the independent or predictor variable. The differences in the level of controlled motivational orientation account for .04% of the variance in the number of president's club awards won in pharmaceutical sales.

Each additional point increase in the level of controlled motivational orientation is associated with an approximate .097 decrease in number of president's club awards achieved in pharmaceutical sales. Controlled motivational orientation was not a significant predictor ($p = .53$) of the number of president's club awards won by pharmaceutical salespeople ($n = 109$). The differences in the level of controlled motivational orientation account for .11 % of the variance in the number of year-end top 50% rankings in pharmaceutical sales. Each additional point increase in the level of controlled motivational orientation is associated with an approximate .140 decrease in number of year end top 50% sales rankings in pharmaceutical sales. Controlled motivational orientation was not a significant predictor ($p = .285$) of the number of president's club awards by pharmaceutical salespeople ($n = 109$).

Impersonal (amotivation) motivation and sales performance.

There was no correlation ($r = -.183$) between the number of president's club awards won and impersonal motivational orientation. Although close, there was no statistical significance ($p = .056$), so it failed to reject the null hypothesis. There was also no correlation ($r = -.118$) between the top 50% sales ranking and impersonal motivational orientation. Statistical Significance was not achieved ($p = .22$), so it failed to reject the null hypothesis.

Linear regression was performed with the dependent or outcome variable being the number of president's club sales awards in pharmaceutical sales and impersonal motivational

orientation being the independent or predictor variable. These findings show that the differences in the level of impersonal motivational orientation account for .34 % of the variance in the number of president's club awards in pharmaceutical sales. Each additional point increase in impersonal motivational orientation is associated with a .268 decrease in number president's club sales awards in pharmaceutical sales.

Linear regression was also performed with the dependent or outcome variable being the number of year-end top 50% sales rankings in pharmaceutical sales and impersonal motivational orientation being the independent or predictor variable. These findings show that the differences in the level of impersonal motivational orientation account for .14 % of the variance in the number of year-end top 50% sales rankings in pharmaceutical sales. Each additional point increase in impersonal motivational orientation is associated with a .149 decrease in number of year-end top 50% sales rankings in pharmaceutical sales.

Secondary research findings.

A one-way ANOVA was conducted to compare the effects on year-end top 50% sales rankings in pharmaceutical sales of three different motivational orientations: autonomous motivational orientation (n = 109), impersonal motivational orientation (n = 109), and controlled motivational orientation (n = 109). Of the three motivational orientations, only controlled orientation showed a statistically significant difference between groups for number of year-end top 50% pharmaceutical sales rankings.

Looking specifically at controlled motivational orientation, there was a significant difference between the number of year-end top 50% sales rankings F [3,105=4.23, p=.007]. Posthoc comparison using the Tukey test indicated that there was a significant difference in controlled orientation between those pharmaceutical reps who had achieved 3-4 top 50% finishes

(M = 4.20, SD=.62) and 5-6 top 50% finishes (M=5.16, SD = .53). There was also a significant difference in controlled orientation between those pharmaceutical reps who had 5-6 top 50% finishes (M=5.16, SD = .53) and >8 top 50% finishes (M=4.48, SD=.69).

A separate chi-square test of independence was performed to examine the difference between the number of president's club awards and year-end top 50% sales rankings achieved among pharmaceutical salespeople. The difference between these variables was statistically significant, X2 (9, N=109) = 45.16, p=.001. President's club awards were less likely to be achieved by pharmaceutical salespeople than a year-end ranking in the top 50% of their company's salesforce. The magnitude of the difference was large with a phi value of .644.

Interpretation of the Data

No claims can be made with either autonomous or controlled motivational orientation influencing pharmaceutical sales performance utilizing the General Causality Scale (GCOS -12). Neither autonomous nor controlled motivational orientation produced any statistical significance when used in various inferential calculations such as correlation or linear regression with sales performance metrics (number of president's club awards and year-end sales rankings in the top 50% of the company). To answer the guiding research question, motivational orientation (when using the GCOS-12) does not influence pharmaceutical sales performance when sales performance is defined as the number of president's club awards achieved or number of times a pharmaceutical salesperson was ranked in the top 50% of the company at year end.

Although there was no significance from a statistical standpoint, as mentioned earlier, that doesn't mean that there aren't any takeaways, or a lack of value added by this research. There are implications and recommendations for practice and application even with a lack of statistical significance utilizing the GCOS-12.

Intuition would lead one to believe that autonomously oriented pharmaceutical salespeople perform better in sales outcomes than those who are control-oriented, but this was not the case in this research. Autonomous and controlled orientations did not produce statistical significance in terms of predicting performance, but there was a mere statistical significance of impersonal motivational orientation to the number of president's club awards won by pharmaceutical sales representatives. This was a negative relation ($r = -.183$), indicating that impersonal orientation negatively impacts the number of president's club awards won ($p = .056$).

These findings could potentially alter pharmaceutical companies' hiring processes so as to screen out low performing salespeople in the interview process. It is common practice for pharmaceutical companies to have applicants take personality and/or other assessments during the interview process. Pharmaceutical companies could potentially add a version of the GCOS-12 survey during the hiring process and eliminate those applicants who score high on impersonal orientation on the survey.

When looking at the 109 pharmaceutical salespeople in aggregate, they rated themselves as being more autonomously motivated than intrinsically motivated. The mean of the 109 pharmaceutical salespeople for the autonomous (intrinsic) motivational orientation was approximately 6.05 on a Likert scale of 1 to 7, with the standard deviation being approximately .458. The mean of the 109 pharmaceutical salespeople for the controlled (extrinsic) motivational orientation was approximately 4.54 on the same Likert scale, with the standard deviation being approximately .676. As one would expect, the impersonal orientation or amotivation average among the 109 pharmaceutical salespeople was 3.06 with a standard deviation of .73.

Although this sample of pharmaceutical salespeople rated themselves as being more autonomously oriented than control oriented, this higher overall self-rating of autonomous motivational orientation did not produce any statistically significant results in terms of sales performance (president's club awards, top 50% sales rankings). The same was true for the controlled orientation and no statistically significant link to sales results. Impersonal orientation was the closest to producing statistical significance (p=.056) when correlated to number of president's club awards won by pharmaceutical salespeople.

Gender and years of sales experience did not produce a big difference in terms of levels of autonomous or controlled motivational orientation. Autonomous motivational orientation was 6.04 average for males vs. 6.08 autonomous average for females. Controlled motivational orientation average for males was 4.52 while it was 4.58 average for females. Autonomous average for salespeople with 5-10 years of sales experience was 6, while for salespeople with 10-15 years of sales experience it was 6.05, and for 15+ years of sales experience it was 6.06. Controlled autonomous average for salespeople with 5-10 years of sales experience was 4.7, for 10-15 years of sales experience it was 4.58, and for 15+ years of sales experience it was 4.5.

There was a statistically significant difference between the achievement of president's club awards and a ranking in the top 50% of a company at year end. A chi-square test of independence showed the difference between the number of president's club awards and year-end top 50% sales rankings achieved among pharmaceutical salespeople was statistically significant, $X2$ (9, N=109) = 45.16, p=.001. President's club awards were less likely to be achieved by pharmaceutical salespeople than a year-end ranking in the top 50% of their company's salesforce. This finding is not surprising since most president's club awards are for

those who rank in the top 10-20% of their company at year end. This award is considered much harder to achieve.

Other studies that have utilized the GCOS 12 didn't produce statistically significant results. Ewing, Stacks, Jiang, & Nocita (2011) utilized the GCOS to determine whether causality orientations predict academic achievement in missileers in the Air Force. Missileers at Minot Air Force Base, the 91st Missile Wing, were surveyed and data regarding a single month's aggregate academic scores and causality orientation were collected. Causality orientations did not predict monthly test scores among missileers in the Air Force. Those respondents who reported that they had received their assignment of choice had higher monthly test scores when they also had high levels of autonomy relative to controlled orientation. In the group that reported they had not received their assignment of choice, there were no associations between choice, causality orientation, and monthly test scores.

Wilkie, Gurenlian, & Freudenthal (2015) conducted research on dental hygienists utilizing the GCOS. They found no statistically significant differences of GCOS scores for autonomy and impersonal subscales when comparing dental hygienists in Utah and Idaho. The controlled motivational orientation yielded a significant difference ($p=0.001$) though.

A study by Cranmer, Vogele-Welch, & Deborah (2007) had similar findings to this study with the GCOS. The secondary research question of their study utilized the GCOS to verify the degree to which causality orientations was predictive of employee's perceptions of work climate. Their research showed that impersonal orientation was the only orientation with statistical significance in terms of being predictive of employee's perception of work climate. This was similar to impersonal orientation in this study and the correlation (.056) to the number of president's club awards won by pharmaceutical sales people.

Another study that showed variability with the GCOS was Ciraky and Moreland (2013). In their study, they utilized the GCOS to assess the extent to which outpatient psychotherapist motivational orientation predicted client attendance in treatment; 93 outpatient psychotherapists self-selected to participate in the study. The outcomes of their study with the three different orientations (autonomous, controlled, and impersonal) were similar to the outcome of this study.

Ciraky et al. (2013) found that autonomous motivation was not a significant predictor of client attendance ($p = .35$), and the same for controlled motivation ($p = .62$). Impersonal motivation on the other hand revealed statistical significance for client attendance ($p = .030$). This is similar to the finding in this research where autonomous and controlled were not indicative of pharmaceutical sales performance, but impersonal orientation was ($p=.056$) close to being indicative of negative of sub-optimal sales performance.

Statement of Future Research (New Research Questions and Potential Methodologies)

Motivational orientation and its impact on pharmaceutical sales performance is a topic with potential and should still be investigated. The reasons for continuing to investigate this topic as stated previously are due to the potential for improving hiring and management practices of pharmaceutical salespeople. There are estimated to be approximately 62,723 pharmaceutical salespeople in the U.S.A. (U.S. Bureau of Labor Statistics and QCEW, 2014). With so many resources, both human and financial, going towards pharmaceutical salespeople in the United States economy, it is important for organizations to hire and correctly motivate their salespeople.

One recommendation for future research would be to carry out the research within one specific pharmaceutical company and one specific salesforce in that company. This would simplify the data collection process. This would also eliminate any guessing on the part of the pharmaceutical sales representatives taking the survey in terms of their performance. Instead of

leaving the performance questions up to the discretion of the pharmaceutical salespeople, the person researching within the company could hopefully gain access to sales performance data and cross reference that with the results from the GCOS.

A second recommendation for future research would be to include or utilize difference performance metrics in terms of sales performance. For this study, the number of president's club awards and the number of rankings in the top 50% of the salesforce at year end were used. Another idea for a performance metric could be something such as the percent of business quarters where the pharmaceutical salesperson achieved their sales goal at 100% or higher, and so on.

A third recommendation for future research is to find a survey population of pharmaceutical salespeople with more variability in their sales experience. As stated earlier, this could hopefully be done internally within a company's salesforce. This research had a skewed number in terms of the pharmaceutical sales experience of those surveyed; 73% of the respondents had 15+ years of experience.

Another recommendation for future research is to find exactly what motivates pharmaceutical salespeople in terms of significant outcomes in performance. From this research it was shown that neither autonomous orientation nor controlled orientation were statistically significantly related to predicting improved sales performance. In the same vein, future research could go deeper into impersonal orientation in relation to pharmaceutical sales performance, as this was the only orientation that was close to statistical significance and showed that a high score in this specific orientation hinted at poor performance.

One last recommendation would be to utilize a different survey tool. The tool utilized for this research was the GCOS-12. There is also the GCOS-17 that is available. This has more

questions (51 questions total) which would require more time on the part of those being surveyed but may provide more robust data for investigating. There are also other motivational research tools out there available to use from other research theories.

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Appendix A

The General Causality Orientations Scale (GCOS) -The Scale (12-vignette version)

These items pertain to a series of hypothetical sketches. Each sketch describes an incident and lists three ways of responding to it. Please read each sketch, imagine yourself in that situation, and then consider each of the possible responses. Think of each response option in terms of how likely it is that you would respond that way. (We all respond in a variety of ways to situations, and probably most or all responses are at least slightly likely for you.) If it is very unlikely that you would respond the way described in a given response, you should circle answer 1 or 2. If it is moderately likely, you would select a number in the mid-range, and if it is very likely that you would respond as described, you would circle answer 6 or 7.

1. You have been offered a new position in a company where you have worked for some time. The first question that is likely to come to mind is:

a) What if I can't live up to the new responsibility?

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Will I make more at this position?

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) I wonder if the new work will be interesting.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

2. You have a school-age daughter. On parents' night the teacher tells you that your daughter is doing poorly and doesn't seem involved in the work. You are likely to:

a) Talk it over with your daughter to understand further what the problem is.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Scold her and hope she does better.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Make sure she does the assignments, because she should be working harder.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

3. You had a job interview several weeks ago. In the mail you received a form letter which states that the position has been filled. It is likely that you might think:

a) It's not what you know, but who you know.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) I'm probably not good enough for the job.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Somehow they didn't see my qualifications as matching their needs.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

4. You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. You would likely handle this by:

a) Telling the three workers the situation and having them work with you on the schedule.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Simply assigning times that each can break to avoid any problems.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Find out from someone in authority what to do or do what was done in the past.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

5. A close (same-sex) friend of yours has been moody lately, and a couple of times has become very angry with you over "nothing." You might:

a) Share your observations with him/her and try to find out what is going on for him/her.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Ignore it because there's not much you can do about it anyway.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Tell him/her that you're willing to spend time together if and only if he/she makes more effort to control him/herself.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

6. You have just received the results of a test you took, and you discovered that you did very poorly. Your initial reaction is likely to be:

a) "I can't do anything right," and feel sad.

1 2 3 4 5 6 7
very unlikely moderately likely very likely

b) "I wonder how it is I did so poorly," and feel disappointed.
1 2 3 4 5 6 7
very unlikely moderately likely very likely

c) "That stupid test doesn't show anything," and feel angry.
1 2 3 4 5 6 7
very unlikely moderately likely very likely

7. You have been invited to a large party where you know very few people. As you look forward to the evening, you would likely expect that:

a) You'll try to fit in with whatever is happening in order to have a good time and not look bad.
1 2 3 4 5 6 7
very unlikely moderately likely very likely

b) You'll find some people with whom you can relate.
1 2 3 4 5 6 7
very unlikely moderately likely very likely

c) You'll probably feel somewhat isolated and unnoticed.
1 2 3 4 5 6 7
very unlikely moderately likely very likely

8. You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterized as:

a) Take charge: that is, you would make most of the major decisions yourself.
1 2 3 4 5 6 7
very unlikely moderately likely very likely

b) Follow precedent: you're not really up to the task so you'd do it the way it's been done before.
1 2 3 4 5 6 7
very unlikely moderately likely very likely

d) Seek participation: get inputs from others who want to make them before you make the final plans.
1 2 3 4 5 6 7
very unlikely moderately likely very likely

9. Recently a position opened up at your place of work that could have meant a promotion for you. However, a person you work with was offered the job rather than you. In evaluating the situation, you're likely to think:

a) You didn't really expect the job; you frequently get passed over.

1 2 3 4 5 6 7
very unlikely moderately likely very likely

b) The other person probably "did the right things" politically to get the job.

1 2 3 4 5 6 7
very unlikely moderately likely very likely

c) You would probably take a look at factors in your own performance that led you to be passed over.

1 2 3 4 5 6 7
very unlikely moderately likely very likely

10. You are embarking on a new career. The most important consideration is likely to be:

a) Whether you can do the work without getting in over your head.

1 2 3 4 5 6 7
very unlikely moderately likely very likely

b) How interested you are in that kind of work.

1 2 3 4 5 6 7
very unlikely moderately likely very likely

c) Whether there are good possibilities for advancement.

1 2 3 4 5 6 7
very unlikely moderately likely very likely

11. A woman who works for you has generally done an adequate job. However, for the past two weeks her work has not been up to par and she appears to be less actively interested in her work. Your reaction is likely to be:

a) Tell her that her work is below what is expected and that she should start working harder.

1 2 3 4 5 6 7
very unlikely moderately likely very likely

b) Ask her about the problem and let her know you are available to help work it out.

1 2 3 4 5 6 7
very unlikely moderately likely very likely

c) It's hard to know what to do to get her straightened out.

1 2 3 4 5 6 7
very unlikely moderately likely very likely

12. Your company has promoted you to a position in a city far from your present location. As you think about the move you would probably:

a) Feel interested in the new challenge and a little nervous at the same time.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Feel excited about the higher status and salary that is involved.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Feel stressed and anxious about the upcoming changes.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

13. How many quarters (3-month periods) in the past five years have you hit your pharmaceutical sales goal of 100% to goal or higher (please guess if you are unsure)?

a) 0-5 quarters b) 6-10 quarters c) 11-15 quarters d)16+ quarters

14. How many times in your pharmaceutical career have you received a sales award such as presidents club or the equivalent thereof (please guess if you are unsure)?

a) 1-2 times b) 3-4 times c) 5-6 times d) 7+ times

15. How many times in your pharmaceutical sales career have you finished in the top 50% of the salesforce at yearend?

a) 3-4 times b) 5-6 times c) 7-8 times d) > 8 times

16. How many years of experience do you have in pharmaceutical sales?

a) 1-5 years b) 6-10 years c) 11-15 years d) 16+ years

17. What is your Gender?

a) Male b) Female

18. What is your highest level of education achieved?

a) Bachelor's b) Master's c) Doctorate