2017

Relationships Between Sales Management Control, Salesperson Role, and Salesperson Performance

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Abstract

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MA, Marymount University, 1992

BS, Florida International University, 1985

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Organizational Psychology

Walden University

November 2017

Abstract

Organization theory proposes that managers exert control over the behavior of salespeople and the outcomes salespeople are expected to deliver. The purpose of this quantitative, nonexperimental study was to examine the relationships between activity control, capability control, and outcome control and salesperson performance, as well as the moderating effects of product complexity, task complexity, and number of accounts on the control-performance relationships for business-to-business sales personnel. The framework for the study was based in the concept of organizational control. Data analysis included hierarchical regression of a convenience sample of 374 survey responses from salespeople to analyze the direct and moderating relationships between perceived sales management control and salesperson performance. Data were collected using Fluid Surveys. Although significant positive effects were identified between outcome control, activity control, and capability control on salesperson performance, as well as a significant negative effect of task complexity on salesperson performance, no moderating effects were found. Because sales management behavior impacts salesperson satisfaction, retention, and performance, identifying the positive impact of activity, capability, and outcome control, and the negative impact of task complexity on salesperson performance provides sales managers with important guidance when considering the elements of an effective approach to sales management. Finally, providing managers with specific guidance regarding management approach has implications for positive social change within organizations by improving salesperson satisfaction with their jobs, their manager, and the organization for whom they work.

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Acknowledgements

I would like to thank my husband Phil for his tireless support of this process. He lost his playmate for quite a long time. He completely supported my continued study, even when our finances were strained. I want to thank my friend and colleague Patricia (Trish) Derman. She was a light in the darkness for me when I was wrestling with quitting. I had reached a low point and felt I was spinning my wheels and not making progress. She recommended a resource to me that was exactly what I needed to turn my perspective toward progress and continue my journey. I'd like to thank my dear friend Kim Long who encouraged me to finish and run the final miles necessary to complete my dissertation. She was the voice of reason, encouraging me to persevere and celebrate this monumental accomplishment in my life. I'd like to sincerely thank Dr. Vincent Fortunato for his bold and direct management of the bulk of my dissertation process. He was extremely committed to ensuring that I did my best work. Finally, I would like to thank Dr. Maxwell Rainforth and Dr. Deborah Peck. Dr. Rainforth stepped in as my dissertation chair very late in the process and provided timely and comprehensive feedback to get me over the finish line. Dr. Peck provided critical and thoughtful challenges at key points along the process to ensure that I submitted scholarly work.

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Chapter 1: Introduction to the Study

One of the primary goals of a salesperson is to achieve sales results (Behrman & Perreault, 1982). Sales managers are in a position to significantly influence the actions and behaviors of the salespeople they manage (Anderson & Oliver, 1987). Sales managers struggle with the transition from salesperson to sales manager (Russ, McNeilly, & Comer, 1996), often receive very little effective training (Dubinsky, Mehta, & Anderson, 2001), and are not given specific guidance on how to best allocate their time and effort (Beck, 2006). A key element of organization theory involves the role expectations communicated to salespeople by their sales managers (Jones, Kantak, Futrell, & Johnston, 1996). Manager behavior matters and can have devastating effects if applied inappropriately. According to CEB Sales and Service (2012), the cost of a failed sales manager exceeds four million dollars due to the direct and indirect costs of lost productivity, attrition, recruitment, salary, and training. On the positive side, management behavior applied appropriately can have very positive effects. Leader role clarity in communicating role-based expectations had a statistically significant negative effect on salesperson turnover via salesperson role clarity and job satisfaction (Jones et al., 1996). According to Doyle and Shapiro (1980), leader clarity setting and communicating expectations regarding salesperson activities was the most significant contributor to salesperson motivation.

Sales management behavior involved in creating role clarity is not a one-size-fits-all affair and should be influenced by the nature of the situational characteristics that define the roles of the salespeople being managed (Flaherty, Arnold, & Hunt, 2007). Sales managers can focus on the behaviors sellers are expected to execute, the results

sellers are held accountable to achieve, or both (Ouchi, 1979). Seller behaviors and outcomes are largely defined by the roles sellers occupy in an organization (Eisenhardt, 1985). By examining specific elements of the salesperson's role characteristics and the connection between sales management approach (control) and salesperson performance, I contributed new insights to the nature and type of management control that are appropriate for different sales roles that differ in terms of their characteristics (e.g., the complexity of the product sold and the process buyers use to purchase the seller's product). By examining the moderating role of product complexity, task complexity, and number of accounts on the relationship between management control (both behavior and outcome control) and salesperson performance, I provided guidance to sales managers on the best application and level of sales management control for various individual sales role characteristics. As a result of this study, I provided specific details organizations can use to design management procedures and associated management training to better prepare managers to behave in ways that are appropriate for salespeople they manage. In addition to providing improved clarity for the sales manager, I identified the appropriate type and level of sales management control by salesperson role characteristics to reduce job stress, improve salesperson job satisfaction, and positively impact salesperson performance (see Cravens, Ingram, & LaForge, 1993). This may lead to an overall positive change to the work environment of both salespeople and sales managers.

This chapter begins with an examination of the background of prior management control research and the justification for the study. This is followed by a discussion of the gaps/limitations associated with previous research findings. The purpose of the study is then discussed, including the type of study, study intent, and a description of the

independent, dependent, and moderating variables. The research questions are stated, including null and alternative hypotheses. The theoretical framework for the study is described including the origin of the theory and the nature of the link between the theory and the research questions posed in this study. A description of the nature of the study is provided, including the study variables and the methodology used to conduct the study. Definitions of key terms are provided, key assumptions stated, and scope and delimitations of the study are shared. Significance of the study is discussed, including the both the extension of the extant literature on management control as well as the practical application to leaders of sales organizations. The chapter ends with a summary and introduction to the literature review.

Background

This study addressed the relationships between sales management control and salesperson performance, including the potential moderating effect of salesperson role characteristics. Although many studies have been conducted on the impact of sales management control on salesperson performance (Baldauf, Cravens, & Piercy, 2005), findings have been inconsistent (Miao & Evans, 2011). Panagopoulos, Johnson, and Mothersbaugh (2015) found that the two most prevalent measures of management control, introduced by Jaworksi and MacInnis (1989) and Oliver and Anderson (1987), measured different constructs. Panagopoulos et al. also found that the use of both scales in the same study, with the same population, resulted in different results regarding the relationship between management control and salesperson performance.

The three types of management control mechanisms of interest to this study were (a) outcome control, (b) capability control, and (c) activity control. Salesperson outcome

performance was defined as the degree to which a salesperson meets sales objective targets (Behrman & Perreault, 1982). Outcome control was defined as the degree to which an individual seller is evaluated against the results of individual seller effort (Challagalla & Shervani, 1996). Outcome control has been found to be positively related to salesperson outcome performance (Babakus, Cravens, Grant, Ingram, & LaForge, 1996; Piercy, Cravens, & Lane, 2009; Cravens, Lassk, Low, Marshall, & Moncrief, 2004; Evans, Landry, Po-Chien, & Shaoming, 2007), indirectly related to salesperson outcome performance (Cravens et al., 1993), and unrelated to salesperson outcome performance (Joshi & Randall, 2001; Miao & Evans, 2013; Oliver & Anderson, 1994). The variation in study findings may be attributed to differences in the populations studied. The populations were varied and included sales executives (Babakus et al., 1996), sales managers (Piercy et al., 2009), and salespeople (Cravens et al., 2004; Evans et al., 2007; Piercy et al., 2009). There were also differences in the types of salesforces studied. Some studies included business-to-consumer sales (Joshi & Randall, 2001), some contained a mixture of business-to-consumer and business-to-business salesforces (Evans et al., 2007), and others addressed business-to-business sales (Oliver & Anderson, 1994). This variation in level of position (chief executive, sales manager, salesperson) and type of sale (business-to-consumer versus business-to-business) may have contributed to the variation in findings from prior studies.

In addition to variation in positions examined (chief executive officers, sales manager, salesperson) and populations studied (business-to-business versus business-to-consumer), there were variations in management control conceptualizations (Anderson & Oliver, 1987; Jaworski, 1988) and associated measurement instruments used (Jaworski &

MacInnis, 1989; Oliver & Anderson, 1994) to examine the control-performance relationship. Anderson and Oliver (1987) proposed that behavior control (activity and capability control) and outcome control were opposite ends of a continuum and that the level of outcome control was determined by the lack of behavior control. Associated measurement scales (Babakus et al., 1996; Cravens et al., 1993; Oliver & Anderson, 1994) included a continuum of control in which lower scores indicated an outcome-control orientation and higher scores indicated a behavior-control orientation. Jaworski (1988) proposed that behavior control and outcome control were two separate constructs. Associated measurement instruments (Jaworksi & MacInnis, 1989) included separate scales for behavior and outcome control. Panagopoulos, et al. (2015) used both management control conceptualizations (Anderson & Oliver, 1987; Jaworksi, 1988) and associated measurement scales (Jaworksi & MacInnis, 1989; Oliver & Anderson, 1994) to examine the relationship between management control and salesperson performance. Panagopoulos et al. found that the size and nature of the effect of sales controls on salesperson performance differed depending on the conceptualization and associated scales used. Challagalla and Shervani (1996) argued for an adjusted conceptualization of process control. Challagalla and Shervani proposed that measures of process control were too blunt and may have contributed to variation in study findings. Challagalla and Shervani proposed that behavior control should consist of the two separate constructs of capability and activity control.

Capability control is defined as management behaviors that emphasize the development of individual skills and abilities of salespeople (Challagalla & Shervani, 1996). Challagalla and Shervani (1996) found no direct association between capability

control and salesperson outcome performance. This lack of direct association was replicated by Miao and Evans (2013). In another study, capability control was found to be positively related to salesperson outcome performance (Flaherty et al., 2007). As mentioned earlier, the type of sales environments in these studies varied between business-to-business and business-to-consumer.

Activity control involves the sales manager's attempt to influence routine activities undertaken by salespeople (Challagalla & Shervani, 1996). Challagalla and Shervani (1996) found no direct influence of activity control on salesperson outcome performance. This lack of direct association between activity control and salesperson outcome performance was replicated by Evans et al. (2007) and Miao and Evans (2013). Activity controls and capability controls have been found to interact negatively to affect problem-solving, such that capability control significantly and positively impacted problem-solving when activity control was weak, and significantly negatively impacted problem-solving when activity control was strong (Wang, Dou, & Zhou, 2012).

Piercy et al. (2009) found that management control was positively and significantly related to salesperson behavior and outcome performance; however, Challagalla and Shervani (1996) asserted that this relationship may be moderated by the difference in tasks associated with a salesperson's role. Task complexity (John & Weitz, 1989) and product complexity (Slater & Olson, 2000) are two sales role characteristics researchers have studied relative to salesperson performance (Atuahene-Gima & Li, 2002; Bello & Gilliland, 1997; Flaherty et al., 2007; Menguc & Tansu Barker, 2003), although the moderating effect of these constructs on the relationship between sales management control and salesperson performance has not been studied. Number of

accounts is another sales role characteristic researchers have used to codify a taxonomy of sales roles (Moncrief, Marshall, & Lassk, 2006); however, the potential moderating effect of number of accounts on the relationship between management control and salesperson performance has not been studied.

Task complexity concerns the nature of the purchase decision from the buyer's perspective (John & Weitz, 1989). Menguc and Tansu Barker (2003) examined the relationships between sales management control, task complexity, sales volume, and profitability. Menguc and Tansu Barker found that when behavior-based management control was high, incentive pay was negatively related to sales volume. High levels of task complexity were positively and significantly related to sales volume but not profitability (Menguc & Tansu Barker, 2003).

Product complexity concerns the nature of the product being sold from the seller's perspective (Slater & Olson, 2000). Flaherty et al. (2007) examined the relationship between sales management control, product complexity, and sales performance. Flaherty et al. found a significant positive effect of output control on salesperson performance when product complexity was high, but no effect when product complexity was either moderate or low.

Number of accounts represents the total number of existing customers and potential customers assigned to a given seller (Menguc & Tansu Barker, 2003). According to Menguc and Tansu Barker (2003), when sellers are assigned a large number of accounts, they are more likely to focus on high-volume, low-effort transactions instead of sales that are more complex and take longer to close. Although the impact of number of accounts on the relationship between management control and salesperson

performance has not been empirically examined, Moncrief et al. (2006) considered number of accounts as an important consideration when they developed a taxonomy of salesperson positions. Moncrief et al. suggested that salesperson positions differ and should be considered when evaluating salesperson performance.

In summary, variations have been found in the conceptualizations of management control (Anderson & Oliver, 1987; Challagalla & Shervani, 1996; Jaworski, 1988), measurement scales (Challagalla & Shervani, 1996; Jaworski & MacInnis, 1989; Oliver & Anderson, 1994), populations studied (business-to-business, business-to-consumer), types of samples examined (chief executive officers, sales managers, salespeople), and intervening variables explored (task complexity, product complexity, number of accounts). Findings of the relationship between management control and salesperson performance have been found to be significant and positive (Babakus et al., 1996; Piercy et al., 2009; Cravens et al., 2004; Evans et al., 2007), indirect (Cravens et al., 1993), and unrelated (Cravens et al., 1993). According to Panagopoulos et al. (2015), the variation in study findings can be directly attributed to the choice of management control conceptualization and associated measurement scales.

Problem Statement

Sales managers in direct, business-to-business sales environments have the most frequent direct contact with frontline salespeople, and are in the best position to impact individual seller performance. Although many studies focused on salesperson effectiveness by attempting to isolate determinants of individual seller performance (Churchill, Ford, Hartley, & Walker, 1985), fewer studies have targeted the sales manager level within organizations (Babakus et al., 1996). Although management control

of the sales force is an important element of management decision-making, little research has focused on the specific mechanisms of effective sales force control exerted by sales management, regardless of type of sales environment (Cravens et al., 2004). Of the large number of empirical studies that addressed the relationship between sales management control and salesperson performance, only four studies considered the effect of the salesperson task characteristics of task complexity and product complexity (Atuahene-Gima & Li, 2002; Bello & Gilliland, 1997; Flaherty et al., 2007; Menguc & Tansu Barker, 2003). Across these four studies (Atuahene-Gima & Li, 2002; Bello & Gilliland, 1997; Flaherty et al., 2007; Menguc & Tansu Barker, 2003), researchers examined different populations and used different management control conceptualizations and associated measurement scales.

Researchers examined salespeople in business-to-business sales (Atuahene-Gima & Li, 2002; Flaherty et al., 2007), sales managers in business-to-business sales (Menguc & Tansu Barker, 2002), and sales managers in a mix of business-to-business and business-to-consumer sales (Bello & Gilliland, 1997). Results obtained in a pure business-to-business sales environment (Atuahene-Gima & Li, 2002; Flaherty et al., 2007) may not be directly comparable to results obtained in a mixed population of business-to-business and business-to-consumer sample (Bello & Gilliland, 1997). Management control conceptualizations and associated measurements scales used were also notably different across the four studies. Three of the four studies (Atuahene-Gima & Li, 2002; Bello & Gilliland, 1997; Flaherty et al., 2007) included the Jaworksi (1988) conceptualization of separate constructs of process and output control, and the associated measurement scales developed by Jaworski and MacInnis (1989). Menguc and Tansu

Barker (2003) used the Anderson and Oliver (1987) conceptualization of behavior and output control as separate ends of a single control spectrum, as well as the associated measurement scales developed by Babakus et al. (1996). The Babakus et al. (1996) measurement scales do not permit the examination of the individual effects of output and process controls on salesperson outcome performance, or the impact of task complexity, product complexity, or number of accounts on the control-performance relationship.

In addition to variation in management control conceptualizations and associated scales, there were variations in the constructs and associated measurement scales for product complexity. Two studies (Atuahene-Gima & Li, 2002; Bello & Gilliland, 1997) included a scale developed by Anderson (1995) to measure product complexity. Anderson (1995) defined product complexity as the technical attributes of the product. Flaherty et al. (2007) used the scale developed by Slater and Olson (2000) to measure the nature of the product being sold from the buyer's perspective. Menguc and Tansu Barker (2003) examined purchase complexity using the scale developed by John and Weitz (1989) concerning the complexity of the purchasing task from the customer's perspective. Although all constructs and associated scales are related to the sales process, each measure has a unique focus, and study findings cannot be directly compared.

Number of accounts associated with a specific sales assignment was considered within multiple studies (Menguc & Tansu Barker, 2003; Moncrief et al., 2006); however, the effect of number of accounts on the control-performance relationship was not examined. Although Menguc and Tansu Barker (2003) included number of accounts in their study, they used the Jaworski and MacInnis (1989) management control scales to measure process and output control. According to Challagalla and Shervani (1996),

process control includes two separate types of management control. Challagalla and Shervani's conceptualization of capability and activity control being separate constructs was not used in any of the studies addressing the impact of product complexity, task complexity, or number of accounts on the control-performance relationship. In summary, inconsistencies exist regarding types of populations studied (sales managers, salespeople), types of sales environments (business-to-business, business-to-consumer), conceptualizations of management control (Anderson & Oliver, 1987; Challagalla & Shervani, 1996; Jaworski, 1988), scales used to measure management control (Babakus et al., 1996; Challagalla & Shervani, 1996; Jaworski & MacInnis, 1989), and scales used to measure product and task complexity (Anderson, 1995; John & Weitz, 1989; Slater & Olson, 2000).

Purpose of the Study

The purpose of this quantitative study was to examine the relationships between three types of management control (outcome, capability, activity) and salesperson outcome performance. The second purpose of this study was to examine whether product complexity, task complexity, and number of accounts moderated the above relationships.

Research Questions and Hypotheses

Research Question 1: Are there relationships between the three types of sales management control and salesperson outcome performance?

$H_0$1: Outcome control, capability control, and activity control are not related to salesperson outcome performance.

H_a1: Outcome control, capability control, and activity control are positively related to salesperson outcome performance.

Research Question 2: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of outcome control on salesperson outcome performance?

$H_0$2: Task complexity, product complexity, and number of accounts does not moderate the relationship between outcome control and salesperson outcome performance.

H_a2: Task complexity, product complexity, and number of accounts moderates the relationship between outcome control and salesperson outcome performance.

Research Question 3: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of behavior-based capability control on salesperson outcome performance?

$H_0$3: Task complexity, product complexity, and number of accounts does not moderate the relationship between capability control and salesperson outcome performance.

H_a3: Task complexity, product complexity, and number of accounts moderates the relationship between capability control and salesperson outcome performance.

Research Question 4: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of activity control on salesperson outcome performance?

$H_0$4: Task complexity, product complexity, and number of accounts does not moderate the relationship between activity control and salesperson outcome performance.

H_a4: Task complexity, product complexity, and number of accounts moderates the relationship between activity control and salesperson outcome performance.

Nature of the Study

This study was quantitative and included a nonexperimental design. Quantitative studies of the behavior and outcome-based management control constructs within sales and marketing have been pervasive since 1975 (Baldauf et al., 2005; Jaworski & MacInnis, 1989; Papangapoulos et al., 2015). Of interest in the current study was the examination of salesperson role characteristics as moderator variables in determining the influence of behavior and outcome-based sales management control on salesperson performance. Hierarchical regression analysis was performed to determine the moderating effects of the salesperson role characteristics of task complexity, product complexity, and number of accounts on the effects of activity, capability, and outcome control on salesperson outcome performance.

Outcome control was an independent variable that indicated the degree to which an individual seller is evaluated against the results of their effort (see Miao & Evans, 2013). Capability control was an independent variable indicating the development of individual skills and abilities. Activity control involved the sales manager's attempt to influence routine activities. Outcome control, capability control, and activity control were each measured using a 5-item, 7-point Likert scale initially developed by Jaworski and Macinnis (1989) and adapted by Challagalla and Shervani (1996). Salesperson outcome performance indicated the extent to which sellers achieve company volume and profit targets (see Behrman & Perreault, 1982). This construct was the dependent variable.

Task complexity was a potential moderating variable indicating the nature of the purchase decision from the buyer's perspective (see John & Weitz, 1989). Task complexity was measured using a 7-item scale. These included 0%, 10%, 30%, 50%,

70%, 90%, and 100%. The total number of points for all four questions was averaged to determine the task complexity felt by the individual salesperson. Product complexity was a potential moderating variable indicating the nature of the product being sold from the seller's perspective (Slater & Olson, 2000). Product complexity was measured using a 2-item scale developed by Slater and Olson (2000). Each item was measured using a 7-point scale from strongly disagree to strongly agree. The total number of points for the two questions was averaged to determine the product complexity felt by the individual salesperson. Number of accounts was the total number of accounts assigned to a particular seller. Age, sex, and years as a salesperson were extraneous variables that had been used in prior studies as control variables (Flaherty et al., 2007; Panagopoulos et al., 2015).

The target population for this study was salespeople who report directly to a frontline sales manager in a business-to-business environment. The data were collected via salespersons' responses to a survey about their sales manager's level of outcome, capability, and activity control, as well as task complexity, product complexity, and number of accounts. Salespeople also responded to questions about their individual outcome performance. The nature of the sales environment in this study was business-to-business sales. There was no limitation regarding size of sales team managed, and there was no tenure requirement. Distributor representatives who sell through channels were not included in this study, nor were sellers of business-to-consumer sales such as real estate or retail sales. The research was conducted with a sample of salespeople from a security services firm in the business-to-business, direct sales environment.

Desired participants were identified via a target list of clients and prospects of a sales management training and consulting company. Sales executives within the target organizations were invited to have their sales managers evaluated as part of the study. A description of the study was provided along with my prospectus. Once the participating company agreed to participate, a sample e-mail was drafted and sent to all participating sales managers to explain the study and request the participation of their salespeople. The survey was deployed via Fluid Surveys. A unique link was developed for the participating company. All appropriate permissions required were secured prior to survey deployment and participation.

Conceptual and Theoretical Frameworks

The framework for this study was based in the concept of organizational control (see Ouchi, 1979). Organizational control is an element of organizational theory (Etzioni, 1965; Ouchi & Maguire, 1975). Ouchi (1977) asserted that control within an organization and the structure of an organization are not interchangeable, and that the control system in place consists of a process for monitoring and evaluating performance. Ouchi (1977) was the first to propose that control within organizations consists of two fundamental types of phenomena that can be measured: behavior and the outputs resulting from the behavior.

Several additional frameworks have been proposed as a result of Ouchi's (1977) seminal work to further define the control exerted by managers within an organization. Anderson and Oliver (1987) proposed a framework for management control that has been studied extensively in the literature. Their proposed framework for management control involves the level to which managers use a behavior-based approach to (a) monitor, (b)

direct, (c) evaluate, and (d) reward individual sellers. Based on an extensive analysis of management control studies, Panagopoulos and Avlonitis (2008) found the framework proposed by Anderson and Oliver was by far the most widely studied and suggested that it formed the benchmark for further studies.

Another framework for behavioral control introduced by Jaworski and Merchant (1988) extended the idea of management control by going beyond behavioral and output control, and adding the additional elements of self-control and social control. Jaworski and Merchant suggested that behavioral control and output control are the formal mechanisms organizations use to monitor and evaluate performance, and that self-control and social control are the informal means organizations use to monitor and evaluate performance. The constructs of formal and informal management control (Jaworski & Merchant, 1988) and associated scales (Jaworski & MacInnis, 1989) have been widely used and reported extensively in the management control literature (Baldauf et al., 2005).

To further refine the approach to management control research, Challagalla and Shervani (1996) disaggregated the global behavioral control construct into activity control and capability control. Jaworski and MacInnis (1989) and Oliver and Anderson (1994) considered behavioral control to be a global construct; however, the behaviors that sales managers can influence include both the day-to-day activities of salespeople, as well as the more complex behaviors necessary to enhance salesperson capability (Challagalla & Shervani, 1996). Activity control involves the sales manager's attempt to influence routine activities undertaken by salespeople, and capability control refers to the development of individual skills and abilities (Challagalla & Shervani, 1996). This conceptualization of activity control, capability control, output control, and associated

scales (Challagalla & Shervani, 1996) was relevant to this study and was used as the measure of both behavioral control (activity and capability control) and output control. The constructs and associated scales developed by Challagalla and Shervani have been used widely for empirical studies in the management control literature (Evans et al., 2007; Fang, Evans, & Zou, 2005; Miao & Evans, 2011, 2014; Wang et al., 2012).

Definition of Terms

The following terms are operationally defined for the purpose of this study:

Activity control: A sales manager's attempt to influence routine activities undertaken by salespeople (Challagalla & Shervani, 1996).

Behavior control: Management surveillance of employee activities (Eisenhardt, 1985).

Business-to-business sales: A sales environment characterized by salespeople selling directly to one or more buyers within a business context.

Business-to-consumer sales: A sales environment characterized by salespeople selling directly to individual consumers.

Capability control: Management behaviors that emphasize the development of individual skills and abilities of salespeople (Challagalla & Shervani, 1996).

Management control: Written, management-initiated mechanisms that increase the probability that marketing employees will behave in ways that support stated marketing objectives (Jaworski, 1988).

Number of accounts: The number of existing customers and prospective customers assigned to an individual salesperson.

Process control: Management focus on seller behaviors rather than seller end results (Jaworski, 1988).

Product complexity: Nature of the product being sold from the seller's perspective (Slater & Olson, 2000).

Output control: Performance standards measured as end results, such as quota or revenue targets (Jaworski, 1988).

Sales role: Situational or task characteristics associated with a given sales position (Flaherty et al., 2007).

Salesperson outcome performance: A measure of salesperson objective achievement (Behrman & Perreault, 1982).

Task complexity: The nature of the purchase decision from the buyer's perspective (John & Weitz, 1989).

Assumptions

One assumption of this study was that salespeople provided accurate reporting of their level of objective sales performance. Actual salesperson performance data are always the most reliable measure; however, the perceived risk to organizational executives in providing performance data to outside entities often prohibits provision of individual employee data. Another assumption was that measures of capability, activity, outcome control, task complexity, product complexity, number of accounts, and sales objective performance were face valid and easily understood by salespeople when evaluating levels of these constructs. This assumption was necessary to ensure the findings of this study would be useful to researchers and sales practitioners who want

tactical guidance regarding the relationships of management control, sales person characteristics, and salesperson performance.

Scope and Delimitations

This study addressed the relationships between the sales management control elements of output control (Jaworski & MacInnis, 1989), capability control (Challagalla & Shervani, 1996), activity control (Challagalla & Shervani, 1996), salesperson outcome performance (Behrman & Perreault, 1982), and the moderating effects of task complexity (John & Weitz, 1989), product complexity (Slater & Olson, 2000), and number of accounts on the above relationships. This study took place in a business-to-business sales context and involved feedback from a salesperson population. The selection of instruments, constructs, and population provided practical insights for both researchers and practitioners regarding the types of management control to employ to drive higher levels of sales performance, and under what conditions those controls should be employed. The Challagalla and Shervani (1996) conceptualization was selected because it provided a more sensitive measure of behavior control as compared to earlier conceptualizations (Anderson & Oliver, 1987; Jaworksi, 1988).

The instruments developed by Jaworksi and MacInnis (1989) to measure output control differ from other measures of outcome control, namely those of Oliver and Anderson (1994) and Babakus at al. (1996), both of which align with the theoretical propositions set forth by Anderson and Oliver (1987). Anderson and Oliver proposed that behavior control and output control are opposite ends of a control spectrum and that management control is an either/or proposition consisting of a primarily output orientation or a behavior orientation. Jaworksi and MacInnis designed instruments to

measure output and behavior control as separate constructs, proposing that both types of control can be used at the same time. The concept of behavior control (Anderson & Oliver, 1987) was articulated by Jaworksi and MacInnis (1989) as process control and was measured with a separate scale from output control.

A large number of studies aligned with the Anderson and Oliver 1987management control framework and associated instruments measuring a continuum of control (Babakus et al., 1996; Cravens, Ingram, LaForge, & Young, 1993; Oliver & Anderson, 1994) as either output-oriented or behavior-oriented. The other primary management control conceptualization (Jaworski, 1988) and associated measurement scales (Jaworski & MacInnis, 1989) aligned with Jaworksi's (1988) proposition that output and process control can both be present and relevant in a sales context. Challagalla and Shervani (1996) further expanded the scales developed by Jaworski and MacInnis (1989) by disaggregating the global construct of process control (behavior control in the Anderson & Oliver, 1987 conceptualization) into two separate behavior-related constructs of capability and activity control. All three of these conceptualizations (Anderson & Oliver, 1987; Jaworksi & MacInnis, 1989; Challagalla & Shervani, 1996) are used to measure different constructs using different measurement scales. According to Panagopoulos et al. (2015), the results of any management control study depend heavily on the instrument used. Panagopoulos et al. found that the Oliver and Anderson (1994) instrument produced markedly different results than the Jaworski and MacInnis (1989) instrument, such that no statistically significant relationship was identified between output control and salesperson performance based on the use of the Oliver and Anderson (1994) instrument, compared to a linear positive and statistically significant relationship

between output control and salesperson performance using the Jaworksi and MacInnis (1989) measurement. Consequently, results of the current study cannot be compared to results of studies using either the Anderson and Oliver (1987) conceptualization and associated scales (Babakus et al., 1996; Cravens et al., 1993; Oliver & Anderson, 1994) or the Jaworski (1988) conceptualization and associated scales (Jaworksi & MacInnis, 1989) regarding the relationship between management control and salesperson performance. Results of this study can be discussed only in terms of the constructs measured based on the scales used and the associated relationships identified.

The population studied provided another practical consideration for the validity of the results. A business-to-business sales force was selected for this study because it provided the best context in which to study the interactive effects of management control and sales performance (see Challagalla & Shervani, 1996). Although other management controls studies included business-to-consumer retail sales (Joshi & Randall, 2001) and a mix of sales and marketing audiences (Jaworski, Stathakopoulos, & Krishnan, 1993), the results of the current study can only be compared to other studies conducted in a business-to-business sales context.

Finally, the moderator variables incorporated in this study were vastly different from moderators examined in other studies where the researchers were interested in indirect relationships between management control and salesperson performance. This study incorporated product complexity, task complexity, and number of accounts as moderators. Other studies included dysfunctional seller behaviors (Jaworski & MacInnis, 1989; Ramaswami, 1996), salesperson location (Challagalla, Shervani, & Huber, 2000), and other consequences such as salesperson satisfaction (Jaworksi & Kohli, 1991) and

organizational commitment (Agarwal, 1999). These and other related constructs relevant to a salesperson's role were not considered as part of the current study. In summary, the selection of the management control conceptualization (Challagalla & Shervani, 1996) and associated measurement scales of output, capability, and activity control, as well as the business-to-business sales context provided both useful boundaries for this study, as well as practical limitations as to the applicability of the study findings.

Limitations

Studies are valid if the instrument used to test consistently measures what it is intended to measure. Internal consistency of the survey responses was examined with Cronbach's alpha values for the three sales management control scales (outcome, activity, and capability) and outcome performance. The process ensured that the survey questions were internally consistent through examination of the internal consistency of the responses of the different respondents.

Construct validity is the extent to which a measurement is truthful, accurate, authentic, or free of system error with evidence supporting the conclusion. Studies are valid if the instrument used to test a construct consistently measures what it is intended to measure. Construct validity for all measures other than product complexity were strong. Cronbach's alpha of .67 for product complexity was the only reliability estimate that was below the .70 acceptable level. This may call into question any findings of moderation of the relationship between sales management controls and salesperson performance.

The internal validity of a quantitative study is "the degree to which observed changes in a dependent variable can be attributed to changes in an independent variable" (Pedhazur & Schmelkin, 2013, p. 154). For this study, one major threat to internal

validity was the direction of the causal influence of the variables studied. This study was not designed to determine a cause-and-effect relationship. I could not assert that increases in one or more types of management control led to improved sales performance. In addition to a lack of causal influence, there were other factors such as market turbulence and competitive intensity that may have impacted sales performance. Those and other complicating factors were beyond the scope of this study.

External validity concerns the degree to which conclusions from a study can be generalized to other categories of people, settings, or times (Green & Salkind, 2010). Results from this study are not generalizable to other study population groups other than salespeople in business-to-business sales. Neither salespeople in business-to-consumer sales nor marketing personnel can apply the findings from my study due to the variation in job type and evaluation measures. Statistical conclusion validity was also a concern. The data were evaluated to ensure the data did not violate the assumptions of the statistical tests.

Significance

Researchers have been studying the relationship between management control and salesperson performance for many years (Babakus et al., 1996); however, wide variation exists between conceptualizations of management control, scales used to measure management control, and populations studied (business-to-business, business-to-consumer). These variations in conceptualizations and associated measurement scales can be confounding to a researcher interested in identifying specific variables that impact the control-performance relationship. The current study provided further clarification to sales management control researchers as to which types of variables affect the control-

performance relationship and the nature of that effect within a business-to-business sales context. In addition, this study advanced the understanding of sales management control by providing the first empirical study to address the specific moderating effects of product complexity, task complexity, and number of accounts on the relationships between capability control, activity control, and outcome control on salesperson outcome performance. This provided a very specific context within which researchers could compare results of prior studies of the control-performance relationships, and provided potential guidance for the design of future studies. From a practical perspective, the results of this study may help guide sales managers and leaders regarding the appropriate types of management control to implement based on variation in sales role characteristics. Sales managers are provided with concrete insights regarding which approach to use in a given situation to drive the best performance outcomes for their sales teams.

Summary

This chapter began with a brief introduction, followed by the background of the study including a review of relevant literature. The problem statement provided evidence of a gap in the current literature and justification for the specific parameters of this study. The purpose of the study was articulated regarding the relationship between the independent, dependent, and moderating variables. Research questions and associated hypotheses were presented, followed by the underlying theoretical foundation for the constructs and associated hypotheses. The nature of the study was discussed including independent, dependent, and moderating variables in addition to the specific methodology, population, and analysis to be used. Key definitions of independent,

dependent, and moderator variables were provided. Important assumptions for the study were stated, as well as the scope and delimitations of this study. Limitations were explored regarding internal and external validity, construct validity, and statistical conclusion validity. Finally, the significance of the study was discussed regarding the contribution to academic literature and practical application within a sales context. Chapter 2 provides a review of relevant research into organizational theory, sales management control, salesperson role characteristics, and salesperson performance, as well as the identification a specific gap in the empirical literature related to the effect of task complexity, product complexity, and number of accounts on the relationships between capability control, activity control, and outcome control on salesperson outcome performance. Chapter 3 presents the specifics of the research methodology including the design and rationale of the study, population and sampling procedures, instrumentation and operationalization of constructs, threats to validity, and ethical procedures. Chapter 4 provides specific results of this study and the degree to which the results differed from the research questions and associated hypotheses. Chapter 5 provides a thorough discussion of the results of this study compared with other studies of management control using similar constructs, as well as limitations and suggestions for future research.

Chapter 2: Literature Review

This quantitative study addressed the relationships between three constructs of sales management control (outcome control, activity control, and capability control) and salesperson outcome performance. The second purpose of this study was to examine whether task complexity, product complexity, or number of accounts moderated the above relationships. In this chapter, I review existing studies on topics concerning management control and work performance in the context of business-to-business and business-to-consumer sales organizations. I present the theoretical background for management control, various proposed constructs for management control, as well as empirical studies examining how these psychological concepts impact a sales organization, particularly the extent of the relationship between sales management control and performance of an individual salesperson.

Literature Search Strategy

I queried multiple databases to identify the material for this literature review, including EBSCOHost, ProQuest Central electronic research databases, Emerald Research Journals, SAGE Journals, Academic Search Complete, Education Research Complete, and Business Source Complete. I used the search terms *sales management control*, *outcome control*, *activity control*, *capability control*, *marketing*, *salesperson outcome performance*, *task complexity*, *product complexity*, *leadership*, and *sales' professional*. Although database searches of the key words provided significant results, I found some of the most useful articles through reference lists of articles identified in the primary searches. I identified the initial articles via the aforementioned databases

associated with the Walden library; however, Google Scholar became my primary source for articles due to a change in the Walden library search parameters.

Theoretical Background

Organization Theory

Blau and Scott (1962) defined the term *organization* as a group of individuals working together in delineated roles to achieve a shared purpose. An organization is a means of consolidating the strengths of individuals within a group to achieve holistic accomplishments (Joshi & Randall, 2001). The establishment of a business organization stems from the belief that the delivery of goods and services is profitable at the end of the transaction (Jaworski, 1988).

Task characteristics and control systems are two basic principles in organization theory (Eisenhardt, 1985; Ouchi, 1979). In determining appropriate control, Eisenhardt's (1985) value-based framework requires the assessment of two environmental factors: (a) task programmability, and (b) outcome observability. Task programmability is the extent to which sales managers articulate the sales and nonsales activities that agents must perform to attain desired sales targets (Eisenhardt, 1985; Ouchi, 1977). According to Eisenhardt, a known task's programmability assists in the identification of appropriate behavior for positive performance. Behavior control is a rational choice when task programmability is high but outcome observability is low (Eisenhardt, 1985).

Eisenhardt (1985) associated a transformation process with that of task programmability because system outcome is a function of employees' behavior in the system. When there is high knowledge of the transformation process, explicit behavior

control mechanisms are defined for use by sales force leaders to standardize the selling and nonselling activities of the sales agents (Eisenhardt, 1985). Ouchi (1977) proposed that a decrease in knowledge of the transformation process affects the identification of the behaviors to be controlled. Therefore, if the transformation process is not clearly understood, managers will have difficulty identifying the appropriate behaviors to be monitored to evaluate the behavior and intentions of the sales agent (Eisenhardt, 1985).

In organization theory, control is determined either through behaviors or outcomes (Ouchi, 1977). Behavior control is a direct control mechanism that business leaders may impose (Ouchi, 1977, 1979). Ouchi's (1979) interpretation of organization theory suggested that managers disregard inequities of performance and generally assess actions of the sales agent that affect his or her outcome performance. However, behavior control requires personal surveillance that affects the length of control imposition (Eisenhardt, 1985). Outcome observability indicates the degree of sales outcomes (Ouchi, 1979). Outcome control is a proactive choice for sales leaders to consider when there is high outcome observability and low task programmability (Eisenhardt, 1985, Ouchi, 1979).

Agency Theory

Agency theory (Ross, 1973) is a value-based microeconomics accounting method for determining optimal, revenue-oriented forms of organizational control. Agency theory is used to explain the role of the principal, agent, and environmental uncertainty, and the resulting outcomes of the participation of all actors (Ross, 1973). Researchers have claimed that agency relationships emerge when work delegation from the principal to the agent occurs in exchange for compensation (Bergen, Dutta, & Walker, 1992; Eisenhardt,

1985; Ross, 1973). Ross (1973) proposed that the principal who possesses the decision-making authority to secure the optimum level of objective achievement would assert the control mechanisms. The fundamental principle of agency theory is that although the principal and agents aspire to accomplish organizational goals, both have opposing individual goals (Ross, 1973). For example, the principal in an insurance company would direct sales agents to focus on finding new accounts, whereas the interest of the sales agent would be to assist accountholders with current yet delinquent accounts.

Agency theory focuses on the resolution of potential conflicts that may arise between the principal and agents in agency relationships (Ross, 1973). The propositions of agency theory (Ross, 1973) include the resolutions of conflict (a) arising from the differences of principal and agents' goals and that these differences are unverified because of the inability to provide additional resources, and (b) arising from the differences of principal and agent perceptions and behaviors toward business risk. The differences existing between the principal and the agents could potentially hinder the development of the agency.

The concept of control in agency theory is based on either behavior or outcome (Eisenhardt, 1985). For instance, agents' observable behavior could be controlled by reinforcing desired behavior to achieve the principal's business advantage. Two environmental conditions are noted in agency theory: (a) conditions of complete information, and (b) conditions of incomplete information (Ross, 1973). Under agency theory, agents could opt to act in conflict with the goal of the principal without demonstrating observable behavior (Ross, 1973). Agents are most likely to act in ways

that conflict with the goals of the principal in conditions of high uncertainty and low programmability, in which available information is incomplete (Ross, 1973).

The second theoretical proposition of agency theory is that the principal (sales manager) can use outcome control to address uncertainties and transfer financial risk to the agents (salespeople) (Ross, 1973). Baiman (1982) believed that business outcomes are the results of agents' actions. Baiman claimed that outcomes may be positive or negative depending on the efforts invested by the salesperson. The actions of a salesperson could be penalized or rewarded depending on the resulting outcomes that are beyond the salesperson's control (Baiman, 1982). The selection of rewards or penalties depends on how behaviors and outcomes are measured and how the process transfers the risk to the agents (Baiman, 1982).

Transaction Cost Analysis

Transaction cost analysis theory of Williamson (1985) is an appropriate theoretical model in determining control mechanisms for a salesforce. In the context of this study, transaction cost was the cost of implementing, monitoring, and controlling the activities of sales agents. Certain circumstances warrant outcome-based control mechanisms (John & Weitz, 1989). Highly competitive markets demand outcome-based controls because of the perceived cost efficiency (John & Weitz, 1989). This means that the indicator or basis for control are the sales results generated by the sales agents, which determine sales performance and the efficiency of the agents engaged in the sales activities (John & Weitz, 1989).

Within transaction cost analysis, internal and external costs associated with business transactions are weighted and acted on (Williamson, 1985). According to

Williamson (1985), transaction costs are incurred in the process of delivering a good or service from one point to the other. Williamson also noted that the factors influencing transaction costs include (a) environmental uncertainty, (b) opportunism, (c) risks, (d) bounded rationality, and (e) essential organizational assets. These factors potentially contribute to the increase or decrease of transaction cost.

Theories of Sales Management and Control

Anderson and Oliver

Anderson and Oliver (1987) offered theoretical propositions to guide researchers in determining the consequences of the behavior and outcome-based salesforce control systems. Consolidating the findings from early management scholars (Walker, Churchill, & Ford, 1977; Weitz, 1979, 1981), Anderson and Oliver (1987) stated that although outcome control has been cited as a useful system in sales management, behavior control is more effective as a formal control system. Anderson and Oliver differentiated the two control systems in terms of the monitoring activities of the final process outcomes and the process in which the individual sales agent participates to produce those outcomes. Under the outcome-based control system, Anderson and Oliver proposed that to achieve positive performance, managers will (a) invest little monitoring time for sales agents, (b) provide little direction for sales agents, and (c) rely on verifiable measures of outcomes on the sale agents' approach. Conversely, a behavior-based control system requires (a) intensive time in monitoring the sales agents' activities and outcomes, (b) intensive direction and activity intervention from the sales managers, and (c) managers combining the approach of sales agents' selling knowledge, activities, and sales strategies in rewarding and penalizing the individuals (Anderson & Oliver, 1987).

Anderson and Oliver (1987) reviewed the literature on salesforce control systems to identify potential moderating variables to provide justification for the selection of an appropriate control system to affect sales performance. Anderson and Oliver incorporated the following dimensions in their theoretical framework: (a) control system strategies, (b) salesperson cognition and capabilities, (c) salespersons affect and attitude, (d) salesperson motivation, (e) salesperson behavioral strategies, and (f) salesperson's performance. Anderson and Oliver stated the first theoretical proposition as follows:

> In behavior-based control systems, salespeople are monitored closely, subject to considerable direction, evaluated on an input basis by subjective and more complex measures, and rewarded with higher proportion of fixed compensation. In outcome-based control systems, salespeople are monitored less frequently, offered little direction, evaluated on outcome measures by objective and simple methods, and rewarded with a higher portion of incentive compensation. (p. 85)

In this first proposition, Anderson and Oliver (1987) articulated that the demonstrated behaviors of sales agents form the basis for all performance interventions. Under this proposition, Anderson and Oliver compared commission-based sales agents and employed sales agents, in which employed sales agents received more professional development activities than their commission-based counterparts. Anderson and Oliver further identified their second proposition: "The more a control system is behavior-based rather than outcome-based, the more product knowledge, company knowledge, and integrated sales expertise the salesperson will have and the more professionally competent the salesperson will be" (p. 85).

In their third theoretical proposition, Anderson and Oliver (1987) claimed that the commitment of a sales agent is high in sales organizations that use a behavior-based control system. Values such as acceptance, cooperation, and receptivity to assessment from supervisors can be found in sales agents receiving behavior-based control strategies from their supervisors (Anderson & Oliver, 1987). As such, in their fourth proposition, Anderson and Oliver proposed that sales agent attrition is high in companies with outcome-based control systems. This proposition is further supported in Anderson and Oliver's fifth theoretical proposition: "The more a control system is behavior-based rather than outcome-based, the more the salesperson has higher levels of intrinsic motivation, is motivated by peer recognition, and is motivated to serve the sales agency" (p. 86).

Anderson and Oliver (1987) also proposed that although intrinsic motivation among employees is higher in sales organizations with behavior-based control systems as opposed to outcome-based control systems, individual agents differentiated their motivational needs depending on the approach their sales supervisors would implement. Therefore, the Anderson and Oliver's sixth proposition was: "The salesperson's hierarchy of motivation differs across outcome-based and behavior-based systems" (p. 86).

Anderson and Oliver (1987) further believed that a behavior-based control system generates more new account volume than that of the outcome-based control system. Anderson and Oliver linked supervisor's guidance, coaching, and providing of feedback to the abilities of sales agents to engage in more sales meetings and client prospecting. Anderson and Oliver (1987) proposed:

> The more a control system is behavior-based rather than outcome-based, the more a salesperson can be expected to plan for each call, make fewer calls, operate at a lower ratio of selling to non-selling time, and spend more time on sales support activities. Further, salespeople are more likely to use an "expertise sell" and "open" rather than "closed" techniques in behavior-based systems and to use "customer-oriented" strategies (p. 86).

The final theoretical proposition of Anderson and Oliver (1987) predicted that although behavior-based control systems influence sales agents' commitment to the organization and encourage sales agent interest in selling activities, the outcome-based control system remains significantly important for the organizations to meet sales quota. Anderson and Oliver stated this proposition as: "In control systems that are more behavior-based than outcome-based, individual salespeople will come closer to achieving the sales agency's goals and to serving customer needs, but will perform more poorly on traditional output measures of individual-level performance" (p 86).

Anderson and Oliver (1987) were clear in favoring behavior-based rather than outcome-based control in managing sales relationships with salespeople. Anderson and Oliver undermined outcome-based control as a formal measure in the performance of the salesperson in the organization. The authors' propositions implied that the sales performance of a salesperson depends on their intrinsic motivation and commitment in the product they sell rather than the compensation they could receive from the sale of the product (Anderson & Oliver, 1987). Although they indicated a preference for behavior-based control, Anderson and Oliver acknowledged that both behavior and outcome-based control systems are important to sales performance.

Related Empirical Studies

This section includes empirical studies using four separate measurement scales based upon the Anderson and Oliver (1987) management control conceptualization (Babakus et al., 1996; Cravens, et al., 1993; Oliver & Anderson, 1994; Robertson & Anderson, 1993). The four measurement scales were vastly different and likely contributed to the wide range of findings, many of which were conflicting.

Cravens et al. (1993) developed the first scale to measure management control aligned with the Anderson and Oliver (1987) conceptualization. This scale had only two items designed to measure extent of monitoring of salesforce activities and amount of direction provided by the manager concerning salesperson activities (Cravens, et al., 1993). In this study of chief executive officers in a combination of business-to-business and business-to-consumer sales organizations, Cravens et al found an indirect relationship between behavior-based sales management control and salesperson outcome performance via salesperson behavior performance and salesperson characteristics. This finding supports the Anderson and Oliver proposition that behavior-based management control will positively impact seller behavior, but not seller outcomes. This was the only study that used the Cravens et al. measurement scale to examine the impact of sales management control on salesperson performance.

The second measurement scale to examine the Anderson and Oliver (1987) management control conceptualization was developed by Robertson and Anderson (1993). This scale included three categories with two items each to measure extent of supervision, contact with manager, and subjectivity of evaluation (Robertson & Anderson, 1993) bearing no apparent overlap with the scale developed by Cravens et al.

(1993). Robertson and Anderson were the only researchers to use this scale in an empirical study. In a study of salespeople and sales managers in a business-to-business sales context, Robertson and Anderson examined the relationship between behavior-based management control and salesperson ethical reactions. A characteristic of interest in this study was whether sellers pursued a few large sales or many smaller ones (Robertson & Anderson, 1993). The researchers found that salespeople within a behavior-based management control system were less likely to make unethical recommendations to customers than their counterparts operating in a more outcome-based control system (Robertson & Anderson, 1993). Sales managers and salespeople were more likely to take ethical shortcuts when sales were larger (Robertson & Anderson, 1993). The relationship between sales management control and salesperson performance was not examined in this study (Robertson & Anderson, 1993).

The third scale developed to measure the Anderson and Oliver (1987) conceptualization of management control was developed by Oliver and Anderson (1994). This scale included eight items to measure extent of supervision, four items to measure absence of a bottom-line orientation, three items to measure infrequent use of objective outcomes, three items to measure use of paper inputs, three items to measure use of subjective inputs, and two items to measure the percentage of salary in the seller's compensation plan (Oliver & Anderson, 1994). Six studies included the use of this scale to measure the degree of behavior-based management control in use. Three of these six studies examined the relationship between behavior-based management control and associated salesperson characteristics (Matuso, 2009; Mullins, Ahearne, Lam, Hall & Boichuk, 2014; Rouzies & Macquin, 2003).

Rouzies and Macquin (2003) studied the relationship between behavior-based management control, smart selling strategies, and level of seller contact in customer organizations with a sample of salespeople in a combination of business-to-business and business to-consumer sales organizations. Behavior-based management control was positively and statistically significantly related to both smart selling strategies and high levels of contact in customer organizations (Rouzies & Macquin, 2003). This positive relationship between behavior-based management control and salesperson characteristics was similar to the findings of Matuso (2009) who found that salespeople operating under a behavior-based management controls system were significantly more likely to innovate. Additional support for the hypothesized positive relationship between behavior-based management control and salesperson characteristics was provided by Mullins et al. (2014) who found that the use of behavior-based management control reduced the level of seller bias related to customer relationship quality. The measurement scale developed by Oliver and Anderson (1994) was also used to examine the relationship between behavior-based management control and salesperson performance, although the findings were inconsistent. In their study of salespeople operating as manufacturer's representatives, Oliver and Anderson (1994) found that behavior-based management control was significantly and positively related to salesperson capabilities and motivational states, but unrelated to salesperson performance outcomes. These findings supported the proposed link between behavior-based management control and salesperson behavior proposed by Anderson and Oliver (1987); however, they conflicted with Anderson and Oliver's (1987) proposition that the use of behavior-based management control would impede salesperson performance outcomes. In contrast to the

findings of Matuso (2009), two studies using these same scales found an indirect relationship between behavior-based management control and salesperson performance (Ahearne, Hughes, & Jindal, 2010; Panagopoulos, & Mothersbaugh, 2015); however, their findings were inconsistent.

Ahearne et al. (2010) examined the relationship between behavior-based management control and new product sales and found that sellers in a behavior-based control system produced a less-successful shift of customer product perceptions, adversely affecting new product sales. Those sellers operating within an outcome-based control system produced a significant increase in customer product perceptions, positively impacting new product sales (Ahearne et al., 2010). This finding supports Anderson and Oliver's (1987) proposition that behavior-based management control will likely lead to reduced seller outcome performance. In a study of senior executives in business-to-business sales organizations, Panagopoulos et al. (2015) found behavior-based management control had a significant and positive effect on salesperson behavior performance, but no effect on salesperson outcome performance. The researchers found a positive indirect relationship between behavior-based management control and salesperson outcome performance via salesperson behavior performance (Panagopoulos et al., 2015). In this study, Panagopoulos et al. evaluated the validity and reliability of the management control scale developed by Oliver and Anderson (1994) and eliminated five items due to poor item properties.

In the five studies that included the Oliver and Anderson (1994) measurement scales, none of the researchers reported a direct relationship between behavior-based management control and salesperson outcome performance. Researchers identified that

behavior-based management control was unrelated to salesperson performance (Oliver & Anderson, 1994), positively and indirectly related to salesperson performance (Panagopoulos, et al., 2015), and negatively and indirectly related to seller performance (Ahearne et al., 2010). Although few studies were conducted using the Oliver and Anderson (1994) scales, the inconsistent results of empirical studies using the Anderson and Oliver (1987) conceptualization of management control were repeated with the most widely used scales developed by Babakus et al. (1996).

Babakus et al. (1996) developed the fourth and final scale to date used to measure behavior-based management control aligned to the Anderson and Oliver (1994) conceptualization. This scale was by far the most comprehensive of the four and included seven items to measure monitoring, five items to measure directing, five items to measure evaluation, and eight items to measure level of reward (Babakus et al., 1996). Fifteen studies included the use of the Babakus et al. scales to measure behavior-based management control. Of these fifteen studies, some researchers found that behavior-based management control was unrelated to salesperson outcome performance (Baldauf, Cravens, & Piercy, 2001; Katsikea, Theodosiou & Morgan, 2007), indirectly related to outcome performance (Babakus et al., 1996; Baldauf, Cravens, & Grant, 2002; Longino, 2007; Theodosiou & Katsikea, 2007), and directly related to outcome performance (Piercy et al., 1999; Piercy, Cravens, & Lane, 2009, 2012) In a study of sales managers in a combination of business-to-business and business-to-consumer sales, Baldauf et al. (2001) found a significant and positive relationship between behavior-based management control and salesperson behavior performance, but not salesperson outcome performance. The researchers used only a subset of the Babakus et al. (1996) scale items in their study.

Katsikea et al. (2007) studied export sales managers in business-to-business sales organizations and found that behavior-based management control was unrelated to either sales person behavior performance or outcome performance. This study by Katsikea et al. included only a subset of the Babakus et al. management control scale. In a related study of export sales managers, Theodosiou and Katsikea (2007) found a significant and positive relationship between behavior-based management control and salesperson behavior performance, and between salesperson behavior performance and salesperson outcome performance. The study by Theodosiou and Katsikea included the full scale of the Babakus et al. measurement scale which could be a factor in the difference between this study and the findings of Katsikea et al. (2007). Menguc and Tansu Barker (2003) also identified an indirect relationship between behavior-based management control and salesperson volume via complexity of the customer's purchase decision. At high levels of purchase complexity, the relationship between behavior-based management control and sales volume was positive and significant. Longino (2007) replicated these findings in his study of salespeople in business-to-business sales and found a positive and significant relationship between behavior-based management control and salesperson behavior performance, and between salesperson behavior performance and salesperson outcome performance.

In two separate studies of sales managers in business-to-business sales organizations, Piercy, Cravens, and Morgan (1997, 1998) found that when behavior-based management control was present, sellers had high levels of both behavior and outcome performance. Although both conditions of high behavior control and high salesperson performance were present, the researchers did not identify a causal

relationship between the constructs (Piercy et al., 1997, 1998). These findings were similar to a study by Grant and Cravens (1996) in which the researchers divided the sellers into low and high performing groups on measures of behavior and outcome performance. The high behavior performance group also had higher outcome performance than the low behavior performance group (Grant & Cravens, 1996). In a study of sales managers in business-to-business sales, Piercy, et al. (1999) found that the behavior-based management control elements of directing, evaluating, and rewarding showed significant positive effects on salesperson behavior performance, and between salesperson behavior performance and outcome performance. This study was different from the prior two studies (Piercy et al., 1997, 1998) in that the Piercy et al. (1999) also identified a significant and positive direct effect of behavior-based management control on salesperson outcome performance.

In addition to the direct and indirect effects of sales management control on salesperson performance, Piercy, Cravens and Lane (2001) examined gender differences relative to sales management control and the consequences in salesperson outcomes. Piercy et al. found that female sales managers employed higher levels of behavior-based management control than their male counterparts, but no differences in outcome performance were identified based on gender. In a separate study, Piercy, Cravens, and Lane (2003) found that teams led by female sales managers had a lower propensity to leave compared to teams led by male sales managers; however, the teams led by female manages had lower outcome performance than teams led by male sales managers. This finding conflicted with Piercy et al.'s (2001) findings that indicated no difference in outcome performance between teams led by male or female managers. One possible

reason for the difference in findings may be due to the populations studied. The study by Piercy et al. (2001) involved a salesperson sample and the study by Piercy et al. (2003) involved a sales management sample. Both studies used a subset of the management control scales developed by Babakus et al. (1996).

Piercy and associates conducted two separate studies examining the relationship between sales management control and salesperson performance (Piercy et al., 2009, 2012). Both studies (Piercy et al., 2009, 2012) included sales managers from business-to-business sales organizations and employed the full measurement scale developed by Babakus et al. (1996). The authors of these two studies expanded the scope of the relationship between behavior-based management control and salesperson performance by examining not only the degree to which managers employed management control strategies, but also in the manager's perception of their effectiveness in implementing these strategies (Piercy et al., 2009, 2012). Piercy et al. (2009, 2012) found a significant positive relationship between behavior-based management control and salesperson behavior and outcome performance. The direct effect of behavior-based management control on both salesperson behavior and outcome performance were consistent with the findings of Piercy, Cravens, and Morgan (1997, 1999); however, the outcome of these later studies (Piercy et al., 2009, 2012) included evidence of a causal relationship. The measure of salesperson performance in the Piercy et al. (2009, 2012) studies was a combined measure that included both behavior and outcome performance in one measurement scale, which may have contributed to the finding of a direct relationship between behavior-based management control and salesperson performance.

Although the majority of studies using the Babakus et al. (1996) measurement scales involved the relationship between behavior-based management control and salesperson performance, other studies addressed sales situation characteristics other than performance outcomes (Krafft, 1999). In a study of chief executive officers from a combination of business-to-business and business-to-consumer sales organizations, Krafft (1999) examined the relationship between uncertainty and the use of behavior-based management control. Krafft used number of accounts as a proxy for level of uncertainty and claimed that a high number of accounts equated to a low level of uncertainty. Krafft found that uncertainty (low number of accounts) had a positive and significant effect on the use of behavior control. Krafft did not examine the relationship between behavior-based management control and salesperson performance. In summary, researchers have employed a variety of different measurement scales (Babakus et al., 1996; Cravens et al., 1993; Oliver & Anderson, 1994; Robertson & Anderson, 1993) to examine the relationship between behavior-based management control and salesperson performance to test the propositions put forth by Anderson and Oliver (1987). Studies included sales managers (Baldauf & Cravens, 1999; Matuso, 2009), salespeople (Piercy et al., 2003), and chief executive officers (Babakus et al., 1996). The varied findings related to the Anderson and Oliver (1987) conceptualization of management control and associated sales performance may be due to the diversity of measurement scales used as well as the populations studied.

Jaworski

Jaworski (1988) introduced a theory of management control that includes environmental context, controls, and consequences. Environmental context describes the

general situational circumstances of the marketing unit. According to Jaworski, these environmental variables influence the types of controls that are emphasized and moderate the relationships between control types and psychological, behavioral, or performance outcomes. Environmental context is divided into three primary areas: the macro environment, the operating environment, and the internal environment. The macro environment is the national and global context of social, political, and economic conditions (Jaworski, 1988). The operating environment is the set of suppliers, customers, and other groups with which the firm deals directly. The internal environment consists of elements controlled within the firm (Jaworski, 1988).

Jaworski (1988) identified formal and informal controls as two broad classes used within organizations. Formal controls are written, management-initiated mechanisms that increase the probability that marketing employees will behave in ways that support stated marketing objectives (Jaworski, 1988). Formal controls are divided into three control mechanisms, distinguishable based on the timing of a manager's intervention (Jaworski, 1988). Input control is defined as a measurable action taken by a firm prior to the implementation of an activity (Jaworski, 1988). Typical input controls include selection criteria, training programs, and marketing plans (Jaworski, 1988). Process control focuses on the behavior used rather than end results (Jaworski, 1988). Standard operating procedure within a firm is an example of process control (Jaworski, 1988). In a situation of complete process control, a salesperson may be asked to follow specific procedures for new account acquisition, but will not be held accountable for the extent of new business development (Jaworski, 1988). Output controls are performance standards that are measured as end results, such as quota or revenue targets (Jaworski, 1988). In a situation

of complete output control, an organization does not need to know means-ends relationships and delegates this knowledge to the salesperson (Jaworski, 1988). For example, a case of complete output control would occur when a manager notifies a seller to improve sales volume without specifying the process to accomplish the increase in volume (Jaworski, 1988). Informal controls are divided into three types based on level of aggregation of the control such as self, small group, or large social units (Jaworski, 1988).

Jaworski's (1988) conceptualization of formal process and output control is relatively similar to Anderson and Oliver's (1987) conceptualization of behavior and outcome-based control systems. Jaworski and Anderson and Oliver proposed that process control (as in the case of Jaworski) and behavior-based control (in the case of Anderson and Oliverare unmeasurable, if not difficult to measure. The use of both process controls (Jaworski) and behavior-based controls (Anderson & Oliver) rely on the assessment of the sales supervisor, which requires control over his or her biases.

Jaworksi (1988) proposed that when a connection exists between the environmental context and the control system in use, managerial performance will be higher than it would be in a non-fit situation. Jaworski suggested that for more highly programmable tasks, a formal control system is most effective. Conversely, for more variable, less programmable tasks, an informal system is most effective (Jaworski, 1988). Jaworski's conceptualization of formal control as input, process, and output control can be aligned to some degree to behavior and outcome control suggested by Ouchi (1979) and Anderson and Oliver (1987). Jaworski's concept of process control is conceptually similar to Ouchi and Anderson and Oliver's concept of behavior control. Output control

is similarly defined by Jaworksi, Ouchi , and Anderson and Oliver as the setting of performance standards.

Jaworski Empirical Studies

The most commonly used scales used to measure sales management control within the Jaworski (1988) framework were developed by Jaworksi and MacInnis (1989). These measurement scales include items to measure output control, process control, professional control, and cultural control (Jaworski & MacInnis, 1989). The most widely used of the four scales were those designed to measure output and process control (Baldauf, et al., 2005). The output control scale consists of five items that measure the extent to which managers focuses on end results (Jaworski & MacInnis, 1989). The process control scale consists of four items that measure the degree to which managers focus on the procedures employees follow to achieve end results (Jaworski & MacInnis, 1989). Because the majority of the studies aligned to the Jaworski (1988) conceptualization use the measurement scales developed by Jaworski and MacInnis (1989), I have chosen to organize the review of these studies by both the nature of the constructs examined and the types of populations studied. The first group of studies involve the relationship between sales management control and consequences other than salesperson performance.

Empirical studies unrelated to sales performance. Jaworksi and MacInnis (1989) conducted a study of senior marketing executives to determine the degree to which marketing personnel task characteristics impacted the use of output and process controls, as well as the impact controls had on job tension and information asymmetry. This was the first study that aligned with the Jaworski (1988) conceptualization. In this

study, Jaworski and MacInnis (1989) developed and validated the scales used in the majority of studies reviewed in this section.

Jaworski and MacInnis (1989) examined the degree of procedural knowledge and process documentation within an organization. Procedural knowledge relates to the knowledge of the transformation process (Eisenhardt, 1985) as well as knowledge of means-ends relationships (Ouchi, 1979), both key elements of organization theory. Jaworski and MacInnis found a significant positive relationship between procedural knowledge and the use of process controls. Procedural knowledge was unrelated to output controls (Jaworski & MacInnis, 1989). This finding supports Ouchi's (1979) proposition that organizations must have knowledge of means-ends relationships to control the behavior of marketing employees. Performance documentation represents the degree to which marketing leaders have available forms of documentation to assess a marketing employee's performance (Ouchi, 1979). Jaworski and MacInnis found that performance documentation was positively and significantly related to the use of output controls. Both output and process controls significantly reduced information asymmetry (Jaworski & MacInnis, 1989). Information asymmetry occurs when employees have information that supervisors do not, which may be used opportunistically (Williams, 1975).

The findings of the Jaworski and MacInnis (1989) study were in direct contrast with the findings of Ramaswami (1996). In a study of various marketing personnel (product managers and marketing research analysts) and sales personnel (sales people and sales managers), Ramaswami examined the degree to which the task characteristics of procedural knowledge and performance documentation impacted the relationship

between process and output controls and dysfunctional employee behaviors. Contrary to the findings of Jaworksi and MacInnis, Ramaswami found that output and process controls significantly increased dysfunctional behavior: Output controls contributed to falsification of information and process controls contributed to reduced feelings of autonomy and increased defensiveness. The existence of performance documentation did not reduce the effect of output controls on dysfunctional behavior; however, the use of process controls was associated with reduced dysfunctional behavior when procedural knowledge was high versus when it was low (Ramaswami, 1996). In a separate study, Agarwal (1999) examined the impact of job formalization and administrative controls on the attitudes of business-to-business salespeople. Agarwal examined the degree to which process and output controls moderated the relationships between job formalization, role ambiguity, and organizational commitment. Job formalization was defined as the level of job codification and rule observation and role ambiguity was defined as the degree of uncertainty about one's job. Agarwal found a significant relationship between formalization, increased role ambiguity, and reduced organizational commitment. Output control moderated the impact of formalization, reducing the negative impact of formalization on role ambiguity and organizational commitment. Agarwal's findings about the moderating influence of output control on dysfunctional behavior were in contrast with Ramawami's (1996) finding that process controls, rather than output controls reduced dysfunctional behaviors in conditions of high procedural knowledge. Formalization is a similar construct to procedural knowledge and involves knowledge of means-ends relationships (Ouchi, 1979). The relationship between management controls and dysfunctional behavior was examined again by Ramawami (2002). Similar to the

findings of Agarwal (1999), Ramaswami found that output control was associated with reduced role ambiguity. Similar to the findings of Jaworksi and MacInnis (1989), Ramaswami found that availability of performance documentation was associated with output control, and output control reduced information asymmetry. Output control was also associated with increased opportunistic behavior, providing further evidence of Ramaswami's (1996) earlier findings regarding the link between output control and falsification of information.

Although the above studies included similar constructs and measures of management control (Jaworksi & MacInnis, 1989), the population's studied were quite different (marketing executives, marketing analysts, sales people, sales managers). This variation in populations studied may have contributed to ambiguity in findings regarding the relationship of management control, task characteristics, and dysfunctional behavior.

Empirical studies related to job performance in business-to-consumer sales. The sales environment and associated sales tasks are markedly different between business-to-business industrial selling and business-to-consumer retail selling (Challagalla & Shervani, 1996). This first set of empirical studies that linked management control to sales performance involved a business-to-consumer sales environment. Of the three studies conducted in the business-to-consumer environment, one study resulted in an indirect effect of sales management control on salesperson performance (Joshi & Randall, 2001), one study resulted in a direct effect (Jaworski & Kohli, 1991), and one study resulted in no effect (Lusch & Jaworski, 1991). The measurement scales of salesperson performance in the studies with indirect (Joshi & Randall) and direct effects (Jaworski & Kohli) of management control on salesperson

performance were developed by Behrman and Perreault (1982). The study that resulted in no effect of management control on performance involved items unrelated to output, but more closely aligned to behavior performance (Lusch & Jaworski). In addition to the differences in measurement scales, the researchers studied different populations. In the two studies that addressed the relationship between management control and seller performance (Jaworski & Kohli, 1991; Joshi & Randall, 2001), the researchers studied business-to-consumer salespeople. In the one study where no effect between management control and performance was found, the researchers studied store managers (Lusch & Jaworski).

Jaworski and Kohli (1991) conducted a study of retail automobile salespeople to determine the degree to which output and process feedback and role clarity impacted both satisfaction with supervisor and sales outcome performance. In this study, Jaworski and Kohli reworded the original items developed by Jaworski and MacInnis (1989) to reflect output and behavioral (process) feedback as both positive and negative. Positive output feedback had a significant positive effect on salesperson outcome performance (Jaworksi & Kohli, 1991). Positive output and behavioral feedback had a statistically significant positive effect on satisfaction with supervisor (Jaworski & Kohli). Negative output and behavioral feedback had no effect on either outcome performance or satisfaction with supervisor. Behavioral feedback was motivational, positively impacting satisfaction with supervisor, but did not impact seller performance. Joshi and Randall (1991) conducted a study of independent salespeople in business-to-consumer cosmetic sales to examine the relationships between process and output controls, task clarity, affective commitment, customer orientation, and salesperson outcome performance. The measurement scales for

process and output control were developed by Jaworski and MacInnis (1989) and the measure of salesperson outcome performance was developed by Behrman and Perreault (1982). Both process and output controls had statistically significant and positive effects on task clarity, although output control had the strongest effect (Joshi & Randall, 1991). Task clarity was related statistically significantly and positively to salesperson outcome performance, but unrelated to customer orientation. Both output and process controls had a statistically significant and positive effect on affective commitment, and affective commitment had a statistically significant and positive effect on both salesperson outcome performance and customer orientation. This study provides directional evidence for the Jaworksi and Kohli's (1991) findings of a positive relationship between output control and salesperson performance; however, in this study, Joshi and Randall also found a positive indirect relationship between process control and salesperson outcome performance via task clarity, which differed from the lack of relationship between process control and salesperson outcome performance in the Jaworski and Kohli (1991) study.

Lusch and Jaworski (2001) studied store managers in a business-to-consumer retail setting to determine the relationship between management control, role stress, and manager performance. Although the scales used to measure management control were similar to those in the studies by Jaworski and Kohli (1999) and Joshi and Randall (2001), the measure of performance was remarkably different. Lusch and Jaworksi used a measure of store manager performance that more closely related to manager behavior than to outcome performance. Lusch and Jaworksi found that output control did not reduce role stress and role stress had a statistically significant negative effect on store

manager performance. Output control did not impact store manager performance, which was contrary to expectations and contradictory to the findings of Jaworski and Kohli (1991) who found a direct effect, and Joshi and Randall (1999) who found an indirect effect. In summary, although the three studies reviewed all reflected a business-to-consumer sales environment, the populations studied varied (managers, retail sellers, independent sellers), and the instruments used to measure performance varied (salesperson outcome performance, store manager behavior performance).

Empirical studies related to sales performance in business-to-business sales. Although many empirical studies were conducted to examine the relationship between sales management control and salesperson performance in the business-to-business sales environment, researchers reported conflicting findings similar to studies conducted in the business-to-consumer environment. Researchers identified direct relationships between management control and salesperson performance (Bello & Gilliland, 1997; Cravens, Lassk, Low, Marshall, & Moncrief, 2004; Flaherty et al., 2007; Jaworski, Stathakopoulos, & Krishnan, 1993), indirect relationships between management control and salesperson performance (Atuahene-Gima & Li, 2002), and a negative relationship between management control and salesperson performance (Aulakh & Gencturk, 2000).

In a study of sales executives from United States companies with international internal and external sales agents, Aulakh and Gencturk (2000) examined the relationships between process and output controls, governance, agent compliance, and agent economic performance. The scales used to measure process and output controls were developed by Jaworksi and MacInnis (1989) and reworded to match the distributor environment. Aulakh and Gencturk found a significant negative effect of output control

on agent compliance in cases of external governance as compared to internal governance. The researchers identified a significant negative effect of output control on agent economic performance for external agents, but not for internal agents. Aulakh and Gencturk's found a negative effect of output control on agent economic performance for external agents, and lack of effect of output control on economic performance for internal agents is in direct contrast to other studies (Bello & Gilliland, 1997; Joshi & Randall, 2001) whose authors identified a significant positive effect of output control on salesperson outcome performance. Process control was unrelated to economic performance for both internal and external agents, similar to the findings of Atuahene-Gima and Li (2002).

In contrast to the negative effect of output control reported by Aulakh and Gencturk (2000), Atuahene-Gima and Li (2002) found an indirect effect of output control on salesperson performance via the relationship between product complexity and employee trust in their study of salespeople in the United States and China. The measurement scales Atuahene-Gima and Li used to measure process and output controls were developed by Jaworski and MacInnis (1989) and the product complexity scale was developed by Anderson (1995). Anderson's product complexity scale measured product sophistication, technical nature, and engineering content from the seller's perspective. Atuahene-Gima and Li found that output control was unrelated to supervisee trust for either the United States or Chinese populations; however, the effect of process control on supervisee trust was positive and significant for the Chinese sample only. Product complexity had a positive and significant effect on supervisee trust for both samples. Supervisee trust enhanced sales performance when output control was high in the

Chinese sample, but not in the United States sample, indicating an indirect relationship between outcome control and salesperson performance for the Chinese sample. This indirect positive relationship between output control and salesperson performance is in direct contrast with the findings of Jaworksi et al., (1993) who found a significant and positive direct effect of output control on salesperson performance.

In a study of marketing and sales executives, Jaworski, Stathakopoulos, and Krishnan (1993) examined the relationship between sales management control, task complexity, role ambiguity, person-role conflict, and job performance. It is important to note that task complexity in this study (Jawroski et al., 1993) was defined as the extent of predictability and variety in the activities to be performed by a given position within a business unit. This conceptualization of task complexity was different than the measure of task complexity developed by John and Weitz (1989) which measured the nature of the purchase decision from the buyer's perspective. The measure of performance Jaworski et al.'s study reflected quality and completion of work, as compared to quantitative salesperson outcomes reflected in the scale developed by Behrman and Perreault (1982). Jaworksi et al. found that output control had a positive significant effect on job satisfaction and process control had no effect on job satisfaction. Output control reduced role ambiguity and person-role conflict, whereas process control increased person-role conflict, and had no effect on role ambiguity. These findings regarding the negative relationship between output control and both role ambiguity and person-role conflict are consistent with the findings of Agarwal (1999) and Ramaswami (2002). Jaworksi et al. found that output control had a statistically significant and positive effect on job performance.

Bello and Gilliland (1997) reported a similar positive effect on output control on performance; however, the measure of performance in their study included quantitative measures of sales profit, growth, and achievement of economic goals. In their study of manufacturing companies that exported products through foreign distributors, Bello and Gilliland examined the relationships between product complexity, process and output control, psychic distance, and channel sales performance. The scale used to measure product complexity in this study was developed by Anderson (1995) and measured product sophistication, technical nature, and engineering content from the seller's perspective, which differed from the scale developed by Slater and Olson (2000), which measured the degree of difficulty a buyer may experience in understanding the seller's product. Bello and Gilliland found that the use of process control failed to influence channel performance; however, output control had a positive and significant effect on channel performance. This finding is similar to the positive relationship between output control and job performance reported by Jaworski et al. (1993). Product complexity had a significant positive effect on the use of process and output controls, whereas psychic distance, due to cultural or language differences, significantly impeded the use of output controls.

The positive relationship between output control and performance (Bello & Gilliland, 1997) was consistent with the findings of Cravens, Lassk, Low, Marshall, and Moncrief (2004) in their study of salespeople. Cravens et al. (2004) found a positive significant effect of high management control on salesperson performance. A complicating factor in the Cravens et al. study was the way in which they examined management control. In their study, Cravens et al. used the Jaworksi and MacInnis

(1989) measurement scales; however, they evaluated process and output controls together as either both high output and high process, or both low output and low process control. For purposes of analysis, Cravens et al. did not separate process control and output control as separate measures allowing them to vary in opposite directions. An additional complication in comparing Craven et al.'s study to the Jaworski et al. (1993) study was the measure of performance. In the original performance scale developed by Behrman and Perreault (1982), salesperson outcome performance and other elements of performance such as making sales presentations were separate scales. Cravens et al. combined all of the Behrman and Perreault (1982) scales to produce a single performance scale. The measure of salesperson outcome performance within the Behrman and Perreault measurement scales used by Cravens et al. is similar to that quantitative measure used by Bello and Gilliland (1999), providing further evidence of the positive effect of management control on salesperson performance. Although directionally similar to the findings of Jaworski et al. (1993) regarding the positive effect of controls on performance, the measures of performance in the Cravens et al. study included quantitative outcome measures, whereas the performance measures used by Jaworski et al. (1993) were qualitative in nature.

Flaherty et al.(2007) replicated the findings of Jaworski et al. (1993), Bello and Gilliland (1997), and Cravens et al (2004) regarding the positive effect of management controls on salesperson outcome performance; however, the positive effect was not found for all sales situations. In their study of salespeople, Flaherty et al. examined the relationship between sales management control, product complexity, and sales performance. Flaherty et al. divided their sales population into different clusters based on

situational characteristics of the sales positions. The approach to this study was unique because the authors identified three clusters of sales situation elements and then examined the relationship between sales management controls and sales performance across the different clusters. Flaherty et al. used this clustering approach because they proposed that no single set of sales activities were effective for all salespeople, therefore no one type of control should be considered superior to another. The authors identified three separate sales situational clusters representing different degrees of product complexity. The sink or swim transactional cluster was characterized by low experience and high product complexity, the tried but true relationship builder was characterized by high experience and low product complexity, and the fixed but stable account manager was characterized by moderate experience and moderate product complexity. Whereas findings from other studies indicated a significant positive effect of output control on salesperson performance (Bello & Gilliland, 1997; Cravens et al., 2004), Flaherty et al. found this positive effect only for the sink or swim transactional cluster characterized by high product complexity. Flaherty et al. found no significant correlation between output control and sales performance for the tried but true relationship builders or the fixed but stable account managers where product complexity was either low or moderate. Contrary to prior studies where researchers found no relationship between process control and sales performance (Bello & Gilliland, 1997), Flaherty et al. found a significant positive effect of process control on sales performance for sellers in the sink or swim transactional cluster characterized by high product complexity, as well as in the tried and true relationship builder cluster characterized by low product complexity. This finding is hard to interpret and may be due to situational factors other than product complexity not

examined in Flaherty et al.'s study. Neither output or process controls had a significant effect on salesperson performance for the fixed but stable account managers characterized by moderate product complexity. Both output and process controls had the most significant effect on salesperson performance in the sink or swim transactional cluster characterized by high product complexity.

Panagopoulos et al. (2015) replicated the statistically significant and positive effect of output control on salesperson outcome performance in their study of sales managers. The first part of their study involved an examination of the construct validity of both the Oliver and Anderson (1994) management control scales and the Jaworski and MacInnis (1989) management control scales. Several of the items from the Oliver and Anderson (1994) scale were eliminated due to poor item properties and excluded from the final analysis. Panagopoulos et al. compared the two scales and found the Oliver and Anderson scale related equally well to both the process and output control scales of Jaworski and MacInnis, making it difficult for the researchers to determine whether the Oliver and Anderson scale was a measure of process or output control. A major finding Panagopoulos et al. reported in this study was that the size and nature of the effect of sales controls on salesperson performance differed depending upon the conceptualization and associated scales used. For the Jaworski and MacInnis scales, the direct effect of outcome control on sales performance was liner, statistically significant, and positive. In contrast, Panagopoulus et al. found that the Oliver and Anderson index exerted a significant negative direct effect on performance. Similar to the findings of Bello and Gilliland (1997), process control (Jaworski & MacInnis, 1989) had no effect on salesperson performance. This study and associated analyses by Panagopoulos et al. may

help explain some of the ambiguous results of prior studies of the management control-sales performance relationship.

Challagalla and Shervani

Challagalla and Shervani (1996) cited conflicting evidence in the control research regarding the impact of behavioral control on salesperson outcome performance due to a restrictive perspective on the types of behavior controls used. Oliver and Anderson (1994) found that behavior control was negatively related to end performance, and Jaworskiet al. (1993) found behavioral control to be unrelated to end performance. Because of these conflicting findings, Challagalla and Shervani disaggregated the global construct of behavioral control into activity control and capability control. Challagalla and Shervai defined activity control as the specification of the activities a salesperson is expected to perform on a regular basis, and capability control as the development of individual salesperson skills and abilities. Implementing activity control requires supervisors to monitor salespeople frequently, and is therefore expected to increase communication. Implementing capability control requires supervisors to commit time and effort to assessing the capabilities of each salesperson to provide guidance for improvement. Challagalla and Shervani suggested that activity and capability control have different effects on salesperson performance. Challagalla and Shervani developed measurement scales to identify the extent to which information was provided, rewards were offered, and punishment was applied for capability, activity, and output controls. Challagalla and Shervani's scales included four items each for output information, rewards, and punishments, five items for activity information, and three items each for activity rewards and punishments, five items for capability information, and three items

each for capability rewards and punishments. The information component of each of the control scales (output, activity, capability) were based on the management control scales for output and process control developed by Jaworski and MacInnis (1989). All empirical studies reviewed in the following section include the information elements only of the Challagalla and Shervani scales for output, capability, and activity control.

Empirical studies related to sales performance. Empirical studies of the relationship between sales management control and salesperson performance using the scales developed by Challagalla and Shervani (1996) have resulted in a direct effect (Evans et al., 2007; Miao, Evans, & Shaoming, 2007), indirect effect (Challagalla & Shervani, 1996; Fang, Evans, & Zou, 2005; Kohli, Shervani, & Challagalla, 1998), and no effect (Challagalla, Shervani, & Huber, 2000). In addition to the sales management control-salesperson performance relationship, researchers have also studied the relationship between sales management control and dysfunctional behaviors (Choi, Dixon, & Jung, 2004; Wang, Dou, & Zhou, 2012).

In a study of salespeople in business-to-business sales, Evans et al., (2007) examined the mediating effects of customer orientation, sales supportiveness, and innovation on the management control-sales performance relationship. The scales used to measure output and process control were developed by Jaworski and MacInnis (1989). The process control items in this study were 4 of the 5 items used by Challagalla and Shervani (1996) to measure activity control. The capability control items were developed by Challagalla and Shervani (1996). The scale used to measure salesperson outcome performance was developed by Behrman and Perreault (1982).

Evans et al. (2007) found a positive significant relationship between output control and salesperson outcome performance. Outcome control had a positive significant effect on sales supportiveness and sales innovation. Activity control had a positive and significant effect on organizational customer orientation, but was unrelated to either sales supportiveness or sales innovation. Capability control had positive significant effects on customer orientation, sales supportiveness, and sales innovation. Sales innovativeness and sales supportiveness both had positive and significant effects on job satisfaction, supporting Evans et al.'s hypotheses regarding a mediating effect of sales innovativeness and sales supportiveness on the capability control-satisfaction relationship and the outcome control-satisfaction relationship. Organization customer orientation was unrelated to either job satisfaction or performance, failing to support Evans et al.'s hypothesis regarding a mediating role of organization customer orientation on the control-performance, or control-satisfaction relationships. In summary, Evans et al. found a significant positive relationship between outcome control and outcome performance, similar to prior studies (Cravens, et al., 2004; Panagopoulos & Johnson, 2015), and an indirect relationship between capability control and salesperson satisfaction via sales innovativeness and sale supportiveness.

Miao, Evans, and Shaoming (2007) replicated the significant positive effect of outcome control on salesperson performance in their study of salespeople in a combination of business-to-business and business-to-consumer sales. Miao, et al. (2007) examined the impact of salesperson motivation on the relationship between sales management control and salesperson behavior and outcome performance. Outcome, activity and capability control were measures using scales developed by Challagalla and

Shervani (1996). Salesperson behavior and outcome performance were measured using scales developed by Cravens et al. (1993) and adapted from Behrman and Perreault (1982).

Miao et al. (2007) found that outcome control had a significant positive impact on outcome performance, capability control had a significant negative effect on outcome performance, and activity control was unrelated to outcome performance. Miao et al. identified a more complex relationship between activity control and outcome performance via challenge seeking and behavior performance such that activity control had a significant positive effect on challenge seeking, challenge seeking had a significant positive effect on behavior performance, and behavior performance had a positive significant effect on outcome performance. This finding by Miao et al. supports Challagalla and Shervani's (1996) assertion that the control-performance relationship is complex and is impacted by intervening variables.

Challagalla and Shervani (1996) found an indirect relationship between sales management control and salesperson performance via supervisor role ambiguity, which was consistent with the findings of Miao et al. (2007). In their study of salespeople in a business-to-business sales force, Challagalla and Shervani, examined the way outcome control, activity control, and capability control impacted salesperson performance and satisfaction. Challagalla and Shervani chose to study salespeople in a business-to-business setting because they felt this environment was most likely to allow observation of all three types of control. Challagalla and Shervani used the Jaworski and MacInnis (1989) scale to measure outcome control, and adapted the Jaworksi and MacInnis process control scale to mesure activity and capability control. As I indicated previously in this

literature review, this was the seminal study Challagalla and Shervani conducted to develop and justify separate scales for activity and capability control versus a single process control scale used in prior research (Jaworksi and MacInnis, 1989). Salesperson performance was measured using the Sujan, Weitz, and Kumar (1994) scale, which was an adaptation of the Behrman and Perreault (1982) sales objective achievement scale.

Challagalla and Shervani (1996) found that capability, activity, and outcome control were negatively and significantly related to supervisor role ambiguity, as expected. None of the control elements directly impacted salesperson performance, also as expected, providing justification for Challagalla and Shervani's assertion that inconstant findings regarding the direct effect of controls on performance in prior research studies were most likely due to the instruments used, as well as the likelihood that many of the effects of controls on performance were indirect. Challagalla and Shervani found that supervisor role ambiguity had a significant negative effect on salesperson performance. This finding supported their hypothesis that management control impacted salesperson performance indirectly through a reduction in supervisor role ambiguity. Capability and activity control had a positive significant effect on satisfaction with supervisor, and satisfaction with supervisor was positively and significantly related to performance, providing further evidence of an indirect effect.

Challagalla and Shervani's (1996) proposition regarding an indirect relationship between sales management control and salesperson performance was supported in a study by Kohli, Shevani, and Challagalla (1998). In their study of salespeople in business-to-business sales, Kholi et al. (1998) examined the impact of supervisor behavior on salespeople's learning orientation and performance orientation. The three scales used to

measure sales management control in this study were developed by Challagalla and Shervani and reflected outcome control, capability control, and activity control. As I pointed out earlier in this chapter, a primary difference between the Challagalla and Shervani scales and those developed by Jawoski and MacInnis (1989) was the separation of process (behavior) control into two sub-scales: activity control, and capability control. The scale used to measure salesperson performance was developed by Sujan et al. (1994), similar to Cravens et al. (1993), and adapted from Behrman and Perreault (1982), all reflective of achievement of sales objective results.

Both outcome and capability control significantly and positively impacted salespeople's learning orientation (Kohli et al., 1998). Activity orientation was unrelated to learning orientation. Outcome and activity control positively and statistically significantly influenced salesperson performance orientation; however, capability control was unrelated to salesperson performance orientation. These findings are in-line with Challagalla and Shervani's (1996) proposition that capability control and activity control have different impacts on seller behavior and should be measured separately, providing empirical justification for disaggregating process (behavior) control into two separate constructs.

Ultimately, Kohli et al. (1998) were interested in the relationship between seller orientation and performance. Kohli et al. found that salesperson performance orientation was significantly and positively related to salesperson performance. Learning orientation was unrelated to salesperson performance. Kohli et al. also examined the moderating effects of experience on the above relationships. They found experience moderated the relationship between outcome control and learning orientation such that for more

experienced sellers, outcome control increased learning orientation, but was unrelated to learning orientation for less-experienced sellers. Activity orientation was negatively and statistically significantly related to learning orientation for more experienced sellers, but unrelated to learning orientation for less-experienced sellers. Although activity control had a positive and significant effect on performance orientation for all sellers, the effect was stronger for sellers with more experience.

Fang, Evans, and Zou (2005) found evidence for an indirect effect of sales management control on salesperson performance (Challagalla & Shervani, 1996; Kohli et al., 1998) via goal-setting characteristics. In two separate studies, Fang, et al. examined the degree to which goal setting characteristics moderated the relationship between sales management control and salesperson performance. The first study involved salespeople from a variety of industries representing both business-to-consumer and business-to-business sales in the United States. The second study involved a similar population of salespeople from China. Fang et al. used Challagalla and Shervani's (1996) scales to measure outcome, capability, and activity control, and Behrman and Perreault's (1982) scales to measure performance. Fang et al. examined the goal setting characteristics of difficulty and specificity as moderators of the control-performance relationship as high, moderate, or low.

In the first study, Fang et al. (2005) found that when goal difficulty was moderate, outcome control had a significant and positive effect on salesperson outcome performance. When goal specificity was high, the relationship between outcome control and salesperson outcome performance was positive and significant. In the second study involving the Chinese sample, Fang et al. found that the relationship between outcome

control and salesperson outcome performance was significant and positive only under low goal specificity conditions, versus high goal specificity for the United States sample. Goal setting characteristics failed to moderate the relationship between activity control or capability control and salesperson outcome performance in either sample.

In a separate study of industrial salespeople, Challagalla, Shervani, and Huber (2000) examined the degree to which salesperson work location impacted the relationship between management control and salesperson consequences. Challagalla et al. used the Challagalla and Shervani (1996) scales to measure management control and salesperson performance, and the John and Weitz (1989) task complexity scale. Challagalla et al. used task complexity, sales experience, and supervisor role ambiguity as control variables in this study to isolate the effects of moderator relationships between controls and salesperson consequences. Challagalla et al. examined salesperson location as the primary moderator of the control – consequence relationship, identified as either co-located with or remote from their sales supervisor.

Challagalla et al. (2000) found that outcome control was positively and significantly related to satisfaction with supervisor co-located salespeople, but unrelated to satisfaction with supervisor for remote salespeople, providing evidence for a moderating effect of salesperson location. Activity control was negatively and statistically significantly related to satisfaction with supervisor for co-located salespeople, but significantly and positively related to satisfaction with supervisor for remote salespeople, providing additional evidence for the moderating effect of location. Capability orientation was significantly and positively related to satisfaction for both remote and co-located sellers, indicating that salesperson satisfaction increased when

they viewed their supervisors as coaches. Capability orientation was positively related to performance for co-located salespeople, but unrelated to performance for remote salespeople.

Challagalla et al. (2000) found that outcome control was unrelated to salesperson performance for either remote or co-located salespeople. This finding was consistent with prior studies in which researchers failed to find a relationship between outcome control and performance (Atuahene-Gima & Li, 2002). However, Challagalla et al.'s findings were in contrast to prior studies showing a positive relationship between outcome control and performance (Cravens, et al., 2004; Panagopoulos & Johnson, 2015), and others showing a negative relationship between outcome control and performance (Aulakh, & Gencturk, 2000). None of the three studies, Atuahene-Gima and Li (2002), Cravens et al. (2004), or Panagopoulos and Johnson (2015) addressed potential moderators of the control-performance relationship. In Challagalla et al.'s study, task complexity, experience, and role ambiguity failed to significantly influence the control-performance relationship differently for co-located versus remote salespeople, in contrast to the findings of Kohli et al. (1998) who found a moderating effect of salesperson experience.

Empirical studies unrelated to sales performance. In a study of business-to-business salespeople, Choi, Dixon, and Jung (2004) examined the relationships between sales management control, supervisee trust, and dysfunctional seller behavior. The scales used Challagalla and Shervani's (1996) scales to measure output, activity, and capability controls. Choi et al. used the Jaworski and MacInnis (1989) scales to measure the dependent variable, dysfunctional behavior. The term dysfunctional behavior in Choi et

al.'s study is synonymous with opportunistic behavior in other studies using the same measure (Ramaswami, 2002).

Cho et al. (2004) found a significant negative relationship between output control and dysfunctional seller behavior. This was in direct conflict with the findings of Ramaswami (1996) that output control increased dysfunctional behavior. The conflicting findings between these two studies could stem from the populations studied. Ramaswami studied a widely varied sample of mostly marketing personnel, as compared to Choi, et al.'s study of salespeople. Consistent with Ramaswami, Choi, et al. found that activity control significantly increased dysfunctional behavior. Capability control was unrelated to dysfunctional behavior; however, it was positively and significantly related to trust in supervisors. Choi et al. found that because trust in supervisors reduced dysfunctional behaviors, capability control mediated the relationship between trust and dysfunctional behaviors.

In a study of industrial salespeople and their customers, Wang, Dou, and Zhou (2012) examined the impact of sales management controls on salesperson behavior and the associated customer experience. They used the Challagalla and Shervani (1996) scales to measure activity and capability controls; however, the scale items for capability control were adapted and reworded to reflect focus on seller skills relative to customer relationships. Wang et al. used a combination of the Jaworksi and MacInnis (1989) scales and Oliver and Anderson (1994) scales to measure outcome control. This was the only study included in this literature review that combined items from the Jaworski and MacInnis (1989) and Oliver and Anderson (1994) scales to measure outcome control. This is particularly interesting because Jaworski and MacInnis conception of outcome

control was that it was a completely separate construct from behavior (process) control. Oliver and Anderson based their instrument on the propositions put forth by Anderson and Oliver (1987) that behavior (process) and outcome control are separate ends of the control spectrum, not separate constructs. This variation in measurement instrument could render the relationship between outcome control, seller behavior, and customer experience difficult to compare to other studies.

Wang et al. (2012) used Raman and Ruiz (2005) scales to measure opportunism assessed a buyer's perception of the degree to which a salesperson intentionally misleads a customer or applies pressure to a customer during sales interactions. This measure is related, but not identical to Jaworksi and MacInnis' (1989) measure of dysfunctional behavior which focused on seller propensity to falsify internal information and reporting.

Wang, et al. (2012) found that output and capability control work together synergistically so that high levels of both reduce opportunism; however, the effect of capability control was only positive when used along with high levels of output control. Activity control and capability control had a counteracting effect on opportunism such that the effect of capability control on opportunism was positive when activity control was strong, but negative when activity control was weak. The relationship between activity control and opportunism was negative when capability control was weak, but positive when capability control was strong. The level of opportunism when both controls were high was similar to the level of opportunism when both controls were low, therefore both controls reduced opportunism when used alone, but cancelled out each other's positive effect when used together. Wang et al.'s finding provides further support for Challagalla and Shervani's (1996) proposition that process control as defined by Jaworski

and MacInnis (1989) was too blunt of an instrument and needed to be disaggregated into activity control and capability control.

Wang et al. (2012) found that output and capability controls had positive and significant effects on customer relationship satisfaction. The researchers found no direct effect for capability control and customer relationship satisfaction. In summary, Wang, et al. found that activity and capability control have very different implications for motivating salespeople to engage in customer-oriented sales behaviors. The significant interaction effects between outcome, activity, and capability controls with seller opportunism and associated customer satisfaction in Wang et al.'s study provided evidence that main effects of controls in prior studies (Bello & Gilliland, 1997; Jaworski & Kholi, 1991; Jaworski, Stathakopoulos, & Krishnan, 1993; Piercy, Cravens, & Lane, 2009, 2012;) may be misleading (Challagalla & Shervani, 1996).

Literature Analysis and Study Justification

Because many of the studies I included in this literature review did not relate directly to the specific relationship between sales management control, product complexity, task complexity, number of accounts, and the associated impact on salesperson performance, I chose to compare and contrast the few highly relevant studies to highlight the gap in the extant literature. Table 1 shows all published studies that investigated the relationship between sales management control, product complexity and task complexity, and the impact on salesperson performance. The table is ordered by author names and highlights studies that have been conducted with sales populations within business-to-business sales organizations.

Table 1

Previous Studies on the Relationship Between Sales Management Control, Product Complexity, Task Complexity, and Number of Accounts on Salesperson Performance.

Author / Date	Population Studied/Type of Sale	Constructs Examined	Instruments Used	Direct Effect	Indirect Effect
Atuahene-Gima and Li (2002)	• Sales people • Business-to-business sales	• Process control • Outcome control • Product complexity (as control variable) • Supervisee trust • Salesperson outcome performance	• Jaworski and MacInnis (1989) for process and output control • Sujan, Weitz, and Kumar (1994) for salesperson outcome performance • Anderson (1995) scale for product complexity	• Product complexity had a statistically significant and positive effect on supervisee trust • No direct effect of output and process control on sales performance was tested.	• Supervisee trust did not lead to sales performance in either sample (in this case, product complexity did not moderate the relationship between controls and performance)
Bello and Gilliliand (1997)	• Sales managers • Industrial and consumer sales	• Output control • Process control • Product complexity	• Jaworski and MacInnis (1989) for process and output control • Madsen (1987) for salesperson channel performance • Anderson (1995) scale for product complexity	• Process control failed to influence channel sales performance • Output control statistically significantly and positively influenced channel sales performance	• Product complexity statistically significantly and positively increased the use of process and output control with foreign distributors (mediating role)
Flahterty, Arnold, and Hunt (2007)	• Salespeople in business-to-business sales	• Output control • Process control • Product complexity	• Jaworski and MacInnis (1989) for Output and process control • Sujan, Weitz, & Kumar (1994) for Salesperson performance • Slater and Olson (2000) for product complexity	• None tested. Sales role characteristics were combined into three separate clusters and not tested separately	• Process control had statistically significant positive effect on performance within the clusters, with low product complexity • Output control had a statistically significant positive impact sales performance for reps within the cluster with high product complexity
Menguc and Barker (2003)	• Sales managers • Business-to-business sales organizations	• Behavior-based management control • Purchase complexity	• Monitoring element of Babakus et al. (1996) scale for behavior-based management control		• When purchase complexity (task complexity) was high, incentive pay (outcome control) was positively related to sales volume.

	(task complexity) • Sales volume • Customer satisfaction • Profitability	• Complexity of customer purchase decision (John & Weitz, 1989)	• High levels of purchase (task) complexity was positively related to sales volume, but not profitability.

Of the four studies summarized in Table 1, none included the behavior-based control elements of activity and capability control (Challagalla & Shervani, 1996). In addition, no single study included task complexity and product complexity within the same study. None of the studies examined number of accounts as an independent variable. Thus, one limitation of the extant literature is the lack of examination of the relationships between capability and activity control, and the salesperson role characteristics of task complexity, product complexity, and number of accounts in the same study. The populations studied were notably different. Sales people in business to business sales were examined (Atuahene-Gima & Li, 2002; Flaherty et al., 2007), sales managers in business-to-business sales (Menguc & Tansu Barker, 2003), and sales managers in a mix of business-to-business and business-to-consumer sales (Bello and Gilliland, 1997). It is reasonable to suspect that managers and salespeople might have different perspectives regarding management control strategies in effect. It is also relevant to point out that business-to-consumer sales tend to be less complex than business-to-business sales leading to a variation in the levels of the sales role constructs of task and product complexity. Results obtained in a pure business-to-business sample (Atuahene-Gima & Li, 2002; Flahterty et al., 2007; Menguc & Tansu Barker, 2003) may not be directly comparable results of a study using a mixed population of business-to-business and business-to-consumer sample (Bello & Gilliliand, 1997).

Variation in the conceptualizations of management control and the instruments used to measure the control constructs within the four studies were also notably different. Three studies (Atuahene-Gima & Li, 2002; Bello and Gilliliand; 1997; Flahterty et al., 2007) used the Jaworski (1988) conceptualizations of output and process control as separate constructs, and the associated measurement scales developed by Jaworksi and MacInnis (1989). The Jaworski and MacInnis (1989) conceptualization and scales measure output and process control as separate constructs and can therefore provide a measure for the independent effects of each control type on salesperson outcome performance. The moderating effects of task and product complexity and number of accounts can also be tested separately. The Menguc and Tansu Barker (2003) study used the Anderson and Oliver (1987) conceptualization of behavior-based versus outcome-based management control, and the associated scales developed by Babakus et al. (1996) to measure the constructs. The Anderson and Oliver (1987) conceptualization considers behavior-based and outcome-based controls as separate ends of a single spectrum of control. The effects of outcome and process control on salesperson outcome performance cannot be tested separately using the scales developed by Babakus et al. (1996). Nor can the moderating effects of task and product complexity or number of accounts be examined. To overcome this limitation, I used the conceptualizations and associated scales developed by Challagalla and Shervani (1996) to examine direct effects of activity and capability controls, and the moderating effects of task complexity, product complexity, and number of accounts on salesperson outcome performance.

The conceptualizations and instruments used to examine product complexity also differed. Two studies (Atuahene-Gima & Li, 2002; Bello & Gilliland, 1997) used a scale

developed by Anderson (1995) to measure product complexity. Anderson's conceptualization of product complexity concerned the technical attributes of the product. If inherent product technical complexity is of interest, such as cases of computer hardware or software products, this measure would be useful. Flaherty et al. (2007) examined product complexity using the scale developed by Slater and Olson (2000) concerning the nature of the product being sold from the seller's perspective. This scale would be most useful when evaluating seller perspective as an indicator of difficulty of the sales effort. Menguc and Tansu Barker (2003) examined purchase complexity using the scale developed by John and Weitz (1989) concerning the complexity of the purchasing task from the customer's perspective. This scale would be of interest in studies concerning buying patterns and associated buyer behavior. Although all measurements are tangentially tied to the sales process, each measure has a unique focus that would allow researchers to study specific attributes of product complexity.

In addition to variation in conceptualizations and measurements of product and task complexity, the results of the studies were difficult to compare. Atuahene-Gima and Li (2002) found that product complexity did not moderate the relationship between controls and performance. Bello and Gilliland (1997) found that product complexity statistically significantly increased the use of process and output controls with foreign distributors, providing a mediating role. Flaherty et al. (2007) found that product complexity moderated the relationship between process and output controls on salesperson performance such that process control had a significant positive impact on salesperson performance when product complexity was low, and output control had a

positive and significant impact on salesperson performance when product complexity was high.

Multiple researchers examined the number of accounts associated with a specific sales assignment (Menguc & Barker, 2003; Moncrief et al.,2006); however, the researchers did not examine the relationship between number of accounts and salesperson performance. According to Menguc and Tansu Barker (2003), when sellers are assigned a large number of accounts, they are more likely to focus on high-volume, low effort transactions instead of sales that are more complex and take longer to close. Although this hypothesis was not tested in Menguc and Tansu Barker's study, it is of interest in my study due to the potential impact that the number of accounts may have on seller effort. Moncrief et al. (2006) identified number of accounts as a role characteristic that contributed to taxonomy of six different sales positions; however, only the key account manager position had an actual reference to number of accounts. Although Flaherty et al.'s (2007) study of sales situations identified three separate clusters of sellers that reflect a variety of organizational factors, number of accounts was not considered in the cluster analysis.

In summary, inconsistencies exist regarding types of populations studied (sales managers versus salespeople), nature of the sales context (business-to-business versus business-to-consumer), conceptualizations of sales management control (Anderson & Oliver, 1987; Jaworksi, 1988, Challagalla & Shervani, 1996), scales used to measure management control (Babakus et al., 1996, Jaworski & MacInnis, 1989; Challagalla & Shervani, 1996), scales used to measure product and task complexity (Anderson, 1995; John & Weitz, 1989; Slater & Olson, 2000). An empirical study examining the direct

effects of activity, capability, and outcome control (Challagalla and Shervani, 1996) on salesperson outcome performance (Behrman and Perreault, 1982) was needed. In addition, an examination of the moderating effects of task complexity, product complexity, and number of accounts on the relationship between activity, capability, and outcome control on salesperson outcome performance was needed.

Summary

In this chapter, I presented an extensive examination of organization theory, agency theory, and transaction cost analysis as a theoretical basis for the study of sales management control. I presented three separate theories of sales management control, including a variety of measurement instruments designed and validated to measure each theoretical construct. Within each section I included relevant studies related to salesperson performance and other consequences such as salesperson satisfaction and customer commitment. I further examined the few core studies that included the moderating variables of product complexity, task complexity, and number of accounts, demonstrating a gap in the literature relative to the relationship of management control to salesperson outcome performance and how that relationship is moderated by these variables. My study was designed to test the relationship between management control and salesperson outcome performance, and examine the moderating effect of task complexity, product complexity, and number of accounts on this relationship. In chapter 3, I detail the research methods used test my hypotheses regarding the moderating effects of task complexity, product complexity, and number of accounts on the relationship between sales management control and salesperson outcome performance.

Chapter 3: Research Methodology

This quantitative study addressed the relationships between three types of sales management control (outcome control, activity control, and capability control) and salesperson outcome performance. This study also addressed whether task complexity, product complexity, and number of accounts moderated the above relationships. This chapter includes a discussion of the methodology of the study. The chapter also includes a discussion of the research design, population, sampling and sampling procedures, instrumentation, operational definitions of variables, data collection procedures and recruitment of participants, data analysis plan, threats to validity, and ethical procedures. The chapter concludes with a summary.

Research Design and Rationale

This study included a nonexperimental quantitative design. Quantitative methods are used when the objective is to investigate the relationships between two or more variables (Babbie, 2012) and when the study involves measuring variables quantitatively and analyzing them using statistical analysis to address a research hypothesis (Mustafa, 2011). Quantitative studies on behavior and outcome-based management control constructs within sales and marketing have been pervasive since 1975 (Jaworski & MacInnis, 1989). Of particular interest has been the examination of task complexity, product complexity, and number of accounts as moderators (Baron & Kenny, 1986) in determining the influence of behavior and outcome-based sales management control on salesperson performance. A qualitative approach was not appropriate for this study because it involves the collection of nonnumerical and nonstatistical data (Denzin, 2012) and cannot be used to determine the relationship between variables (Bryman, 2012).

Population

The target population consisted of salespeople in business-to-business sales. There was no sales team size limitation, and there was no salesperson tenure requirement. Distributor representatives who sell through channels were not included in this study, nor were sellers of business-to-consumer sales such as real estate or retail sales. The research was conducted with a discrete company sample of salespeople in the business-to-business, direct sales environment. Clients and prospects of a sales management training and consulting company provided the target list of participating companies. This training and consulting company specializes in research targeting sales managers and develops training aimed at improving salesperson productivity through effective sales management. The participating client was in the security services business.

Sampling and Sampling Procedure

The required sample size for this study was calculated based on the three factors of power, effect size, and level of significance. The minimum sample size for this study was 200 based on 15 predictor variables including interaction effects (Sloper, 2006). A two-tailed, nondirectional hypothesis test was conducted employing the statistical test of moderated regression with 15 predictors: the three factors of sales management control (outcome control, activity control, and capability control), the three moderators (task complexity, product complexity, and number of accounts on these relationships), and the nine interaction terms of sales management control and the moderators to represent the moderating effects. A Cohen medium effect size of 0.15, a power of 0.95, and a level of significance of 0.05 were also used. A low effect size was used due to low effect sizes in other studies. For example, Flaherty et al. (2007) found large effect sizes of Jaworski and

MacInnis (1989) output and process control scale on sales outcome performance (R^2 = .429 and R^2 = .369) as well as low effect sizes (R^2 = .025 and R^2 = .113) in the same study. The difference in effect sizes was attributed to variations in the sales situation studied. In another study that addressed the effect of process and output control on salesperson outcome performance using similar measures, Atuahene-Gima and Li (2002) found low effect sizes (R^2 = .10 and R^2 = .15). In the current study, a minimum sample size of 200 allowed the statistical analysis to reach 80% to reject the null hypotheses.

I conducted purposeful sampling to recruit the sample from clients of the sales management training and consulting company. Purposeful sampling was used because of the accessibility advantage, quick implementation, and low costs to sample the study participants (see Coy, 2008). A purposeful sampling strategy was chosen because the study participants were required to meet a specific set of inclusion criteria to be eligible for participation in the study. The inclusion criteria included salespeople who directly report to a sales manager in a business-to-business environment. There was no tenure requirement for salespeople in this study. The nature of the sales environment was business-to-business sales in security services. The salespeople were recruited by sending them an invitation letter regarding participation in the study. I asked for help from the leaders of the organization in recruiting the salespeople to participate in the study.

Procedures for Recruitment, Participation, and Data Collection

Salespeople in business-to-business sales were surveyed. At least 2,000 salespeople were recruited via e-mail. The participants were identified via a target list of companies from clients and prospects of sales management training and consulting

company, of which I am a partner. The nature of the sales environment was business-to-business sales in the security services industry.

Sales executives within the target organizations were asked to solicit input from their salespeople to participate in the study. A description of the study was provided along with a prospectus in the invitation letter. Once the company agreed to participate, a sample e-mail was drafted and sent to all participating salespeople. There was a single organizational contact who provided approval for the salespeople to participate in the study. The sales leader granted permission for the salespeople to participate in the study, informed the sales managers, and sent the link directly to the salespeople. The invitation letter provided a detailed background of the research purpose and methodology. A unique link was developed for the participating company to ensure confidentiality. All appropriate permissions from the sales leader were secured prior to survey deployment and participation.

The data collection procedure for this quantitative study was conducted online to ensure participants had easy access to the survey. The survey was deployed via Fluid Surveys. Fluid Surveys is a Web-based survey platform that provides an online method for survey participation. The link to the survey was e-mailed to the sample of respondents. On the website in which the survey was uploaded, there was an introductory page that provided an explanation of the study, instructions on how to answer the survey items, an informed consent form providing a promise of confidentiality, and the different questionnaires.

The participating individuals provided a digital signature by clicking on a button in the survey that indicated “I understand the purpose of the survey and I’m willing to

participate." The selection was inserted at the beginning of the survey and required an affirmative response prior to advancing to the actual questions. Through this process, gaining the informed consent for the individual participants was ensured. Clicking the negative response button of "I am not willing to participate" concluded the survey. Respondents were not allowed to answer the survey and test questionnaires if they did not provide electronic consent for participation.

The surveys did not have a time limit. Although the minimum size of the data set was 200 salespeople, data collection was not stopped at 200 responses; additional samples were obtained that exceeded the minimum 200 samples in anticipation of potentially missing data and response style bias. Of the total population of 4,000 salespeople, 374 survey responses were collected. The participants' responses were posted directly into my Fluid Surveys account via the Internet once they were submitted.

After the required number of responses was collected from the sample of salespersons, the data were downloaded in an Excel sheet. The different study variables were enumerated in the columns of the Excel sheet, and the rows included the response data of the different participants. Codes were assigned to each respondent to maintain confidentiality.

Instrumentation and Operational Definition of Variables

The data were collected through salespersons' responses to a survey about their sales manager's level of outcome, capability, and activity control, as well as task complexity, product complexity, and number of accounts. Salespeople also responded to questions about their individual outcome performance. The survey questions appear in

Appendix A. The following section addresses how each of the study variables was measured and how they were operationalized for the analysis.

Sales Management Controls (Independent Variables)

Outcome control, capability control, and activity control were measured using the same instrument developed by Jaworski and MacInnis (1989) and adapted by Challagalla and Shervani (1996). Each scale was measured using 5 items. Each item was scored on a 5-point scale ranging from strongly disagree to strongly agree. The total number of points for all questions was averaged to determine the overall level of control felt by the individual salesperson for output, capability, and activity control. A higher score on this scale indicated higher control. The output control questions asked about the sales volume or market share. The capability control questions asked about selling skills/abilities (e.g., negotiation, communication, presentation, etc.). The activity control questions asked about the salesperson's activities (e.g., call rate, number of demos, customers to be contacted, reports to turn in, and so on). The internal consistency reliability of the responses in this study was evaluated by computing the Cronbach's alpha. The 5-item questionnaire measuring outcome control had a coefficient of 0.87, the 5-item questionnaire measuring capability control had a coefficient of .90, and the 5-item questionnaire measuring activity control had a coefficient of .89 (Challagalla & Shervani, 1996). All coefficients exceeded the 0.70 acceptable level of reliability. Convergent validity was demonstrated because the path coefficients from latent constructs to their corresponding manifest indicators were significant at the level of significance of 0.05. Discriminant validity was demonstrated because the pair-wise comparison of the different

outcome control facets showed that all the latent-trait correlations of the constructs were significantly different from 1.

One important contributor to construct validity is the degree to which relationships between constructs occur in the hypothesized direction. Challagalla and Shervani (1996) proposed that sales management controls had indirect effects on seller performance via other intervening variables. In their seminal study of sales management control, Challagalla and Shervani found support that scores on their scales for output control (b= -.14, p<.05), activity control (b= -.19, p<.01), and capability control (b= -.32, p<.001) correlated with lower scores on measures of supervisor role ambiguity. Scores for activity control (b= -.19, p<.01) and capability control (b= -.21, p<.01) correlated with lower scores on measures for customer role ambiguity (Challagalla & Shervani, 1996). Supervisor role ambiguity (b= -.18, p<.05) and customer role ambiguity (b= -.24, p<.01) had significant negative direct effects on salesperson performance, supporting the hypothesized indirect effect of output, capability, and activity controls on salesperson performance (Challagalla & Shervani, 1996). In a separate study of sales management control's indirect effect on seller performance, Kohli, Shervani, and Challagalla (1998) found support for their hypotheses that scores on scales measuring supervisory end-results orientation (b=.28, p<.01) and capability orientation (b=.25, p<.05) were significantly and positively related to scores on scales measuring salesperson learning orientation. Scores on scales measuring performance orientation correlated positively and significantly to scores on scales related to supervisory end-results orientation (b=.17, p<.05) and scores on scales measuring activity orientation (b=.33, p<.01) in support of associated hypotheses. Scores on scales measuring performance orientation were

positively and significantly correlated to scales for salesperson performance (b=.25, p<.01), supporting the indirect effect of end-result and activity orientation on salesperson performance.

Task Complexity (Moderator Variable)

Task complexity was a potential moderating variable and concerns the nature of the purchase decision from the buyer's perspective (John & Weitz, 1989). Task complexity was measured using a 5-item scale developed by John and Weitz (1989). All scale items are reflected in Appendix A. Task complexity was measured using a 7-anchor scale. These include 0%, 10%, 30%, 50%, 70%, 90%, and 100%. The total amount of points for all five questions was averaged to determine the task complexity felt by the individual salesperson. The internal consistency reliability of the responses for task complexity in this study was evaluated by computing the Cronbach's alpha. Cronbach's alpha coefficient was computed by John and Weitz (1989) and the 5-item questionnaire measuring task complexity has a coefficient of 0.86 which exceeds the 0.70 acceptable level of reliability. The measure of task complexity showed good reliability.

Product Complexity (Moderator Variable)

Product complexity concerns the nature of the product being sold from the seller's perspective (Slater & Olson, 2000). Product complexity was measured using a 2-item, Likert scale developed by Slater and Olson (2000). All scale items are reflected in Appendix A. This was measured using a 7-point scale from "strongly disagree" to "strongly agree" to assess product complexity. The total amount of points for the two questions was averaged to determine the product complexity felt by the individual salesperson. The two items in the Slater and Olson (2000) questionnaire measuring

product complexity had correlation between the items of 0.67.

Number of Accounts (Moderator Variable)

Number of accounts was measured with a single question that indicated how many accounts for which the salesperson was responsible.

Salesperson Performance (Dependent Variable)

This construct is the dependent variable. Self-report salesperson performance was measured using six questions. All items were scored on a 6-point scale ranging from "strongly disagree" to "strongly agree." All scale items are reflected in Appendix A. The total amount of points for all questions was averaged to determine the overall performance level. A higher score on this scale indicated better performance. This instrument was developed by Behrman and Perreault (1982). The internal consistency reliability of the responses in the salesperson performance in this study was evaluated by computing the Cronbach's alpha. Cronbach's alpha coefficient was computed by Behrman and Parreault (1982) and the 6-item questionnaire measuring sales performance was over 0.75 which exceeds the 0.70 acceptable level of reliability. The measure of sales performance showed excellent reliability. Test-retest reliability estimate had a value of 0.70 which indicate that it had acceptable test-retest reliability. Manager ratings of salesperson performance correlated significantly ($r = .36$, $p < .001$) with the achieving overall sales objectives. Achievement of sales objectives correlated significantly with salesperson need for achievement ($r = .25$, $p < 001$), providing evidence of concurrent validity. Objective salesperson performance was measured as a percentage of quota attainment.

Demographic Variables

The demographic variables of age, sex, and years as a salesperson are considered as extraneous variables. Age was measured using a single open-ended question in which participants were asked to input their age. Age is a continuous variable measured by the actual age of the salesperson. Sex was measured by using a categorical question with two nominal levels (male or female) asking participants to indicate their gender. Years as a sales person was measured using a single open-ended question in which participants were asked to input the number of years of experience as a salesperson. It is a continuous variable to determine their actual number of years as a salesperson.

Data Analysis

This study aimed to answer the following four questions:

Research Question 1: Are there relationships between the three types of sales management control and salesperson outcome performance?

$H_0$1: Outcome control, capability control, and activity control are not related to salesperson outcome performance.

H_a1: Outcome control, capability control, and activity control are positively related to salesperson outcome performance.

Research Question 2: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of outcome control on salesperson outcome performance?

$H_0$2: Task complexity, product complexity, and number of accounts does not moderate the relationship between outcome control and salesperson outcome performance.

H_a2: Task complexity, product complexity, and number of accounts moderates the relationship between outcome control and salesperson outcome performance.

Research Question 3: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of behavior-based capability control on salesperson outcome performance?

$H3_0$: Task complexity, product complexity, and number of accounts does not moderate the relationship between capability control and salesperson outcome performance.

H_a3: Task complexity, product complexity, and number of accounts moderates the relationship between capability control and salesperson Outcome Performance.

Research Question 4: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of activity control on salesperson outcome performance?

H_04: Task complexity, product complexity, and number of accounts does not moderate the relationship between activity control and salesperson outcome performance.

H_a4: Task complexity, product complexity, and number of accounts moderates the relationship between activity control and salesperson outcome performance.

Data were entered into SPSS version 21.0 for Windows. Descriptive statistics were conducted to describe the sample demographics and the research variables used in the analysis. Frequencies and percentages were calculated for nominal data such as sex/gender, whereas means and standard deviations were calculated for continuous data such as the independent variables of control scales (outcome control, capability control, and activity control), the moderators of task complexity, product complexity, and number

of accounts, dependent variable of salesperson performance, the demographic information of age and years as a salesperson. The internal consistency reliability of the survey responses was examined with Cronbach's alpha values for the three factors of sales management control scales (outcome, activity and capability) and outcome performance. A test of internal consistency of the survey responses of each of the study variables was investigated using the Cronbach's coefficient alpha estimates of reliability.

Data were screened for accuracy, missing information, and outliers. The presence of outliers was tested by the examination of standardized value. Standardized values represent the number of standard deviations the value is from the mean. Values greater than 3.29 standard deviations from the mean are considered to be outliers and were removed from the data set (Tabachnick & Fidell, 2007). Cases with missing data were examined for non-random patterns. To minimize missing data, it was ensured in the survey site that the questions could not be skipped in order to force respondents to answer all questions without skipping one. However, participants who did not complete major sections of the survey were excluded.

Prior to the statistical analysis, normality testing was conducted on the data of the study variables to ensure that the assumptions required for parametric statistical tests were fulfilled. This is because a regression analysis is a parametric statistic test. The study was conducted by investigating the skewness and kurtosis statistics and the normality plots in the histograms.

A hierarchical regression analysis was performed to determine the moderating effects of task complexity, product complexity, and number of accounts on activity control, capability control, outcome control, and salesperson outcome performance.

Moderation effects of product complexity, task complexity, and numbers of accounts were explored using nine interaction terms. Interaction terms were created between each of the sales management control variables and task complexity, product complexity, and number of accounts by multiplying the variables. There was a total of 9 interaction terms representing the moderation effects of the different moderators. A variable modifies a relationship if it changes the direction or magnitude of the relationship between two variables. The moderation effects of complexity (product and task) and number of accounts were computed by multiplying each of these moderators by the independent variables of the sales management control scales (outcome, activity, and capability).

The dependent variable (DV, the outcome) in the regression model was salesperson outcome performance, whereas the independent variables (IV, the predictor) were the sales management control scales of outcome, activity and capability. The nine interaction terms were added to determine the moderation effects. A single regression model was run with each of the three sales management control scales as the independent variables and using task complexity, product complexity, and number of accounts as the moderators.

A hierarchical regression model was used in which block 1 included the effects of the independent variables on the dependent variable and block 2 included the individual effects of the moderator variables to the dependent variable. Block 3 included the moderation effect by including the 9 multiple terms in the regression model. A level of significance of 0.05 was used in the hierarchical regression analysis.

Threats to Validity

Studies are valid if the instrument used to test consistently measures what it is intended to measure. As stated, internal consistency of the survey responses was examined with Cronbach's alpha values for the three sales management control scales (outcome, activity and capability) and outcome performance. The process ensured that the survey questions used were internally consistent by examining the internal consistency of the responses of the different respondents.

Construct validity is the extent to which a measurement is truthful, accurate, authentic, or free of system error with evidence supporting the conclusion. Studies are valid if the instrument used to test consistently measures what it is intended to measure. Construct validity for all measures other than product complexity are strong. Cronbach's alpha of .67 for product complexity is the only reliability estimate that is below the .70 acceptable level. This may call into question any findings of moderation of the relationship between sales management controls and salesperson performance.

The internal validity of a quantitative study is "the degree to which observed changes in a dependent variable can be attributed to changes in an independent variable" (Pedhazur & Schmelkin, 2013, p. 154). In research studies, the degree to which threats to internal validity influence the study are determined by the type of research design and the degree of control that the researcher has regarding sampling, data collection, and data analyses (Mertens, 2014). For this study, one major threat to internal validity was the direction of the causal influence of the variables studied. This study was not designed to determine a cause and effect relationship. I cannot assert that increases in one or more types of management control led to improved sales performance. In addition to a lack of

causal influence, there are many other factors such as market turbulence and competitive intensity that impact sales performance. Those and many other complicating factors were beyond the scope of this study.

External validity concerns the degree to which conclusions from a study can be generalized to other categories of people, settings, or times (Green & Salkind, 2010). Results from this study therefore may not be generalized to other study population groups other than salespeople in business-to-business sales. Salespeople in business-to-consumer sales will not be able to apply the findings from my study, nor will marketing personnel due to the variation in job type and evaluation measures.

Statistical conclusion validity is also a concern. The data were evaluated to ensure the data did not violate the assumption of the statistical tests.

Ethical Procedures

The data collection procedures designed for this study were comprehensive and were reviewed by members of the Walden's Institutional Review Board (IRB) to ensure that the data collection procedure was accepted ethically and legally and did not violate any human rights. Prior to conducting the data collection, the purpose of the study and the data collection process the study participants would undergo were explained clearly to the participating salespeople. After gaining permission from the organization heads to recruit their salespeople to participate in the study, the salespeople were required to prove consent by agreeing to the informed consent form. Participants of the survey were also notified that they had the right to discontinue participation at any time, and their responses to the different questionnaires was to be discarded if they requested withdrawal from the study.

Fluid Surveys automatically stores and encrypts information from the completed questionnaires and I was only able to access the information obtained with a username and password. The collected responses from the participants were coded to ensure confidentiality in the data analysis and reporting of results. Codes were assigned to each respondent rather than using names to maintain confidentiality.

The data received is being kept secure and confidential and will be held for only three years after the conclusion of the research. Soft copies of the results obtained digitally are being stored in a personal portable hard disk drive that is password protected. The hard drive will be electronically wiped clean and physically destroyed and will be non-functional after three years of the completion of the study.

Summary

Chapter 3 included a discussion of the research design, population, sampling, sampling procedures, instrumentation, operational definition of constructs, data collection procedures, recruitment of participants, data analysis plan, threats to validity, and ethical procedures. This study included a quantitative, non-experimental research design with the objective of determining the relationships between three constructs of sales management control (outcome control, activity control, and capability control) and salesperson outcome performance, and the moderating effects of task complexity, product complexity and number of accounts on these relationships. Data were collected via salesperson responses to a survey regarding their sales manager's level of outcome, capability, and activity control, as well as task complexity, product complexity, number of accounts, and individual outcome performance as a salesperson. An online survey method using Fluid Surveys was used in the data collection. The data analysis included

the use of descriptive statistics and a hierarchical regression analysis to address the research questions of the study.

Chapter 4 includes the findings of the data analysis and specifically exposes the results of the data collected. Finally, Chapter 5 includes a discussion of the results as well as the implications of the study for theory, research, and practice.

Chapter 4: Results

The purpose of this quantitative study was to examine the relationships between three types of management control (outcome, capability, activity) and salesperson outcome performance as well as quota achievement. The second purpose of this study was to examine whether product complexity, task complexity, and number of accounts moderated the above relationships. Four research questions and hypotheses were formulated to guide the analysis:

Research Question 1: Are there relationships between the three types of sales management control and salesperson outcome performance?

$H_0$1: Outcome control, capability control, and activity control are not related to salesperson outcome performance.

H_a1: Outcome control, capability control, and activity control are positively related to salesperson outcome performance.

Research Question 2: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of outcome control on salesperson outcome performance?

$H_0$2: Task complexity, product complexity, and number of accounts does not moderate the relationship between outcome control and salesperson outcome performance.

H_a2: Task complexity, product complexity, and number of accounts moderates the relationship between outcome control and salesperson outcome performance.

Research Question 3: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of behavior-based capability control on salesperson outcome performance?

$H_0$3: Task complexity, product complexity, and number of accounts does not moderate the relationship between capability control and salesperson outcome performance.

H_a3: Task complexity, product complexity, and number of accounts moderates the relationship between capability control and salesperson Outcome Performance.

Research Question 4: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of activity control on salesperson outcome performance?

$H_0$4: Task complexity, product complexity, and number of accounts does not moderate the relationship between activity control and salesperson outcome performance.

H_a4: Task complexity, product complexity, and number of accounts moderates the relationship between activity control and salesperson outcome performance.

In this chapter, I describe the data collection process, demographic information, measures of internal consistency reliability, and results of regression analyses conducted on these data using the subjective performance data as the dependent variable. Following this, I presente results using objective performance data as the dependent variable. This chapter concludes with a summary highlighting the significant findings in these analyses.

Results of Data Collection

The research was conducted with a large multinational security services company. The participating company was selected due to convenience of the sampling frame. The

participating company is a client of the company in which I am employed and represents a business-to-business sales environment with salespeople selling directly to end customers.

The data were collected via salespersons' responses to a survey about their sales manager's level of outcome, capability, and activity control, as well as task complexity, product complexity, and number of accounts. Salespeople responded to questions about their individual outcome performance. Although the total population of salespeople exceeded 6,500, only sellers in the United States and United Kingdom were invited to participate. This reduced the population to 4,000 salespeople, all of whom were invited to participate. There was no limitation regarding size of sales team managed, and there was no tenure requirement.

Sales executives within the organization agreed to have their sales managers evaluated as part of the study. A description of the study was provided along with my prospectus. An e-mail was drafted and sent to all participating sales managers to explain the study and request the participation of their salespeople. The survey was deployed via Fluid Surveys (Fluid Surveys, 2017). A unique link was developed for the participating company. All appropriate permissions were secured prior to survey deployment. Data collection took 4 months because the participating company took almost 3 months to obtain the objective performance data. The total number of responses was 379, which exceeded the target sample size of 200 required for 80% statistical power. Data analysis included descriptive statistics along with a series of hierarchical regression analyses.

A total of 472 survey responses was received. These data were inspected for missing data among variables included in the regression models. As a result, 72 cases

were removed due to missing data. Additionally, these data were examined for outlying values, which were defined as any values more extreme than three standard deviations above or below the mean. Analysis of outlying values resulted in 21 additional cases being dropped from the data set, yielding a final data set of 379 cases.

Data were screened for accuracy, missing information, and outliers. The presence of outliers was tested by the examination of standardized values. Standardized values represent the number of standard deviations the value is from the mean. Values greater than 3.29 standard deviations from the mean are considered to be outliers and were removed from the data set (see Tabachnick & Fidell, 2007). Cases with missing data were examined for nonrandom patterns. To minimize missing data, I reminded participants in the survey site that questions could not be skipped. This encouraged respondents to answer all questions. Participants who did not complete major sections of the survey were excluded.

Prior to the statistical analysis, a series of diagnostics was conducted to determine whether any of the assumptions of regression were violated with respect to these data. These results are presented in Appendix B. These tests addressed the presence of linearity, absence of multicollinearity, normality of the residuals, homoscedasticity of the residuals, absence of influential observations, and statistical independence of observations. Univariate normality was examined for all quantitative variables within these regression models, including the dependent and independent variables, through the construction of histograms and QQ plots. Within these plots, the normal curve was superimposed, with measures of skewness and kurtosis also calculated. These results did not indicate extreme nonnormality with respect to any of these measures.

Next, with respect to each independent variable, a scatterplot was generated illustrating the bivariate relationship between the independent variable and the dependent variable. Additionally, a locally weighted smoothing (LOESS) curve was superimposed on these plots in Statistical Package for the Social Sciences (SPSS) to help illustrate whether the relationship was reasonably linear. The thickness of the scatterplot around the superimposed curve was examined to determine whether it changed on the basis of the level of the independent variable to check for homoscedasticity. These plots failed to indicate heteroscedasticity, and these scatterplots suggested the potential for nonlinear relationships with respect to task complexity and product complexity on salesperson performance. New variables were constructed for the predictors of task complexity and product complexity by subtracting the mean from the raw measures and squaring the results. The inclusion of these two measures with respect to the relevant three regression models failed to indicate statistical significance in any case. Based on these results, none of the regression models were modified because nonlinearity was not indicated.

Next, plots were examined of the residuals versus the predicted values to ensure that there were no trends and no outliers. An examination of these plots did not indicate either trends or extreme outliers. Additionally, the variance inflation factors were also calculated with respect to all regression analyses. The presence of outliers in the regression analyses was tested by specifying that the studentized residuals be presented within these models, along with measures of Cook's distance. These results indicated a maximum Cook's distance of .101, with a small number of studentized residuals whose absolute values were slightly above 3. Overall, these results did not suggest influential outliers.

Demographic Information

Table 2 reports the sample characteristics with the categorical measures of respondent age, gender, ethnicity, region, current sales position, and yearly sales target. With regard to age, 61% of respondents were between 35 and 55. Approximately 80% of respondents were male and 91% of respondents were White. With respect to work location, 82% of respondents were from the United States and 16% were from the United Kingdom or Ireland. Regarding current sales position, 12% of respondents were involved with product sales, 2% were involved with channel sales, 27% worked with service contracts, 20% dealt with install contracts, and 36% worked in a hybrid sales position. With respect to the yearly sales target, over 90% of respondents had targets less than $3 million, with over 50% of respondents between $300,000 and $1.5 million.

Table 2

Descriptive Statistics: Frequencies

Measure	*N*	%
Age		
25 and under	2	0.5%
26 to 35	60	15.8%
36 to 45	103	27.1%
46 to 55	131	34.5%
56 to 65	76	20.0%
Over 65	7	1.8%
Total	379	100.0%
Gender		
Female	77	20.3%
Male	302	79.6%
Total	379	100.0%
Ethnicity		
American Indian or Alaskan Native	7	1.8%
Asian or Pacific Islander	5	1.3%
Black or African American	12	3.1%
Hispanic or Latino	8	2.1%
White / Caucasian	347	91.5%
Total	379	100.0%
Region		
United States	311	82.0%
Canada	1	0.2%
UK & Ireland	62	16.3%
Continental Europe	2	0.5%
Africa	1	0.2%
India	1	0.2%
Latin America	1	0.2%
Total	379	100.0%

(*table continues*)

Descriptive Statistics: Frequencies Measure	*N*	%
Current Sales Position		
Install Contracts	78	20.5%
Service Contracts	104	27.4%
Products	52	13.7%
Hybrid	137	36.1%
Channel Sales	8	2.1%
Total	379	100.0%
Yearly Sales Target		
$300,000 and Under	80	21.1%
$300,001 - $750,000	92	24.2%
$750,001 - 1,500,000	98	25.8%
$1,500,001 - $3,000,000	77	20.3%
$3,000,001 - $5,000,000	20	5.2%
$5,000,001 - $10,000,000	7	1.8%
Over $10,000,000	5	1.3%
Total	379	100.0%

Descriptive Statistics of Study Variables

Next, Table 3 reports the measures of central tendency of the mean and median as well as measures of variability of the standard deviation, range, and minimum and maximum scores associated with the continuous measures of interest, which consisted of the following: outcome control, capability control, activity control, task complexity, product complexity, salesperson performance, number of managed accounts, and years as a salesperson.

In reviewing these data, mean and median scores were found to be similar in all cases except the number of managed accounts. For this reason, the mean values will be focused upon with respect to this set of variables with the exception of the number of managed accounts. Regarding the measures of outcome control, capability control,

activity control, task complexity, product complexity, and salesperson performance, mean values ranged from a minimum of 3.52 for task complexity to a maximum of 5.77 for outcome control. Regarding the respective standard deviations, these ranged from a minimum of .58 for task complexity to a maximum of 1.42 for capability control. Next, regarding the number of managed accounts, this had a median of 50 accounts with a standard deviation of 422.78. Skewness and kurtosis were much closer to zero after log transformation. Finally, regarding number of years spent working as a salesperson, this had a mean of 15.01 years with a standard deviation of 10.14 years.

Table 3

Descriptive Statistics: Continuous Measures

Measure	Mean	Median	*SD*	Range	Min	Max.	Q1	Q3
Outcome control	5.77	6.00	0.94	4.40	2.60	7.00	5.20	6.40
Capability control	5.07	5.40	1.42	5.80	1.20	7.00	4.00	6.00
Activity control	5.59	5.80	0.98	4.60	2.40	7.00	5.00	6.00
Task complexity	3.52	3.40	0.58	3.00	2.00	5.00	3.20	4.00
Product complexity	4.25	4.00	1.22	6.00	1.00	7.00	3.50	5.00
Salesperson performance	5.53	5.67	0.79	4.00	3.00	7.00	5.00	6.00
N. of Managed Accounts	221.52	50.00	422.78	2500.00	0.00	2500.00	10.00	250.00
N. Accounts (Log Trans.)	3.93	3.93	2.01	8.92	.00	8.92	2.40	5.53
Years as a Salesperson	15.01	15.00	10.14	49.00	1.00	50.00	6.00	22.00

The internal consistency reliability of the survey responses was examined with Cronbach's alpha values for the three factors of sales management control scales (outcome, activity and capability) and outcome performance. A test of internal consistency of the survey responses of each of the study variables was investigated using the Cronbach's coefficient alpha estimates of reliability. The results of these analyses are

presented in Table 4. As shown in this table, an acceptable level of internal consistency reliability was found in all cases except Product Complexity, which had a Cronbach's alpha of .538.

Table 4

Internal Consistency Reliability Measures

Scale	*N* of Items	Cronbach's Alpha
Outcome Control	5	.863
Capability Control	5	.951
Activity Control	5	.900
Task Complexity	5	.669
Product Complexity	2	.538
Salesperson Complexity	6	.833

Following this, a set of Pearson's correlations were conducted between the independent variables. These results are presented in Table 5. As shown, the highest correlations were between outcome control and capability control as well as activity control, and between capability control and activity control.

Table 5

Pearson's Correlations Between Independent Variables

Measure	1	2	3	4	5
1. Outcome Control					
2. Capability Control	.701***				
3. Activity Control	.758***	.825***			
4. Task Complexity	-.009	-.062	-.044		
5. Product Complexity	-.114*	-.158**	-.147**	.313***	
6. Accounts (Log)	.047	.101*	.080	-.133**	.001

Note. *p<.05, **p<.01, ***p<.001.

Inferential Statistics: Self-Report Performance Data

Initial descriptive statistics are reported, which consist of the sample size and percentages of response associated with the categorical measures of interest included within this study, along with measures of central tendency and variability calculated and reported for the continuous measures of interest. One linear regression and three hierarchical linear regression models were conducted on these data to explore this study's four research questions.

Hierarchical regression analysis was performed to determine the moderating effects of task complexity, product complexity, and number of accounts on activity, capability, outcome control, and salesperson outcome performance. Moderation effects of product complexity, task complexity, and numbers of accounts were explored using nine interaction terms. Interaction terms were created between each of the sales management control variables and task complexity, product complexity, and number of accounts by multiplying the variables. There was a total of 9 interaction terms that represent the moderation effects of the different moderators.

A series of four hierarchical linear regression analyses were conducted to investigate the four research questions included in this study. With respect to all regression analyses, interaction terms were always calculated using the *z*-scores associated with the original measures. The first research question included here consisted of the following: Are there relationships between the three types of sales management control and salesperson outcome performance?

The results of the linear regression analysis associated with this research question are presented in Table 6. None of the independent variables achieved statistical

significance in this regression model. Additionally, this regression model also failed to achieve significance.

Table 6

Regression Analysis for Salesperson Outcome Performance: Research Question 1

Measure	*B*	*SE*	Beta	*t*
Constant	4.99	.28		17.65***
Outcome Control	.03	.07	.03	.38
Capability Control	.05	.05	.09	.94
Activity Control	.03	.08	.03	.34

Note. *p<.05, **p<.01, ***p<.001. $F(3, 374) = 2.48$, $p = .061$; $R^2 = .019$, Adjusted $R^2 = .012$; B = Unstandardized regression coefficients; Beta = Standardized regression coefficients.

The second research question included in this study consisted of the following: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of outcome control on salesperson outcome performance?

Table 7 reports the results of the regression analyses conducted exploring this research question. In these analyses, outcome control was found to achieve statistical significance in all three models. Specifically, a one standard deviation increase in outcome control was associated with a .11 standard deviation increase in salesperson outcome performance in model two, with this figure increasing slightly to .12 in models one and three. Additionally, model one was found to achieve statistical significance in the ANOVA conducted, while this was non-significant in models two and three. With regard to the change in the *F*-statistic, this was not significant in either case.

Table 7

Regression Analysis for Salesperson Outcome Performance: Research Question 2

Measure	*B*	*SE*	Beta	*t*
Model 1[a]				
Constant	5.52	0.04		135.76***
Outcome Control (z)	0.11	0.05	0.12	2.29*
Model 2[b]				
Constant	5.52	0.04		135.15***
N. of Accounts (z)	0.10	0.07	0.07	1.34
Outcome Control (z)	0.11	0.05	0.11	2.21*
Task Complexity (z)	0.02	0.04	0.03	0.56
Product Complexity (z)	0.01	0.04	0.01	0.24
N. of Accounts (z)	0.03	0.04	0.04	0.70
Model 3[c]				
Constant	5.52	0.04		133.45***
Outcome Control (z)	0.12	0.05	0.12	2.39*
Task Complexity (z)	0.04	0.05	0.05	0.88
Product Complexity (z)	-0.01	0.05	-0.01	-0.12
N. of Accounts (z)	0.04	0.04	0.05	0.93
OC (z) * TC (z)	-0.07	0.05	-0.08	-1.34
OC (z) * PC (z)	0.08	0.05	0.10	1.63
OC (z) * A (z)	0.01	0.05	0.01	0.16

Note. *p<.05, **p<.01, ***p<.001; B = Unstandardized regression coefficients; Beta = Standardized regression coefficients.

Model 1:

R^2 = .014, Adjusted R^2 = .011; $F(1, 376) = 5.23$, $p < .05$

Model 2:

R^2 = .016, Adjusted R^2 = .006; $F(4, 373) = 1.54$, $p = .19$

Model 3:

R^2 = .025, Adjusted R^2 = .006; $F(7, 370) = 1.33$, $p = .236$;

Model 2 vs Model 1:

$\Delta R^2 = .02$; $\Delta F(3, 373) = .318$, $p = .812$

Model 3 vs Model 2:

$\Delta R^2 = .09$; $\Delta F(3, 370) = 1.047$, $p = .372$

Next, the third research question included in this study was the following: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of behavior-based capability control on salesperson outcome performance?

As shown in Table 8, in the first regression model conducted, statistical significance was indicated regarding capability control, which was also achieved significance in the second and third regression modes. In the first model, a one standard deviation increase in capability control was associated with a .14 standard deviation increase in the outcome. In the second model, this was.13, and was .14 in the third model. Only the first model achieved statistical significance, whereas the change in the *F*-statistics failed to achieve statistical significance in either case.

Table 8

Regression Analysis for Salesperson Outcome Performance: Research Question 3

Measure	*B*	*SE*	Beta	*t*
Model 1[a]				
Constant	5.52	0.04		136.44***
Capability Control (z)	0.11	0.04	0.14	2.65**
Model 2[b]				
Constant	5.52	0.04		135.85***
Capability Control (z)	0.11	0.04	0.14	2.60**
Task Complexity (z)	0.03	0.04	0.04	0.65
Product Complexity (z)	0.01	0.04	0.02	0.33
N. of Accounts (z)	0.03	0.04	0.03	0.62
Model 3[c]				
Constant	5.51	0.04		132.85***
Zscore(Capability_control)	0.12	0.04	0.15	2.79**
Zscore(Task_complexity)	0.02	0.04	0.03	0.50
Zscore(Product_complexity)	0.02	0.04	0.02	0.41
N. of Accounts (z)	0.02	0.04	0.02	0.46
CC (z) * TC (z)	-0.02	0.05	-0.03	-0.52
CC (z) * PC (z)	-0.02	0.04	-0.03	-0.58
CC (z) * A (z)	0.06	0.05	0.07	1.32

Note. *p<.05, **p<.01, ***p<.001; B = Unstandardized regression coefficients; Beta = Standardized regression coefficients.

Model 1:
R^2 = .018, Adjusted R^2 = .016; [a]$F(1, 376) = 7.01$, $p < .01$
Model 2:
R^2 = .021, Adjusted R^2 = .011; $F(4, 373) = 2.01$, $p = .092$
Model 3:
R^2 = .029, Adjusted R^2 = .010; $F(7, 370) = 1.56$, $p = .145$
Model 2 vs Model 1:
$\Delta R^2 = .03$; $\Delta F(3, 373) = .360$, $p = .782$
Model 3 vs Model 2:
$\Delta R^2 = .08$; $\Delta F(3, 370) = .965$, $p = .409$

The fourth research question included in the study consisted of the following: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of activity control on salesperson outcome performance?

As shown in Table 9, the effect of activity control achieved statistical significance in all three models. In models one and two, a one standard deviation increase in this measure was associated with a .13 standard deviation increase in the outcome, while with regard to the third regression model, this figure increased to .14. Only the first regression model out of three achieved statistical significance, with the two changes in the *F*-statistic failing to achieve significance in both cases.

Table 9

Regression Analysis for Salesperson Outcome Performance: Research Question 4

Measure	*B*	*SE*	Beta	*t*
Model 1[a]				
Constant	5.51	0.04		136.72***
Activity Control (z)	0.12	0.05	0.13	2.48*
Model 2[b]				
Constant	5.52	0.04		135.11***
Activity Control (z)	0.12	0.05	0.13	2.43*
Task Complexity (z)	0.03	0.04	0.04	0.66
Product Complexity (z)	0.01	0.04	0.01	0.27
N. of Accounts (z)	0.03	0.04	0.04	0.69
Model 3[c]				
Constant	5.51	0.04		133.15***
Activity Control (z)	0.14	0.05	0.15	2.83**
Task Complexity (z)	0.03	0.04	0.03	0.58
Product Complexity (z)	0.01	0.04	0.01	0.12
N. of Accounts (z)	0.03	0.04	0.03	0.60
AC (z) * TC (z)	-0.07	0.05	-0.09	-1.54
AC (z) * PC (z)	0.02	0.05	0.03	0.47
AC (z) * A (z)	0.06	0.05	0.07	1.28

Note. *p<.05, **p<.01, ***p<.001; B = Unstandardized regression coefficients; Beta = Standardized regression coefficients.

Model 1:

R^2 = .016, Adjusted R^2 = .013; $F(1, 376) = 6.14$, $p < .05$

Model 2:

R^2 = .019, Adjusted R^2 = .008; $F(4, 373) = 1.80$, $p = .128$

Model 3:

R^2 = .032, Adjusted R^2 = .013; $F(7, 370) = 1.73$, $p = .101$

Model 2 vs Model 1:

$\Delta R^2 = .03$; $\Delta F(3, 373) = .366$, $p = .778$

Model 3 vs Model 2:

$\Delta R^2 = .13$; $\Delta F(3, 370) = 1.615$, $p = .185$

Regarding the regression analyses reported here, the regression assumptions were systematically examined. Univariate normality was examined for all quantitative variables within these regression models, including the dependent and independent variables, through the construction of histograms and QQ plots. Within these plots, the normal curve was superimposed, with measures of skewness and kurtosis also calculated. These results did not indicate extreme non-normality with respect to any of these measures. Next, , scatterplots were generated for each independent variable, illustrating the bivariate relationship between the independent variable and the dependent variable. Additionally, a LOESS curve was superimposed on these plots in SPSS to help illustrate whether the relationship is reasonably linear. The thickness of the scatterplot around the superimposed curve was examined to determine whether it changes on the basis of the level of the independent variable in order to visually check for homoscedasticity. These plots failed to indicate heteroscedasticity, and these scatterplots suggested the potential for non-linear relationships with respect to task complexity and product complexity on salesperson performance. New variables were constructed for the predictors of task complexity and product complexity by subtracting the mean from the raw measures and squaring the results. The inclusion of these two measures with respect to the relevant three regression models failed to indicate statistical significance in any case. Based on these results, none of the regression models were modified as non-linearity was not indicated. Next, plots were examined of the residuals versus the predicted values to ensure that there were no trends or outliers. An examination of these plots did not indicate either trends or extreme outliers. Additionally, the variance inflation factors were calculated with respect to all regression analyses. These results are reported in Appendix

A and failed to indicate multicollinearity in any case. Additionally, whether there were outliers in these regression analyses was tested by specifying that the studentized residuals presented within these models, along with measures of Cook's distance. These results indicated a maximum Cook's distance of .101, with a small number of studentized residuals whose absolute values were slightly above three. Overall, these results do not suggest influential outliers.

Inferential Statistics: Objective Performance Data

This section presents and discusses the results of the analysis conducted on the second dependent variable, focusing upon the outcome of quota achievement. Initial descriptive statistics are omitted from this section as they were reported previously. A series of four linear regression analyses were conducted on these data, serving to explore this study's four research questions.

Initially, these data were analyzed for the presence of missing data. All variables included in the regression models were focused on, and cases were dropped in any cases where missing data was present regarding these variables. This reduced the total sample size, which was originally 472, by 72 cases. Additionally, these data were analyzed for outlying values, which were defined as any values more extreme than three standard deviations above or below the mean. The removal of these outlying cases resulted in 26 additional cases being dropped from the dataset, producing a total sample size of 374.
A series of four linear regression analyses were conducted to explore the four research questions included in this study. The first research question included here consisted of the following: Are there relationships between the three types of sales management control and quota achievement?

The results of the linear regression analysis associated with this research question are presented in Table 10. The independent variable of activity control achieved statistical significance in this analysis. In this model, a one standard deviation increase in activity control was associated with a .24 standard deviation increase in the outcome. Additionally, this regression model achieved statistical significance based on the ANOVA conducted.

Table 10

Regression Analysis for Quota Attainment: Research Question 1

Measure	*B*	*SE*	Beta	*t*
Constant	71.58	16.45		4.35***
Outcome Control	-4.81	3.81	-0.10	-1.26
Capability Control	-0.55	2.92	-0.02	-0.19
Activity Control	10.98	4.49	0.24	2.44*

Note. *p<.05, **p<.01, ***p<.001. $F(3, 340) = 3.35$, $p < .05$; $R^2 = .029$, Adjusted $R^2 = .020$; B = Unstandardized regression coefficients; Beta = Standardized regression coefficients.

The second research question included in this study consisted of the following: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of outcome control on quota achievement?

Table 11 reports the results of these analyses. Within these models, task complexity was achieved statistical significance. In model two, a one standard deviation increase in task complexity was associated with a .16 standard deviation decrease in the outcome, while this figure increased in magnitude to -.18 in the third model. Only the second of the three linear regression models achieved statistical significance on the basis of the ANOVA conducted, with the change in the *F*-statistic achieving statistical significance in the second but not the third model.

Table 11

Regression Analysis for Quota Attainment: Research Question 2

Measure	*B*	*SE*	Beta	*t*
Model 1[a]				
Constant	102.45	2.37		43.15***
Outcome Control (z)	3.26	2.86	0.06	1.14
Model 2[b]				
Constant	102.71	2.35		43.62***
Outcome Control (z)	2.96	2.89	0.06	1.02
Task Complexity (z)	-6.76	2.57	-0.15	-2.63**
Product Complexity (z)	-0.41	2.51	-0.01	-0.16
Accounts (z)	1.32	2.52	0.03	0.52
Model 3[c]				
Constant	102.19	2.40		42.64***
Outcome Control (z)	2.53	2.97	0.05	0.85
Task Complexity (z)	-7.37	2.64	-0.17	-2.79**
Product Complexity (z)	0.57	2.62	0.01	0.22
Accounts (z)	0.59	2.59	0.01	0.23
OC (z) * TC (z)	3.25	2.98	0.07	1.09
OC (z) * PC (z)	-2.12	3.00	-0.05	-0.71
OC (z) * A (z)	4.02	3.16	0.07	1.27

Note. *p<.05, **p<.01, ***p<.001; B = Unstandardized regression coefficients; Beta = Standardized regression coefficients.

Model 1:

R^2 = .004, Adjusted R^2 = .001; $F(1, 319) = 1.30$, $p = .256$

Model 2:

R^2 = .031, Adjusted R^2 = .019; $F(4, 316) = 2.56$, $p < .05$

Model 3:

R^2 = .039, Adjusted R^2 = .017; $F(7, 313) = 1.80$, $p = .087$

Model 2 vs Model 1:

$\Delta R^2 = .027$; $\Delta F(3, 316) = 2.97$, $p < .05$

Model 3 vs Model 2:

$\Delta R^2 = .008$; $\Delta F(3, 313) = .79$, $p = .499$

Next, the third research question included in this study was the following: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of behavior-based capability control on quota achievement?

As shown in Table 12, statistical significance in these regression models was achieved with respect to the predictors of task complexity in the second and third models. Regarding task complexity, a one standard deviation increase in this measure was associated with a .16 standard deviation decrease in the outcome measure in both the second and third models. Again, in this analysis only the second linear regression model achieved statistical significance, with the change in the *F*-statistic also achieving significance here, but not in the third model.

Table 12

Regression Analysis for Quota Attainment: Research Question 3

Measure	*B*	*SE*	Beta	*t*
Model 1[a]				
Constant	102.45	2.34		43.70***
Capability Control (z)	4.43	2.49	0.10	1.78
Model 2[b]				
Constant	102.75	2.33		44.12***
Capability Control (z)	3.65	2.52	0.08	1.45
Task Complexity (z)	-6.53	2.56	-0.15	-2.55*
Product Complexity (z)	-0.30	2.50	-0.01	-0.12
Accounts (z)	1.15	2.52	0.03	0.46
Model 3[c]				
Constant	103.10	2.39		43.06***
Capability Control (z)	3.35	2.56	0.08	1.31
Task Complexity (z)	-6.51	2.58	-0.15	-2.52*
Product Complexity (z)	-0.47	2.54	-0.01	-0.18
Accounts (z)	1.48	2.59	0.03	0.57
CC (z) * TC (z)	1.33	2.75	0.03	0.48
CC (z) * PC (z)	-0.34	2.45	-0.01	-0.14
CC (z) * A (z)	-1.93	2.90	-0.04	-0.67

Note. *p<.05, **p<.01, ***p<.001; B = Unstandardized regression coefficients; Beta = Standardized regression coefficients.

Model 1:
R^2 = .010, Adjusted R^2 = .007; $F(1, 319) = 3.17$, $p = .076$
Model 2:
R^2 = .035, Adjusted R^2 = .022; $F(4, 316) = 2.83$, $p < .05$
Model 3:
R^2 = .037, Adjusted R^2 = .016; $F(7, 313) = 1.72$, $p = .103$
Model 2 vs Model 1:
$\Delta R^2 = .025$; $\Delta F(3, 316) = 2.70$, $p < .05$
Model 3 vs Model 2:
$\Delta R^2 = .002$; $\Delta F(3, 313) = .28$, $p = .841$

The fourth research question included in this study consisted of the following: Does task complexity, product complexity, and number of accounts in direct, business-to-business sales moderate the effects of activity control on quota achievement?

As shown in Table 13, statistical significance was achieved with respect to the effects of activity control in all three models, and task complexity in both models two and three. First, regarding activity control, a one standard deviation increase in this measure was associated with a .13 standard deviation increase in the outcome for model one, with this figure decreasing slightly to .12 in models two and three. Next, regarding task complexity, a one standard deviation increase in this measure was associated with a .16 standard deviation decrease in the outcome in the second model, with this figure representing a .15 standard deviation decrease in the third model. All three regression models achieved statistical significance, with the change in the *F*-statistic achieving significance in the second, but not third, model.

Table 13

Regression Analysis for Quota Attainment: Research Question 4

Measure	*B*	*SE*	Beta	*t*
Model 1[a]				
Constant	102.05	2.35		43.38***
Activity Control (z)	6.33	2.75	0.13	2.30*
Model 2[b]				
Constant	102.35	2.34		43.81***
Activity Control (z)	5.77	2.77	0.12	2.08*
Task Complexity (z)	-6.65	2.55	-0.15	-2.60**
Product Complexity (z)	-0.16	2.49	0.00	-0.06
Accounts (z)	0.96	2.51	0.02	0.38
Model 3[c]				
Constant	102.49	2.39		42.86***
Activity Control (z)	5.86	2.85	0.12	2.05*
Task Complexity (z)	-6.35	2.58	-0.15	-2.46*
Product Complexity (z)	-0.50	2.55	-0.01	-0.20
Accounts (z)	0.97	2.59	0.02	0.37
AC (z) * TC (z)	-0.12	2.78	0.00	-0.04
AC (z) * PC (z)	2.84	2.80	0.06	1.01
AC (z) * A (z)	1.05	3.19	0.02	0.33

Note. *p<.05, **p<.01, ***p<.001; B = Unstandardized regression coefficients; Beta = Standardized regression coefficients.

Model 1:
R^2 = .016, Adjusted R^2 = .013; $F(1, 319) = 5.30$, $p < .05$
Model 2:
R^2 = .041, Adjusted R^2 = .029; $F(4, 316) = 3.40$, $p < .05$
Model 3:
R^2 = .045, Adjusted R^2 = .024; $F(7, 313) = 2.12$, $p < .05$
Model 2 vs Model 1:
ΔR^2 = .025; $\Delta F(3, 316) = 2.74$, $p < .05$
Model 3 vs Model 2:
ΔR^2 = .004; $\Delta F(3, 313) = .44$, $p = .724$

The regression assumptions were examined through the use of diagnostic tests and figures. Univariate normality was examined for all quantitative variables within these

regression models, including the dependent and independent variables, through the construction of histograms and QQ plots. Within these plots, a normal curve was superimposed, with measures of skewness and kurtosis also calculated. These results did not indicate extreme non-normality regarding any of these measures. Next, with respect to each independent variable, a scatterplot was generated illustrating the bivariate relationship between the independent variable and the dependent variable. Additionally, a LOESS curve was superimposed on these plots in SPSS to help illustrate whether the relationship is reasonably linear. The thickness of the scatterplot around the superimposed curve was examined to determine whether it changes on the basis of the level of the independent variable in order to visually check for homoscedasticity. These plots failed to indicate heteroscedasticity. Next, plots were examined of the residuals versus the predicted values to ensure that there were no trends or outliers. An examination of these plots did not indicate either trends or extreme outliers. Additionally, the variance inflation factors were also calculated for all regression analyses. These results are reported in Appendix B and failed to indicate multicollinearity in any case. Additionally, whether there were outliers in these regression analyses was tested by specifying that the studentized residuals be presented within these models, along with measures of Cook's distance. These results indicated a maximum Cook's distance of .149, with a small number of studentized residuals whose absolute values were slightly above three. Overall, these results do not suggest influential outliers.

Conclusion

Regarding the first dependent variable, the results of the analyses conducted only found statistical significance with respect to the effects of outcome control in the first

hierarchical regression, along with the effects of capability control and activity control in the second and third hierarchical linear regression models, respectively. In all cases, significant, positive impacts of these measures on the dependent variable were found. Despite these significant results, none of the four research questions included in this study were found to be supported on the basis of the analyses conducted.

In relation to the second dependent variable, the results of the analyses conducted for this study indicated a substantial number of statistically significant results. With regard to this study's research questions, with respect to the first outcome analyzed, support was not found for any of the four research questions as no significant results were found in the first regression model conducted. Support was not found for research questions two through four due to the lack of any significant findings relating to the interaction effects, which served to test for the existence of significant moderation. Regarding the outcome of quota achievement, the first hypothesis was supported as activity control had a significant main effect. No significant interaction effects were identified to support hypotheses two through four.

Chapter 5: Discussion

Salesperson performance is a key contributor to organizational performance, and the primary goal of a salesperson is to achieve sales results (Behrman & Perreault, 1982). Sales managers can significantly influence the actions and behaviors of the salespeople they manage (Anderson & Oliver, 1987). Manager behavior can have both positive (Doyle & Shapiro, 1980) and negative effects (CEB Sales and Service, 2012; Jones et al., 1996) on salespersons' ability to achieve their revenue targets. Although the role of sales manager is a powerful one and can dramatically influence salesperson performance, managers often receive very little training on how to do their job (Dubinsky et al., 2001) and are not given specific guidance on how to best allocate their time and effort (Beck, 2006). Because the sales manager has a direct impact on seller performance, the purpose of this quantitative study was to examine the relationships between three types of management control (outcome, capability, activity) and salesperson outcome performance. The second purpose of this study was to examine whether product complexity, task complexity, and number of accounts moderated the above relationships.

The research questions for the study were examined by the two sets of regression analyses—the first with a self-report measure of salesperson outcome performance as the dependent variable and the second with sales quota achievement as the dependent variable. A summary of the findings is provided in Table 14.

The study findings provided evidence for the relationships addressed in Research Question 1: Are there relationships between the three types of sales management control and salesperson outcome performance? In H_a1 it was hypothesized that outcome control, capability control, and activity control would be positively related with salesperson

outcome performance. In the first set of analyses using the self-report measure of salesperson outcome performance, statistical significance was found with respect to the positive effects of outcome control in the first hierarchical regression, and for capability and activity control in the second and third hierarchical regressions. In the analyses with self-rated salesperson performance as the dependent variable, direct effects of outcome control, capability control, and activity control were statistically significant when entered separately but not when entered simultaneously as independent variables. High correlations between the management control constructs may have contributed to the lack of significant effects of the control variables when entered simultaneously.

In the second analysis conducted using the objective measure of percentage of quota achievement, partial support was found for H_a1. Statistical significance was indicated with respect to the positive impacts of activity control on quota achievement. Unlike the first analysis, this analysis failed to indicate a significant effect of either outcome or capability control on objective quota achievement. The positive relationship between activity control and salesperson performance was significant for both the self-rated and objective performance measures; however, the effect was much larger in the objective measurement condition. The impact of activity control on salesperson outcome performance (self-report) was significant and positive such that a one standard deviation increase in activity control was associated with a 0.13 standard deviation increase in salesperson outcome performance. The impact of activity control on quota attainment was significant and positive such that a one standard deviation in activity control was associated with a 0.24 standard deviation in quota attainment. This was a 54% difference in effect size between the self-report and objective performance conditions.

No clear support was indicated for the moderating effects of task complexity, product complexity, and number of accounts on the relationship between management control (outcome, capability, activity) and the self-report measure of salesperson outcome performance. This lack of significant moderation was evidenced through the fact that absence of statistical significance for the interaction effects included in these models, which served to test for moderation. A similar lack of significant moderation was found with respect to task complexity, product complexity, and number of accounts on the relationship between management control (outcome, capability, activity) and quota achievement.

A direct negative effect of task complexity was found on quota achievement. In all three of the hierarchical regression analyses with quota achievement as the dependent variable, a statistically significant negative effect of task complexity was found. However, the direct effect of task complexity was not significant in the regression analyses with the self-report measure of salesperson outcome performance as the dependent variable. In other words, task complexity had a significant negative effect on salesperson quota attainment, but not salesperson outcome performance. This variation in findings within the same study suggest the need to use objective performance data to determine direct effects of controls, and role-based variables such as task complexity, on salesperson performance.

Table 14

Statistical Significance of the Independent Variables in the Regression Models Predicting Sales Performance

Independent Variables	Dependent Variable	
	Salesperson Outcome Performance (self-rated)	Sales Quota Attainment (objective measure)
Direct effects:		
Outcome control	Significant (positive)	Not significant
Capability control	Significant (positive)	Not significant
Activity control	Significant (positive)	Significant (positive)
Task complexity	Not significant	Significant (negative)
Product complexity	Not significant	Not significant
No. of Accounts	Not significant	Not significant
Moderating Effects:		
Outcome control X		
Task complexity	Not significant	Not significant
Product complexity	Not significant	Not significant
No. of Accounts	Not significant	Not significant
Capability control X		
Task complexity	Not significant	Not significant
Product complexity	Not significant	Not significant
No. of Accounts	Not significant	Not significant
Activity control X		
Task complexity	Not significant	Not significant
Product complexity	Not significant	Not significant
No. of Accounts	Not significant	Not significant

Interpretation of Findings

The first objective was to determine whether a direct effect between sales management control and salesperson performance existed in a population of business-to-business salespeople selling directly to end customers. I chose the theoretical framework

of outcome control, activity control, and capability control put forth by Challagalla and Shervani (1996) because they separated the construct of behavior control (Jaworski & MacInnis, 1989) into two separate constructs. This study was the first to address the moderating effects of task complexity, product complexity, and number of accounts on the relationship between the three types of management control (outcome, activity, capability) and salesperson performance in a business-to-business, direct sales environment. By examining the way these three role-based factors (task complexity, product complexity, number of accounts) influenced the control-performance relationship, I hoped to provide additional clarity for researchers and sales managers regarding the specifics of when different types of control are most useful. This additional clarity could provide tactical guidance for sales managers and leaders when managing salespeople with different role characteristics, as well as direct future research on this important topic, which has been inconsistent at best, with mixed findings that have been hard to compare and interpret.

In the first set of analyses using the subjective measure of salesperson outcome performance, a direct positive effect of outcome control on salesperson performance was found. This positive direct effect of outcome control on salesperson performance was consistent with the findings of Evans et al. (2007) and Miao et al. (2007) but contradicted the findings of Challagalla and Shervani (1996) who found no effect of outcome control on salesperson outcome performance. Both Evans et al. and Miao et al. examined salesperson populations in a business-to-business sales environment; however, Miao et al. included business-to-consumer salespeople in their study. In the second set of analyses using the objective measure of quota achievement as the dependent variable, a significant

effect of outcome control on salesperson quota achievement was not found. This indicated that the use of performance measure (subjective or objective) is important and could lead to different results within the same sample.

Although Challagalla and Shervani (1996) found no direct effect of management controls (capability, activity, outcome) on salesperson performance in their study of salespeople in a business-to-business sales environment, they did find an indirect effect via supervisor role ambiguity. This indirect effect of management controls on salesperson performance was supported in studies by Kohli et al. (1998) and Fang et al. (2005). Challagalla and Shervani proposed that activity and capability controls have different impacts on salesperson performance. Their assertion was supported by Kohli et al. in that outcome and activity control positively and significantly influenced salespeople's performance orientation, but capability control had no impact on salespeople's performance orientation. Salesperson performance orientation was positively and significantly related to salesperson performance (Kohli et al., 1998). Fang et al. found an indirect effect of outcome control on salesperson performance via goal-setting characteristics, providing further support for Challagalla and Shervani's proposition.

Unlike the findings of Kohli et al. (1998), Challagalla and Shervani (1996), and Evans et al. (2007), I found a direct positive effect of outcome, capability, and activity control on the subjective measure of salesperson performance, and activity control when using the objective measure of salesperson quota achievement. The direct positive effects of both activity and capability control on the subjective measure of salesperson outcome performance, as well as the direct positive effects of activity control on salesperson quota achievement were in contrast with the findings of Miao et al. (2007), who found no effect

of activity control and a negative effect of capability control on salesperson performance. The inconsistency between the findings of this present study and those of Miao et al. could possibly be explained because the Miao et al. study involved a combination of business-to-business and business-to-consumer salespeople, whereas this study included only a business-to-business salesperson sample.

Challagalla et al. (2000) found a moderating effect of salesperson location on the relationship between sales management control and salesperson performance. Challagalla et al. examined the impact of task complexity on the management control-salesperson performance relationship and found that task complexity failed to moderate the control-performance relationship. This failure to find a moderating effect of task complexity was similar to my study; however, I found a direct and significant negative effect of task complexity on salesperson performance, which extended the findings of Challagalla et al.

Menguc and Tansu Barker (2003) were the only researchers to find a moderating effect of task complexity on the management control-sales performance relationship; however, they used the Anderson and Oliver (1987) conceptualization of behavior control as a single construct as compared to the Challagalla and Shervani (1996) conceptualization of behavior control as the separate constructs of activity and capability control. This finding, using the Challagalla and Shervani scales for behavioral control, was not replicated in the present study.

Flaherty et al. (2007) found that product complexity impacted the control performance relationship such that process control positively and significantly impacted salesperson performance when product complexity was high and low, but not when product complexity was moderate. Output control had a positive significant effect on

performance when product complexity was high. Results from the present study did not support this finding as neither a direct nor a moderating effect of product complexity was found on salesperson performance. Atuahene-Gima and Li (2002) found that product complexity failed to moderate the relationship between management control and salesperson performance even though they studied the same population as Flaherty et al. and used the same measurement scales developed by Jaworksi and MacInnis (1989) that measure process (behavior) control as a single construct. In this present study, I used the Challagalla and Shervani (1996) separate scales of activity and capability controls to measure the behavioral elements of management control. It is likely that this variation in scales used could explain the difference in study findings.

Theoretical Implications

A key element of organization theory (Ouchi, 1979) involves the role expectations communicated to salespeople by their sales managers (Jones et al., 1996). According to Doyle and Shapiro (1980), leader clarity setting and communicating expectations regarding salesperson activities was the most significant contributor to salesperson motivation. Challagalla and Shervani's (1996) separation of activity and capability controls was supported in my study as both types of control significantly and positively impacted salesperson performance when using the subjective measure of salesperson outcome performance, and activity control significantly and positively impacted objective quota achievement. In other studies, behavior control was found to have no impact on salesperson performance (Oliver & Anderson, 1994; Panagopoulos et al., 2015) or to have a negative impact on salesperson performance (Ahearne et al., 2010).

Another consideration of organizational theory (Ouchi, 1979) is the link between means-ends relationships (Eisenhardt, 1985). The more complex the means-ends relationships, the more difficult it is to institute behavior or process controls, and outcome controls are the control of choice. The less complex the means-ends relationships, the more applicable behavior controls can be used to measure and impact the means sellers use to achieve certain outcomes. In the current study, task complexity was examined as the difficulty of the selling task from the salesperson's perspective. Higher levels of task complexity would indicate less clarity of the means-ends relationship of the salesperson's selling job. Although evidence was not found for the moderating impact of task complexity on the relationship between management control and salesperson performance, I found that task complexity was significantly and negatively related to salesperson performance, which was consistent with organizational theory (Ouchi, 1979) This is the only study that indicated this significant negative relationship between task complexity and salesperson performance in a business-to-business sales environment. Although this study indicated a direct effect versus a moderating effect, this negative direct effect of task complexity on salesperson performance has implications for how managers manage and coach using the various forms of management control. When the means-ends relationships are less clear, outcome control tends to be the control of choice (Eisenhardt, 1985); however, since task complexity can hinder the seller's ability to achieve quota attainment, it seems logical

that activity and capability control in the form of coaching when the seller's task is increasingly complex could reduce this negative effect.

One final consideration of organizational theory concerns the suggestion that outcome control is the preferred type of management control when means-ends relationships are unknown or unclear (Eisenhardt, 1985; Ouchi, 1979). The findings from the second set of regression analyses using quota attainment as the dependent variable were in direct contrast to this key tenet of organization theory. In this study, activity control was significantly and positively associated with higher quota attainment at the same time that task complexity (lack of clarity on means-ends relationships) was significantly and negatively associated with quota attainment. According to organizational theory, Ouchi and Eisenhardt would propose that when task complexity is high (knowledge of means-ends relationships is low), outcome control would be the control of choice, which was not indicated in the results of this study.

Limitations

This study was conducted in a business-to-business sales environment and cannot be effectively compared to other sales environments such as business-to-consumer or channel sales. Business-to-consumer sales tend to be less complex than business to business sales. Consistent with organizational theory, the greater the knowledge of means-ends relationships as in the case of a less complex business-to-consumer environment, the more appropriate the application of behavioral controls (Eisenhardt, 1985). Channel sales involve indirect relationships between sales managers and salespeople and can occur in both simple and complex sales environments. Any comparison of the findings of this study to a channel sales environment would necessitate

consideration of the complexity of the sale: the lower the complexity of the channel sale, the less relevant the findings of this study.

I conducted this study using the Challagalla and Shervani's (1996) conceptualizations of activity and capability control and the findings cannot be compared to other studies using other instruments to measure behavior control as a single construct. Jaworski and MacInnis (1989) and Anderson and Oliver (1996) measured behavior control as a single construct as compared to Challagalla and Shervani's (1996) separation into activity and capability control. Researchers have cited the use of different measures as one of the primary reasons for inconsistent findings of prior studies of the relationship between behavioral controls and salesperson performance (Challagalla & Shervani, 1996).

In this study, I recruited salespeople to report their perspectives on all constructs. It is reasonable to expect that salespeople will have different perspectives about the management controls in effect as compared to the perspectives of sales managers and sales and marketing executives. This study should only be compared to other studies that used a similar salesperson population to assess management controls in effect.

The scope of this study was limited regarding the number of organizations, the size of the population, and the study method. This study involved only one company and may not be effectively compared to cross-organizational studies that survey one or two people in each organization. Also, although the sample size of 374 was sufficient for statistical analysis, the response rate represented only 9.35% of the total sales population. It is possible that inclusion of the other 90.65% could have generated a very different set of outcomes. In addition, this study was based on a convenience sample not a random

sample; therefore, generalizability to the broader population of salespeople is limited. This was a correlational study, not an experimental study. Because correlation does not necessarily imply causation, the reader is strongly cautioned when interpreting the statistically significant regression results reported in this study.

Finally, despite the widespread use of self-report data in the social sciences, self-report data are often viewed as lacking in validity and may call into question any inferences drawn from the use of such data (Lance & Vandenberg, 2009, p. 309). Although this study involved a self-report measure of salesperson outcome performance, I also included an objective performance measured reported as percentage of quota attainment. My findings of direct effects of outcome, capability control, and activity control on salesperson performance in the self-report condition, and effects of only activity control on salesperson performance in the objective performance condition, corroborate the potential limitations associated with inferences drawn from self-report measures.

Recommendations

Because I failed to identify moderating effects of the three sales role characteristics (task complexity, product complexity, number of accounts) on the control-performance relationship, the following recommendations are offered to potentially close this gap in the management control literature.

One recommendation is to conduct a study of business-to-business salespeople using the three primary theoretical constructs of Anderson and Oliver (1989), Jaworksi and MacInnis (1989), and Challagalla and Shervai (1996) in the same study and compare the results. Although I did not find moderating effects of product complexity, task

complexity, or number of accounts on the relationship between sales management control and salesperson performance, it is possible that a moderating effect could be found using alternative instruments to measure management control. In their study of salespeople in business-to-business sales, Panagopoulos et al. (2015) found different results for the management control – sales performance relationship based on the measures used. Panagopoulos et al. used both the Jaworski and MacInnis (1989) management control scales and the Anderson and Oliver (1989) scales in the same study and found that the scales used impacted the results obtained. Since Panagopoulos et al. did not incorporate a measure that separated behavior control into the separate constructs of activity and capability control (Challagalla & Shervani, 1996), the use of this additional measure could provide an important comparison of the difference in results using the three most pervasive measures of sales management control.

A second recommendation is to conduct a study of both business-to-business and business-to-consumer sales environments in the same study to examine the differences in effects of management control on salesperson performance between the two populations. The sales environment could be used as a moderating variable similar in nature to the study conducted by Challagalla et al. (2000) who used salesperson location as a moderating variable of the management control – sales performance relationship. Although it would not make sense in this context to examine number of accounts in a study of business-to-consumer sales, both task and product complexity could still be considered and examined as potential moderators.

A final recommendation is to conduct a study of the management control – sales performance relationship using the Challagalla and Shervani's (1996) scales for activity,

capability, and outcome control and use length of sales cycle as a potential moderating variable. This could provide an alternative way to examine product complexity because the more complex the product, the longer it takes to sell. The measure of product complexity that was used in this study (Slater & Olson, 2000) may not have been the best measure to examine the way complexity of the sales task impacts the management control – sales performance relationship.

All three of the above recommendations could benefit from gathering both salesperson and sales manager perspectives, and then comparing the two perspectives within studies. This could assist researchers in determining measure-to-measure variation and population-to-population variation.

Practical and Social Implications

The confirmation that all types of management control examined in this study (outcome, activity, capability) had a significant, positive effect on subjective salesperson outcome performance highlights the need to ensure that sales managers in business-to-business sales consider the degree to which they incorporate the three types of management control into their everyday management practices. In the cases where objective quota achievement is tracked and used to drive salesperson compensation, the use of activity control was the only type of management control that had a positive and significant impact. As the proliferation of customer relationship management systems becomes more pervasive in sales organizations of all sizes, the ability to track and report sales results (outcomes) is ubiquitous. The ability of sales managers and leaders to know at any point in time how a salesperson is performing against their revenue targets could give managers and leaders a false sense of control without paying attention to the means-

ends relationship (Ouchi, 1979) that generates the outcomes achieved. By ensuring that sales managers incorporate activity measures and practices, sales managers can apply the most relevant approach to managing their sales teams.

The social implications of this study are quite practical. Doyle and Shapiro (1980) found that the degree to which salespeople see the direct relationship between the tasks they are expected to perform and the results they are held accountable to achieve was the most significant contributor to salesperson motivation. This examination of task clarity was directly in line with the importance of knowing the means-ends relationship (Eisenhardt, 1985; Ouchi, 1979) between activities and results. The finding that activity control was significantly and positively related to salesperson performance gives managers a practical way to improve the conditions in which salespeople work by improving the seller's understanding of what is needed to succeed in their job. This finding is also practical from the sales manager's perspective. Activities are the only type of metric that are within the direct control of the sales manager (Jordan & Vazzana, 2012). Although revenue performance determines the level of compensation a seller receives, sales managers cannot directly control revenue performance, they can only track it. By directly linking seller activities to desired outcomes, and focusing on execution of those activities, managers can have a direct and positive impact on seller performance.

Conclusion

The purpose of this study was to examine the moderating effects of task complexity, product complexity, and number of accounts on the management control-sales performance relationship. This study included examination of both subjective and objective performance measures. The use of different measures produced different

results. Using the subjective performance measure as the dependent variable, statistically significant and positive direct effects of outcome, capability, and activity control on salesperson performance were found. However, with salesperson quota attainment as the as the dependent variable, only activity control had a statistically significant positive effect. Also task complexity had a significant negative association with salesperson quota attainment; but there was not a significant relationship between task complexity and self-rated salesperson performance, The differences in results for the two dependent variables in the current study could call into question the validity of prior studies using subjective measures of salesperson performance. In addition, a statistically significant negative effect of task complexity on salesperson performance occurred when quota achievement was used as the performance measure. This extends the findings of prior studies using the Challagalla and Shervani (1996) management control scales.

These findings must be carefully considered due to several limitations. This study involved sellers from one company in a business-to-business environment. These results may not be effectively compared to studies involving multiple company samples, or studies in a business-to-consumer environment. In addition, this study involved perceptions of management control from a salesperson perspective as opposed to the sales manager's perspective.

Although the findings of this study extend findings of prior studies, additional research is needed. Three recommendations could be useful in further extending management control research. First, a study could be conducted in a business-to-business context using all three of the primary management control measurement scales. A second recommendation is to conduct a study of both business-to-business and business-to-

consumer populations within the same study and compare the results. Finally, it could be useful to conduct a similar stud to this one, with the exception that sales cycle length is examined as the moderating variable.

From a practical perspective, the findings from this study can help sales managers drive better salesperson performance. Sales managers can achieve better performance outcomes, specifically regarding quota attainment, by orienting their behaviors toward activity control. In addition, sales manager use of activity control may reduce the negative effects of task complexity on quota attainment by creating clarity of task for sellers when the means-ends relationships (as is the case in more complex sales) are less clear.

References

Agarwal, S. (1999). Impact of job formalization and administrative controls on attitudes of industrial salespersons. *Industrial Marketing Management, 28*(4), 359-368. Doi:10.1016/S0019-8501(98)00026-1

Ahearne, M., Jones, E., Rapp, A., & Mathieu, J. (2008). High touch through high tech: The impact of salesperson technology usage on sales performance via mediating mechanisms. *Management Science, 54*(4), 671-685. doi:10.1287/mnsc.1070.0783

Ahearne, M., Rapp, A., Hughes, D. E., & Jindal, R. (2010). Managing sales force product perceptions and control systems in the success of new product introductions. *Journal of Marketing Research, 47*(4), 764-776. doi:10.1509/jmkr.47.4.764

Anderson, E., & Oliver, R. L. (1987). Perspectives on behavior-based versus outcome-based salesforce control systems. *Journal of Marketing, 51*(4), 76-88. doi:10.2307/1251249

Anderson, E., & Onyemah, V. (2006). How right should the customer be? *Harvard Business Review, 84*(7/8), 58. PMID:16846189

Anderson, S. W. (1995). Measuring the impact of product mix heterogeneity on manufacturing overhead cost. *Accounting Review*, 363-387. Retrieved from http://www.jstor.org/stable/248530

Atuahene-Gima, K., & Li, H. (2002). When Does Trust Matter? Antecedents and Contingent Effects of Supervisee Trust on Performance in Selling New Products in China and the United States. *Journal of Marketing, 66*(3), 61-81. doi:10.1509/jmkg.66.3.61.18501

Aulakh, P. S., & Gencturk, E. F. (2000). International principal–agent relationships: Control, governance and performance. *Industrial Marketing Management, 29*(6), 521-538. doi:10.1016/S0019-8501(00)00126-7

Babakus, E., Cravens, D. W., Grant, K., Ingram, T. N., & LaForge, R. W. (1996). Investigating the relationships among sales, management control, sales territory design, salesperson performance, and sales organization effectiveness. *International Journal of Research in Marketing, 13*(4), 345-363. doi:10.1016/S0167-8116(96)00016-X

Babbie, E. R. (2012). *The practice of social research*. Belmont, CA: Wadsworth.

Bächli-Bolvako, N. (2011). *Exploration of salespeople activities and behaviour in information technology selling* (Doctoral dissertation, University of St. Gallen, St. Gallen, Switzerland).

Baiman, S. (1982), *Agency research in managerial accounting: A survey* (Unpublished doctoral dissertation). University of Pittsburgh, Pittsburgh, PA.

Baldauf, A., & Cravens, D. W. (1999). Improving the effectiveness of field sales organizations: A European perspective. *Industrial Marketing Management, 28*(1), 63-72. doi:10.1016/S0019-8501(98)00023-6

Baldauf, A., Cravens, D. W., & Grant, K. (2002). Consequences of sales management control in field sales organizations: A cross-national perspective. *International Business Review, 11*(5), 577-609. doi:10.1016/S0969-5931(02)00038-0

Baldauf, A., Cravens, D. W., & Piercy, N. F. (2001). Examining the consequences of sales management control strategies in European field sales organizations.

International Marketing Review, 18(5), 474-508. doi:10.1108/EUM0000000006042

Baldauf, A., Cravens, D. W., & Piercy, N. F. (2005). Sales management control research--Synthesis and an agenda for future research. *Journal of Personal Selling & Sales Management, 25*(1), 7-26. doi:10.1080/08853134.2005.10749044

Barker, A. T. (2001). Salespeople characteristics, sales managers' activities and territory design as antecedents of sales organization performance. *Marketing Intelligence & Planning 19*(1), 21-28. doi:10.1108/02634500110363772

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173. doi:10.1037/0022-3514.51.6.1173

Bayus, B. L., & Putsis Jr, W. P. (1999). Product proliferation: An empirical analysis of product line determinants and market outcomes. *Marketing Science*, *18*(2), 137-153. doi:10.1287/mksc.18.2.137

Beck, J. A. (2006). The importance of sales managers' activities and time allocation toward job success in lodging properties. *Journal of Human Resources in Hospitality & Tourism, 5*(2), 1-12. doi:10.1300/J171v05n02_01

Behrman, D. N., & Perreault, W. D. (1982). Measuring the performance of industrial salespersons. *Journal of Business Research, 10*(3), 355-370. doi:10.1016/0148-2963(82)90039-X

Bello, D. C., & Gilliland, D. I. (1997). The effect of output controls, process controls, and flexibility on export channel performance. *Journal of Marketing, 61*(1), 22-38. doi:10.2307/1252187

Bergen, M., Dutta, S., & Walker Jr, O. C. (1992). Agency relationships in marketing: A review of the implications and applications of agency and related theories. *Journal of Marketing,* 1-24. doi:10.2307/1252293

Blau, P. M., & Scott, W. R. (1962). *Formal organizations: A comparative approach.* Stanford, CA: Stanford University Press.

Boulding, K. E. (1956). General systems theory-the skeleton of science. *Management Science, 2*(3), 197-208. doi:10.1287/mnsc.2.3.197

Brown, S. P., Evans, K. R., Mantrala, M. K., & Challagalla, G. (2005). Adaptation motivation, control, and compensation research to a new environment. *Journal of Personal Selling & Sales Management*, 25(2), 155-167. Retrieved from http://www.jpssm.com

Bryman, A. (2012). *Social research methods (4th ed.).* Oxford, England: Oxford University Press.

Campbell, D. J. (1988). Task complexity: A review and analysis. *Academy of Management Review*, *13*(1), 40-52. doi:10.5465/AMR.1988.4306775

Campbell, D. J., & Gingrich, K. F. (1986). The interactive effects of task complexity and participation on task performance: A field experiment. *Organizational Behavior and Human Decision Processes*, *38*(2), 162-180. doi:10.1016/0749-5978(86)90014-2

CEB Sales and Service (2012, July 17). The Cost of a Failed Sales Manager? $4 Million…. Retrieved from: https://www.cebglobal.com/blogs/the-cost-of-a-failed-sales-manager-4-million/

Challagalla, G. N., & Shervani, T. A. (1996). Dimensions and types of supervisory control: effects on salesperson performance and satisfaction. *Journal of Marketing 60*(1), 89-105. doi:10.2307/1251890

Challagalla, G., Shervani, T., & Huber, G. (2000). Supervisory orientations and salesperson work outcomes: The moderating effect of salesperson location. *The Journal of Personal Selling & Sales Management 20*(3), 161-171. doi:10.1080/08853134.2000.10754236

Choi, N. H., Dixon, A. L., & Jung, J. M. (2004). Dysfunctional behavior among sales representatives: The effect of supervisory trust, participation, and information controls. *Journal of Personal Selling & Sales Management 24*(3), 181-198. doi:10.1080/08853134.2004.10749030

Churchill, G. A., Jr., Ford, N.M, Hartley, S.W., & Walker, O.C. Jr. (1985). The determinants of salesperson performance: A meta-analysis. *Journal of Marketing Research 22*(2): 103. doi:10.2307/3151357

Cooper, R. G., Edgett, S. J., & Kleinschmidt, E. J. (1997). Portfolio management in new product development: Lessons from the leaders--I. *Research Technology Management, 40*(5), 16. doi:10.1080/08956308.1997.11671152

Coy, C. (2008). Sampling knowledge: The hermeneutics of snowball sampling in qualitative research. *International Journal of Social Research Methodology, 11*(4), 327-344. http://www.tandfonline.com/loi/tsrm20

Cravens, D. W., Ingram, T. N., LaForge, R., & Young, C. E. (1993). Behavior-based and outcome-based salesforce control systems. *Journal of Marketing 57*(4), 47. doi:10.2307/1252218

Cravens, D. W., Lassk, F. G., Low, G. S., Marshall, G. W., & Moncrief, W. C. (2004). Formal and informal management control combinations in sales organizations: The impact on salesperson consequences. *Journal of Business Research, 57*(3), 241-248. doi:10.1016/S0148-2963(02)00322-3

Cravens, D. W., Piercy, N. F., & Low, G.S. (2006). Globalization of the sales organization: Management control and its consequences. *Organizational Dynamics, 35*(3), 291-303. https://www.journals.elsevier.com/organizational-dynamics

Deeter-Schmelz, D. R., Kennedy, K. N., & Goebel, D. J. (2002). Understanding sales manager effectiveness: Linking attributes to sales force values. *Industrial Marketing Management, 31*(7), 617-626. doi:10.1016/S0019-8501(02)00182-7

Denzin, N. K. (2012). Triangulation 2.0. *Journal of Mixed Methods Research*, *6*(2), 80-88. doi:10.1177/1558689812437186

Doyle, S. X., & Shapiro, B. P. (1980). What counts most in motivating your sales force. *Harvard Business Review, 58*(3), 133-139. https://hbr.org/

Dubinsky, A. J., Mehta, R., & Anderson, R. E. (2001). Satisfaction with sales manager training-design and implementation issues. *European Journal of Marketing, 35*(1/2), 27-50. doi:10.1108/03090560110363337

Eisenhardt, K. M. (1985). Control: Organizational and economic approaches. *Management Science, 31*(2), 134-149. doi:10.1287/mnsc.31.2.134

Etzioni, A. (1965). Organizational control structure. *Handbook of organizations, 650*. Rand McNally, Chicago.

Evans, K. R., Landry, T. D., Po-Chien, L., & Shaoming, S. (2007). How sales controls affect job-related outcomes: the role of organizational sales-related psychological climate perceptions. *Journal of the Academy of Marketing Science, 35*(3), 445-459. doi:10.1007/s11747-007-0033-5

Fang, E., Evans, K. R., & Zou, S. (2005). The moderating effect of goal-setting characteristics on the sales control systems–job performance relationship. *Journal of Business Research, 58*(9), 1214-1222. doi: 10.1016/j.jbusres.2004.03.006

Flaherty, K. E., Arnold, T. J., & Hunt, C. S. (2007). The influence of the selling situation on the effectiveness of control: Toward a holistic perspective. *Journal of Personal Selling & Sales Management, 27*(3), 221-233. doi:10.2753/PSS0885-3134270302

Futrell, C. M., Swan, J. E., & Todd, J. T. (1976). Job performance related to management control systems for pharmaceutical salesmen. *Journal of Marketing Research (JMR), 13*(1). doi:10.2307/3150898

Galvin, P., & Morkel, A. (2001). The effect of product modularity on industry structure: the case of the world bicycle industry. *Industry and Innovation*, *8*(1), 31. doi:10.1080113662710123003439 2

Grant, K., & Cravens, D. W. (1996). Examining sales force performance in organizations that use behavior-based sales management processes. *Industrial Marketing Management, 25*(5), 361-371. doi:1016/0019-8501(96)00038-7

Gravetter, F. J., & Wallnau, L. B. (2009). *Statistics for the behavioral sciences*. (8th ed). Wadswoth, OH: Cengage Learning.

Green, S. B., & Salkind, N. J. (2010). *Using SPSS for Windows and Macintosh: Analyzing and understanding data*: Prentice Hall Press.

Jantan, M. A., Honeycutt, E. D., Thelen, S. T., & Attia, A. M. (2004). Managerial perceptions of sales training and performance. *Industrial Marketing Management, 33*(7), 667-673. doi:10.1016/j.indmarman.2003.09.003

Jaworski, B. J. (1988). Toward a theory of marketing control: Environmental context, control types, and consequences. *Journal of Marketing, 52*(July), 23-39. doi:10.2307/1251447

Jaworski, B. J., & Kohli, A. K. (1991). Supervisory feedback: Alternative types and their impact on salespeople's performance and satisfaction. *Journal of Marketing Research (JMR), 28*(2), 190-201. doi:10.2307/3172807

Jaworski, B. J., & Kohli, A. K. (1993). Market orientation: Antecedents and consequences. *Journal of Marketing, 57*(3), 53. doi:10.2307/1251854

Jaworski, B. J., & MacInnis, D. J. (1989). Marketing jobs and management controls: toward a framework. *Journal of Marketing Research (JMR), 26*(4), 406-419. doi:10.2307/3172761

Jaworski, B. J., & Merchant, K. A. (1988). Toward a theory of marketing control: Environmental context, control types, and consequences. *Journal of Marketing 52*(3), 23. doi:10.2307/1251447

Jaworski, B. J., Stathakopoulos, V., & Krishnan, H. S. (1993). Control combinations in marketing: Conceptual framework and empirical evidence. *Journal of Marketing 57*(1), 57. doi:10.2307/125205

John, G. & Weitz, B. (1989). Salesforce compensation: An empirical investigation of factors related to use of salary versus incentive compensation. *Journal of Marketing Research*: 1-14. doi:10.2307/3172665

Jones, E., Kantak, D. M., Futrell, C. M., & Johnston, M. W. (1996). Leader Behavior, Work-Attitudes, and Turnover of Salespeople: An Integrative Study. *Journal of Personal Selling & Sales Management, 16*(2), 13-23. doi:10.1080/08853134.1996.10754050

Jordan, J., & Vazzana, M. (2011). *Cracking the sales management code: The secrets to measuring and managing sales performance.* New York, NY: McGraw Hill.

Joshi, A. W., & Randall, S. (2001). The indirect effects of organizational controls on salesperson performance and customer orientation. *Journal of Business Research 54*(1), 1-9. doi:10.1016/S0148-2963(99)00119-8

Katsikea, E., Theodosiou, M., & Morgan, R. (2007). Managerial, organizational, and external drivers of sales effectiveness in export market ventures. *Journal of the Academy of Marketing Science, 35*(2), 270-283. doi:10.1007/s11747-007-0041-5

Kohli, A. K., Shervani, T. A., & Challagalla, G. (1998). Learning and performance orientation of salespeople: The role of supervisors. *Journal of Marketing Research, 35*(2), 263-274. doi:10.2307/3151853

Krafft, M. (1999). An Empirical Investigation of the Antecedents of Sales Force Control Systems. *Journal of Marketing, 63*(3). doi:10.2307/1251779

Lancaster, K. (1990). The economics of product variety: A survey. *Marketing Science*, *9*(3), 189-206. doi:10.1287/mksc.9.3.189

Lance, C., & Vandenberg, R. (2009). *Statistical and methodological myths and urban legends: Doctrine, verity and fable in the organizational and social sciences.* Routledge, Taylor, and Francis Group. New York, NY.

Lang, J. W., & Bliese, P. D. (2009). General mental ability and two types of adaptation to unforeseen change: applying discontinuous growth models to the task-changeparadigm. *Journal of Applied Psychology, 94*(2), 411. doi:10.1037/a0013803

Longino, E. (2007). *Sales management control, territory design, sales force performance, and sales organizational effectiveness in the pharmaceutical industry.* (3295001 D.B.A.), University of Phoenix, Ann Arbor. Retrieved from http://ezp.waldenulibrary.org/login?url=http://search.proquest.com/docview/304732361?accountid=14872

Lusch, R. F., & Jaworski, B. J. (1991). Management Controls, Role Stress, and Retail Store Manager Performance. *Journal of Retailing, 67*(4), 397. Retrieved from https://search.proquest.com/openview/7340b534a1054936eaa17ed71fce2e41/1?pq-origsite=gscholar&cbl=41988

Matsuo, M. (2009). The influence of sales management control on innovativeness of sales departments. *Journal of Personal Selling & Sales Management, 29*(4), 321-331. doi:10.2753/PSS0885-3134290402

Mertens, D. M. (2014). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods.*: Sage Publications.

Meyer, M. H., & Mugge, P. C. (2001). Make platform innovation drive enterprise growth. *Research-Technology Management*, *44*(1), 25-39. doi:10.1080/08956308.2001.11671405

Menguc, B., & Tansu Barker, A. (2003). The performance effects of outcome-based incentive pay plans on sales organizations: a contextual analysis. *Journal of Personal Selling & Sales Management, 23*(4), 341-358. doi:10.1080/08853134.2003.10749008

Miao, C. F., & Evans, K. R. (2011). Emerging perspectives about sales control systems and sales management: Effects of formal sales control systems: A combinatory perspective. *AMA Summer Educators' Conference Proceedings, 22*, 280-280.

Miao, C. F., & Evans, K. R. (2012). Effects of formal sales control systems: A combinatory perspective. *International Journal of Research in Marketing, 29*(2), 181-191. doi:10.1016/j.ijresmar.2011.09.002

Miao, C.F., & Evans, K. (2013). The interactive effects of sales control systems on salesperson performance: a job demands-resources perspective. *Journal of the Academy of Marketing Science, 41*(1), 73-90. doi:10.1007/s11747-012-0315-4

Miao, C. F., & Evans, K. R. (2014). Motivating industrial salesforce with sales control systems: An interactive perspective. *Journal of Business Research, 67*(6), 1233-1242. doi:10.1016/j.jbusres.2013.04.007

Miao, C. F., Evans, K. R., & Shaoming, Z. (2007). The role of salesperson motivation in sales control systems — Intrinsic and extrinsic motivation revisited. *Journal of Business Research, 60*(5), 417-425. doi:10.1016/j.jbusres.2006.12.005

Moncrief, W. C., Marshall, G. W., & Lassk, F. G. (2006). A contemporary taxonomy of sales position. *Journal of Personal Selling & Sales Management, 25*(1), 55–65. doi:10.2753/PSS0885-3134260105

Mullins, R. R., Ahearne, M., Lam, S. K., Hall, Z. R., & Boichuk, J. P. (2014). Know Your Customer: How Salesperson Perceptions of Customer Relationship Quality Form and Influence Account Profitability. *Journal of Marketing, 78*(6), 38-58. doi:10.1509/jm.13.0300

Mustafa, R. F. (2011). The POE Ms of Educational Research: A beginners' Concise Guide. *International Education Studies, 4*(3), 23. doi:10.5539/ies.v4n3p23

Oliver, R. L., & Anderson, E. (1995). Behavior- and outcome-based sales control systems: Evidence and consequences of pure-form and hybrid governance. *The Journal of Personal Selling & Sales Management, 15*(4), 1. doi:10.1080/08853134.1995.10754033

Oliver, R. L., & Anderson, E. (1994). An empirical test of the consequences of behavior- and outcome-based sales control systems. *Journal of Marketing 58*(4), 53. doi:10.2307/1251916

Onyemah, V., & Anderson, E. (2009). Inconsistencies among the constitutive elements of a sales force control system: Test of a configuration theory--based performance prediction. *Journal of Personal Selling & Sales Management, 29*(1), 9-24. doi:10.2753/PSS0885-3134290101

Ouchi, W. G. (1977). The relationship between organizational structure and organizational control. *Administrative Science Quarterly*, 95-113. doi:10.2307/2391748

Ouchi, W.G. (1979). A conceptual framework for the design of organizational control mechanisms. *Management Science, 25,*833-47. doi:10.1007/978-1-4899-7138-8_4

Ouchi, W. G., & Maguire, M. A. (1975). Organizational control: Two functions. *Administrative Science Quarterly*, 559-569. doi:10.2307/2392023

Panagopoulos, N. G., & Avlonitis, G. J. (2008). Sales force control systems: A review of measurement practices and proposed scale refinements. *Journal of Personal Selling & Sales Management, 28*(4), 365-385. doi:10.2753/PSS0885-3134280403

Panagopoulos, N. G., Johnson, C. M., & Mothersbaugh, D. L. (2015). Does choice of sales control conceptualization matter? An empirical comparison of existing conceptualizations and directions for future research. *Journal of Personal Selling & Sales Management, 35*(3), 221-246. doi:10.1080/08853134.2015.1016952

Parvinen, P., Aspara, J., Hietanen, J., & Kajalo, S. (2011). Awareness, action and context-specificity of blue ocean practices in sales management. *Management Decision*, *49*(8), 1218-1234. doi:10.1108/00251741111163098

Pedhazur, E. J., & Schmelkin, L. P. (2013). *Measurement, design, and analysis: An integrated approach*: Psychology Press.

Piercy, N. F., Cravens, D. W., & Lane, N. (2001). Sales manager behavior control strategy and its consequences: The impact of gender differences. *The Journal of Personal Selling & Sales Management, 21*(1), 39-49. doi:10.1080/08853134.2001.10754255

Piercy, N. F., Cravens, D. W., & Lane, N. (2003). Sales manager behavior control strategy and its consequences: The impact of manager gender differences. *Journal*

of Personal Selling & Sales Management, 23(3), 221-237. doi:10.1080/08853134.2003.10749000

Piercy, N. F., Cravens, D. W., & Lane, N. (2009). Sales management control level and competencies: Antecedents and consequences. *Industrial Marketing Management, 38*(4), 459-467. doi:10.1016/j.indmarman.2008.03.002

Piercy, N. F., Cravens, D. W., & Lane, N. (2012). Sales manager behavior-based control and salesperson performance: The effects of manager control competencies and organizational citizenship behavior. *Journal of Marketing Theory and Practice 20*(1), 7-22. doi:10.2753/MTP1069-6679200101

Piercy, N. F., Cravens, D. W., & Morgan, N. A. (1997). Sources of effectiveness in the business-to-business sales organization. *Journal of Marketing Practice: Applied Marketing Science, 3*(1), 45-71. doi:10.1108/EUM0000000004320

Piercy, N. F., Cravens, D. W., & Morgan, N. A. (1998). Salesforce performance and behaviour-based management processes in business-to-business sales organizations. *European Journal of Marketing, 32*(1/2), 79-100. doi:10.1108/03090569810197480

Piercy, N. F., Cravens, D. W., & Morgan, N. A. (1999). Relationships between sales management control, territory design, salesforce performance and sales organization effectiveness. *British Journal of Management, 10*(2), 95-111. doi:10.1111/1467-8551.00113

Ramaswami, S. N. (1996). Marketing controls and dysfunctional employee behaviors: A test of traditional and contingency theory postulates. *Journal of Marketing, 60*(2), 105-120. doi:10.2307/1251934

Ramaswami, S. N. (2002). Influence of control systems on opportunistic behaviors of salespeople: a test of gender differences. *Journal of Personal Selling & Sales Management, 22*(3), 173-188. . doi:10.1080/08853134.2002.10754305

Ramaswami, S. N., Srinivasan, S. S., & Gorton, S. A. (1997). Information asymmetry between salesperson and supervisor: postulates from agency and social exchange theories. *Journal of Personal Selling & Sales Management, 17*(3), 29-50. doi:10.1080/08853134.1997.10754098

Robertson, D. C., & Anderson, E. (1993). Control system and task environment effects on ethical judgment: an exploratory study of industrial salespeople. *Organization Science, 4*(4), 617-644. doi:10.1287/orsc.4.4.617

Roman, S., & Ruiz, S. (2005). Relationship outcomes of perceived ethical sales behavior: the customer's perspective. *Journal of Business Research, 58*(4), 439-445. doi:10.1016/j.jbusres.2003.07.002

Ross, S. A. (1973). The economic theory of agency: The principal's problem. *The American Economic Review, 63*(2), 134-139. http://www.jstor.org/journal/amereconrevi

Rouzies, D., & Macquin, A. (2003). An exploratory investigation of the impact of culture on sales force management control systems in Europe. *Journal of Personal Selling & Sales Management, 23*(1), 61-72. doi:10.1080/08853134.2003.10748988

Russ, F. A., McNeilly, K. M., & Comer, J. M. (1996). Leadership, decision making and performance of sales managers: A multi-level approach. *The Journal of Personal Selling & Sales Management, 16*(3), 1. doi:10.1080/08853134.1996.10754060

Simon, H. A. (1962). New developments in the theory of the firm. *The American Economic Review,* 1-15. http://www.jstor.org/stable/1910864

Shannahan, K. L., Bush, A. J., & Shannahan, R. J. (2013). Are your salespeople coachable? How salesperson coachability, trait competitiveness, and transformational leadership enhance sales performance. *Journal of the Academy of Marketing Science, 41*(1), 40-54. doi:10.1007/s11747-012-0302-9

Slater, S. F., & Olson, E. M. (2000). Strategy type and performance: The influence of sales force management. *Strategic Management Journal, 21*(8), 813. http://www.jstor.org/stable/3094398

Sloper, Daniel (2006). Free statistics calculators. Retrieved from https://www.danielsoper.com/statcalc/

Stathakopoulos, V. (1996). Sales force control: A synthesis of three theories. *Journal of Personal Selling & Sales Management*, *16*(2), 1-12. doi:10.1080/08853134.1996.10754049

Sujan, H., Weitz, B. A., & Kumar, N. (1994). Learning orientation, working smart, and effective selling. *The Journal of Marketing*, 39-52. doi:10.2307/1252309

Tabachnick, B. G., & Fidell, L. S. (2007). *Experimental designs using ANOVA*: Thomson/Brooks/Cole.

Teas, R. K. (1983). Supervisory behavior, role stress, and the job satisfaction of industrial salespeople. *Journal of Marketing Research*, 84-91. doi:10.2307/3151415

Theodosiou, M., & Katsikea, E. (2007). How management control and job-related characteristics influence the performance of export sales managers. *Journal of Business Research, 60*(12), 1261-1271. doi: 10.1016/j.jbusres.2007.05.003

Walker, O. C, Jr., Churchill, G. A., Jr., & Ford, N. M. (1977). Motivation and performance in industrial selling: Present knowledge and needed Research. *Journal of Marketing Research*, *15*, 156-168. doi:10.2307/3150465

Wang, G., Dou, W., & Zhou, N. (2012). The Interactive Effects of Sales Force Controls on Salespeople Behaviors and Customer Outcomes. *Journal of Personal Selling & Sales Management, 32(*2), 225-244. doi:10.2753/PSS0885-3134320204

Weitz, B. A. (1979). A critical review on personal selling research: The need for a contingency approach. *Critical Issues in Sales Management: State-of-the-A and Future Research Needs*, 76-126.

Weitz, B. A. (1981). Effectiveness in sales interactions: A contingency framework. *Journal of Marketing, 45*, 85-103. doi:10.2307/1251723

Williamson, O. E. (1981). The economics of organization: The transaction cost approach. *American Journal of Sociology,* 548-577. doi:10.1086/227496

Williamson, O. E. (1985). *The economic institutions of capitalism.* New York, NY: Simon and Schuster.

Appendix A: Survey Questions

Outcome Control Questions

1 My manager tells me about the expected level of achievement on sales volume or market share targets

2 My manager monitors my performance on achieving sales volume or market share targets

3 I receive frequent feedback on whether I am meeting expected achievement on sales volume or market share targets

4 My manager ensures that I am aware of the extent to which I attain sales volume or market share targets

5 I would be recognized by my manager if I perform well on sales volume or market share targets

Capability Control Questions

6 My manager has standards by which my selling skills are evaluated.

7 My manager periodically evaluates the selling skills I use to accomplish a task (i.e. How I negotiate)

8 My manager provides guidance on ways to improve my selling skills and abilities

9 My manager evaluates how I make sales presentations and communicate with customers

10 My manager assists me by illustrating why using a particular sales approach may be effective

Activity Control Questions

11 My manager informs me about the sales activities I am expected to perform

12 My manager monitors how I perform required sales activities

13 My manager informs me on whether I meet his/her expectations on sales activities

14 My manager readjusts sales activities when necessary

15 My manager evaluates my sales activities

Task Complexity Questions

16 The purchase decision is made quickly (reversed on scale)

17 A number of people are involved in the purchase decision

18 The customer needs a lot of information before making a purchase decision

19 Is considered by the customer to be relatively routine

20 Purchase evolves over a long period of time

Product Complexity Questions

21 Most buyers would say that we and our competition sell a technically (will need to remove “technically and just leave complex” complex product

22 Our major product is relative simple for must buyers to understand

Salesperson Performance Questions

23 Identifying major accounts and selling to them

24 Generating a high level of dollar sales

25 Contributing to my company's market share

26 Selling high profit margin products

27 Exceeding sales targets

28 Quickly generating sales of new products

Age

29 What is your Age? _____

Gender

30 What is your Gender? *Male* *Female*

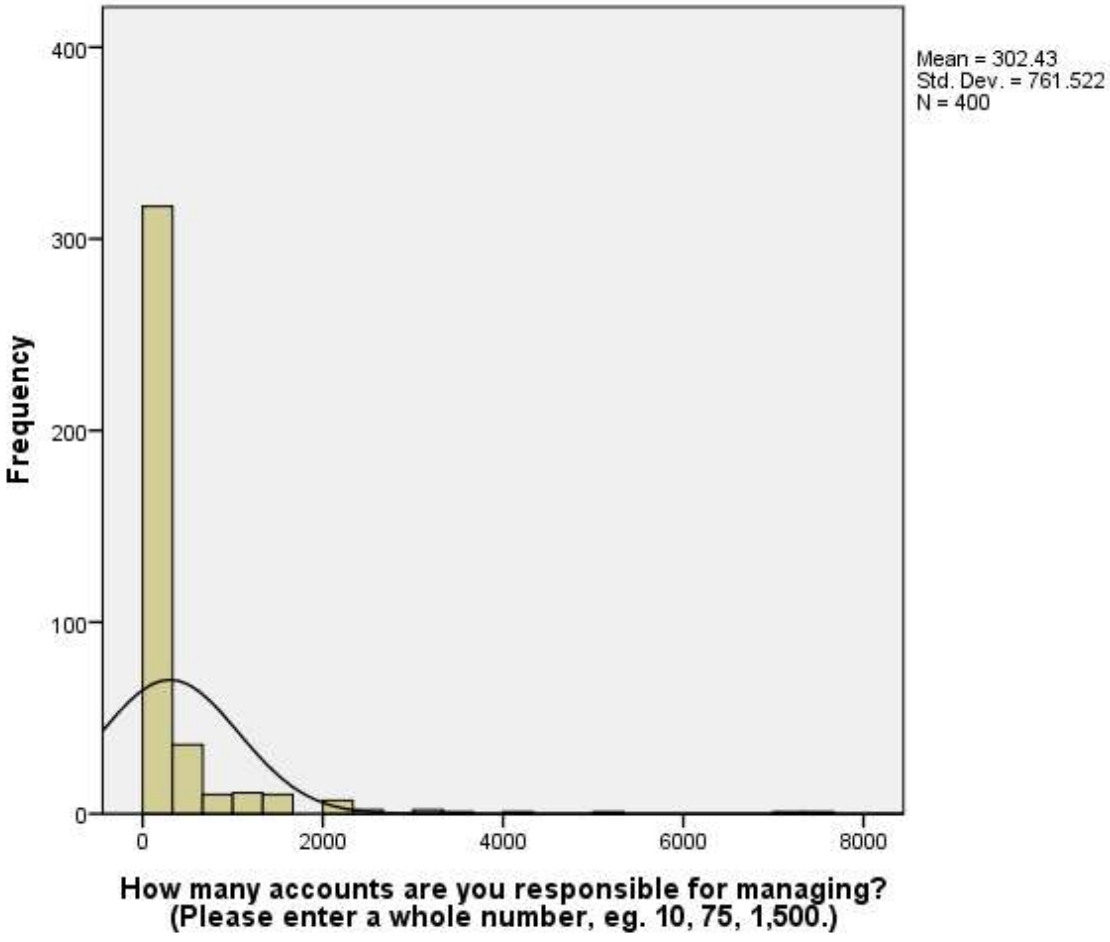
Years as a Salesperson

31 How many years have you been a salesperson? _____

Appendix B: SPSS Output

Descriptive Statistics

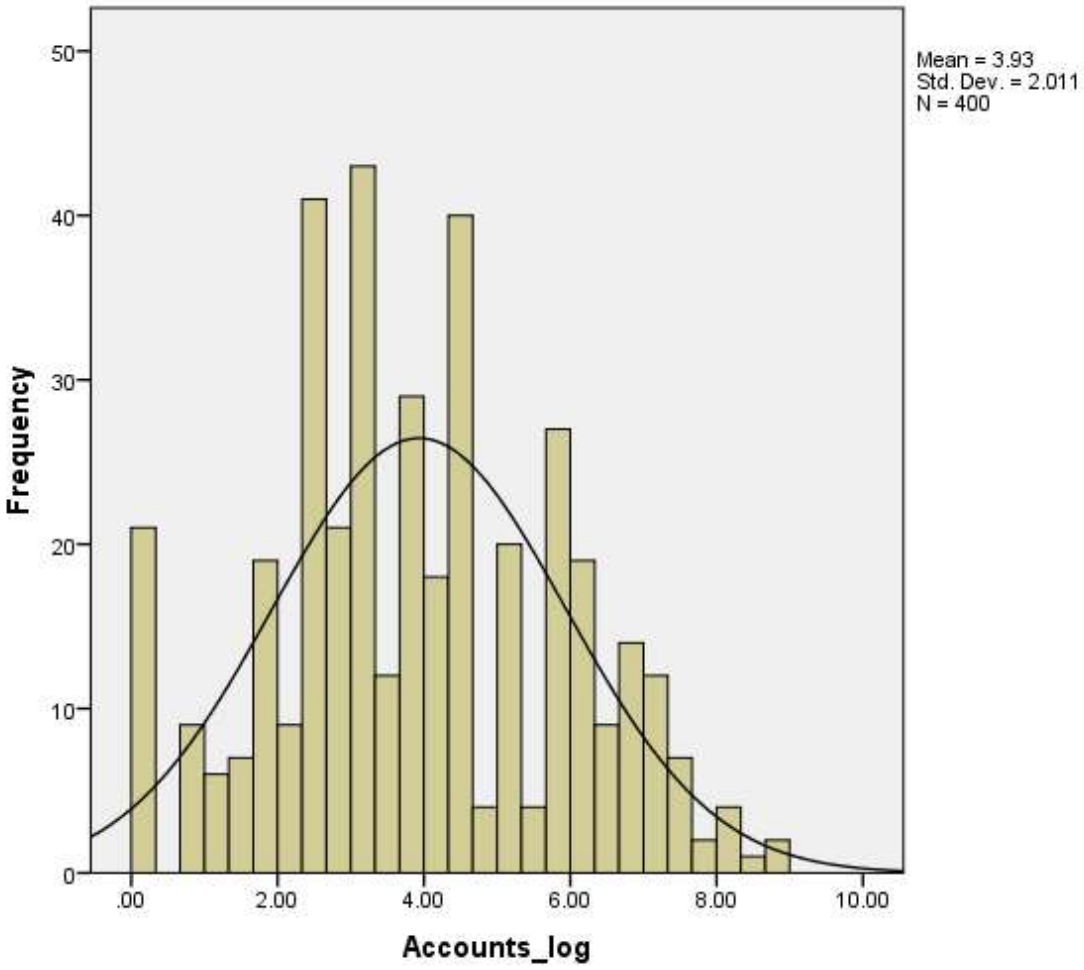
	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
How many accounts are you responsible for managing? (Please enter a whole number, eg. 10, 75, 1,500.)	400	5.543	.122	40.180	.243
Valid N (listwise)	400				



Descriptive Statistics

	N	Skewness	Kurtosis

	Statistic	Statistic	Std. Error	Statistic	Std. Error
Accounts_log	400	.083	.122	-.553	.243
Valid N (listwise)	400				



Research Question 1

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.986	.282		17.649	.000		
	Outcome_control	.025	.067	.030	.378	.706	.406	2.465
	Capability_control	.048	.051	.086	.938	.349	.310	3.229
	Activity_control	.027	.079	.033	.342	.733	.274	3.644

a. Dependent Variable: Salesperson_performance

Collinearity Diagnostics [a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Outcome_control	Capability_control	Activity_control
1	1	3.948	1.000	.00	.00	.00	.00
	2	.038	10.235	.25	.00	.32	.00
	3	.008	21.562	.63	.74	.36	.01
	4	.006	25.605	.12	.26	.32	.99

a. Dependent Variable: Salesperson_performance

Casewise Diagnostics[a]

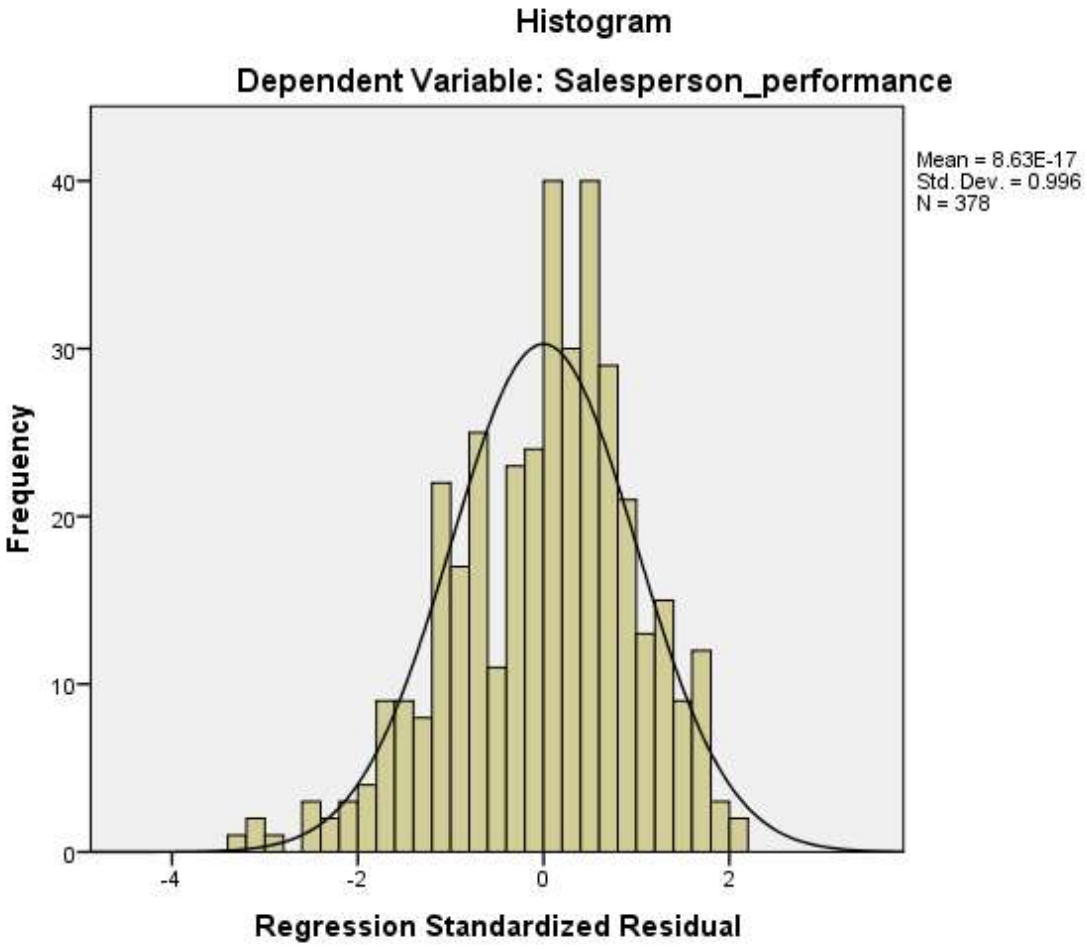
Case Number	Std. Residual	Salesperson_performance	Predicted Value	Residual
194	-3.127	3.17	5.6248	-2.45813
320	-3.249	3.00	5.5539	-2.55387
394	-3.037	3.00	5.3873	-2.38731

a. Dependent Variable: Salesperson_performance

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5.1793	5.6876	5.5260	.11034	378
Std. Predicted Value	-3.142	1.465	.000	1.000	378
Standard Error of Predicted Value	.041	.235	.075	.029	378
Adjusted Predicted Value	5.1680	5.7051	5.5257	.11159	378
Residual	-2.55387	1.65407	.00000	.78289	378
Std. Residual	-3.249	2.104	.000	.996	378
Stud. Residual	-3.259	2.156	.000	1.002	378
Deleted Residual	-2.57019	1.73632	.00035	.79243	378
Stud. Deleted Residual	-3.302	2.167	.000	1.005	378
Mahal. Distance	.020	32.619	2.992	3.827	378
Cook's Distance	.000	.066	.003	.007	378
Centered Leverage Value	.000	.087	.008	.010	378

a. Dependent Variable: Salesperson_performance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Dependent Variable: Salesperson_performance
Mean = 8.63E-17
Std. Dev. = 0.996
N = 378
Frequency
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30
20
10
0
-4
-2
0
2
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Salesperson_performance
Expected Cum Prob
Observed Cum Prob
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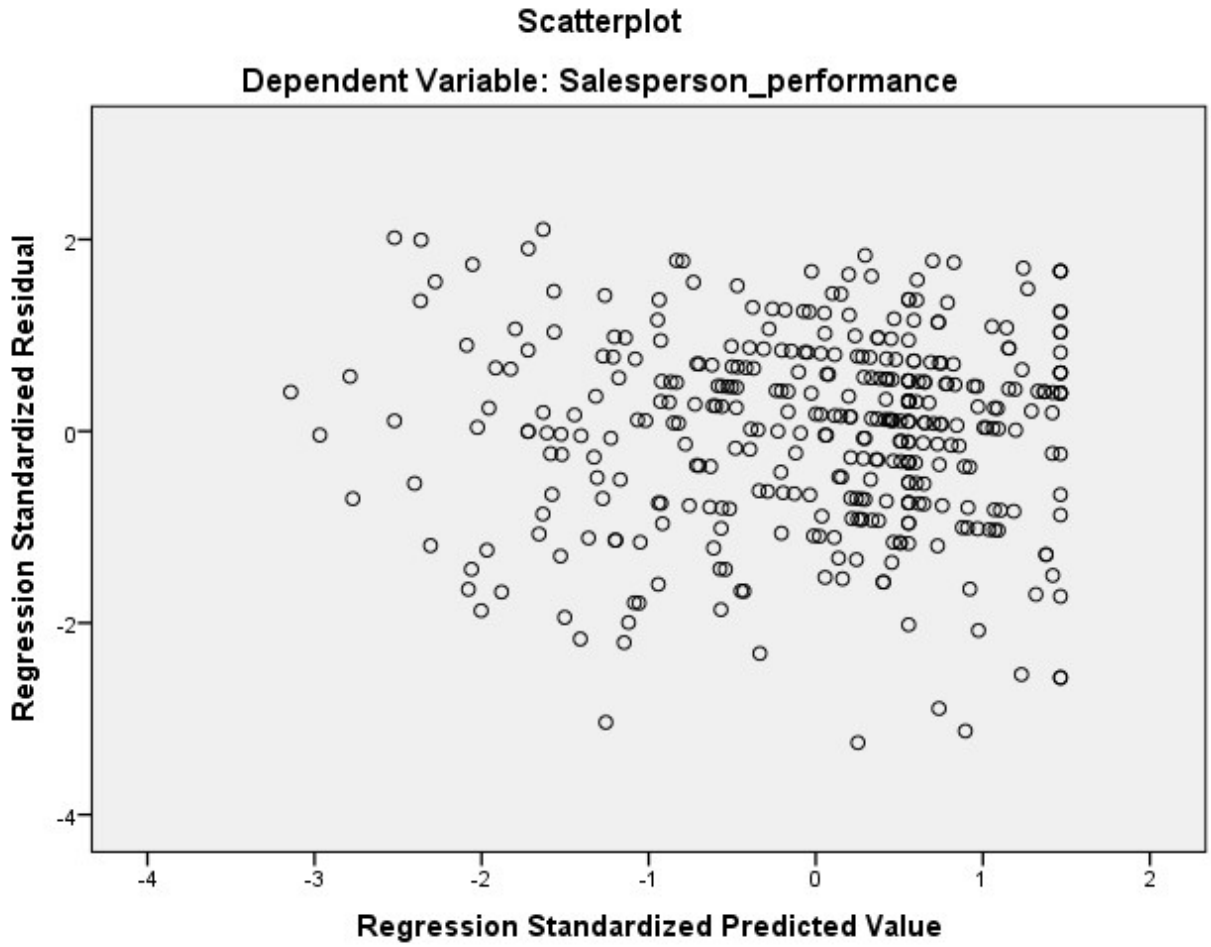
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: Salesperson_performance
Regression Standardized Residual
Regression Standardized Predicted Value
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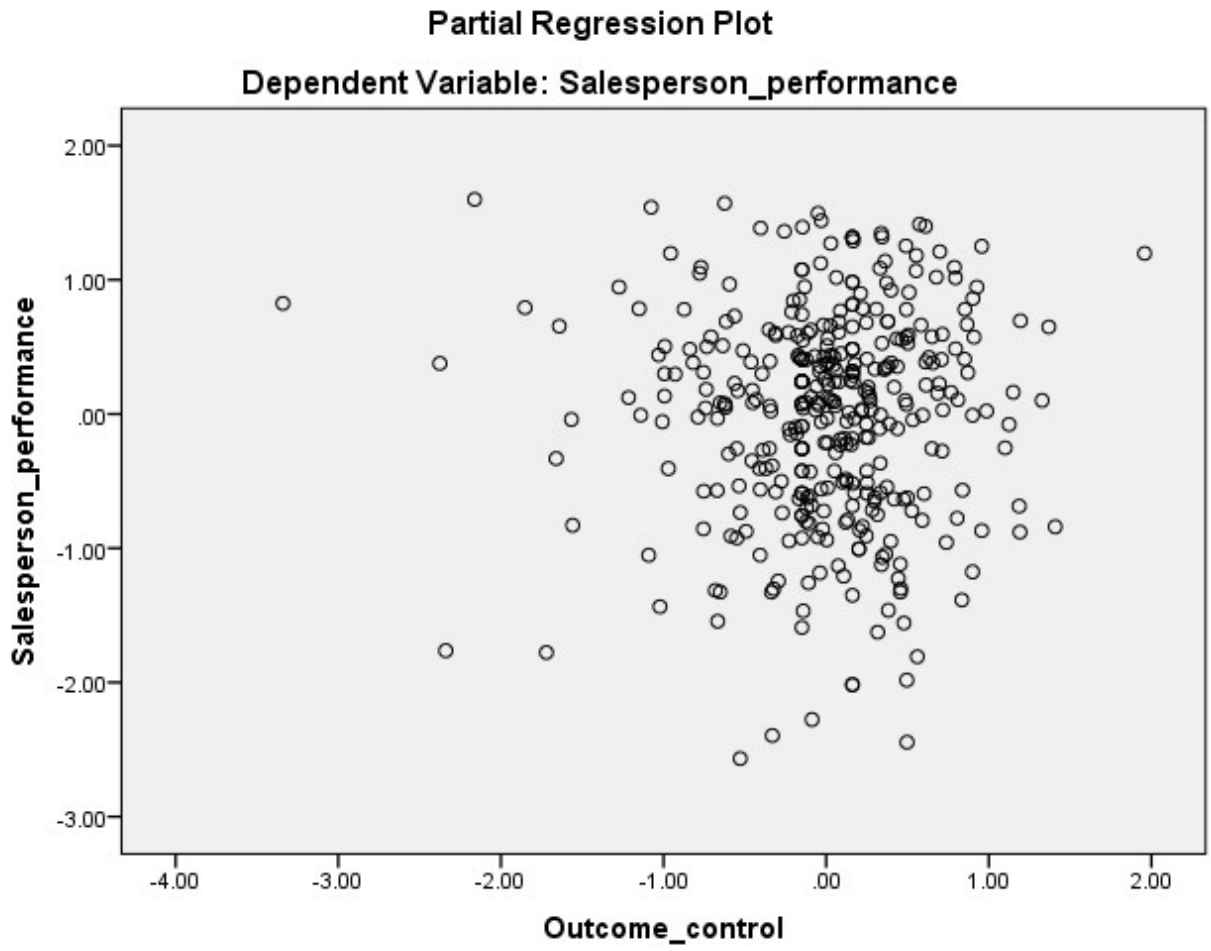
-1
0
1
2


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
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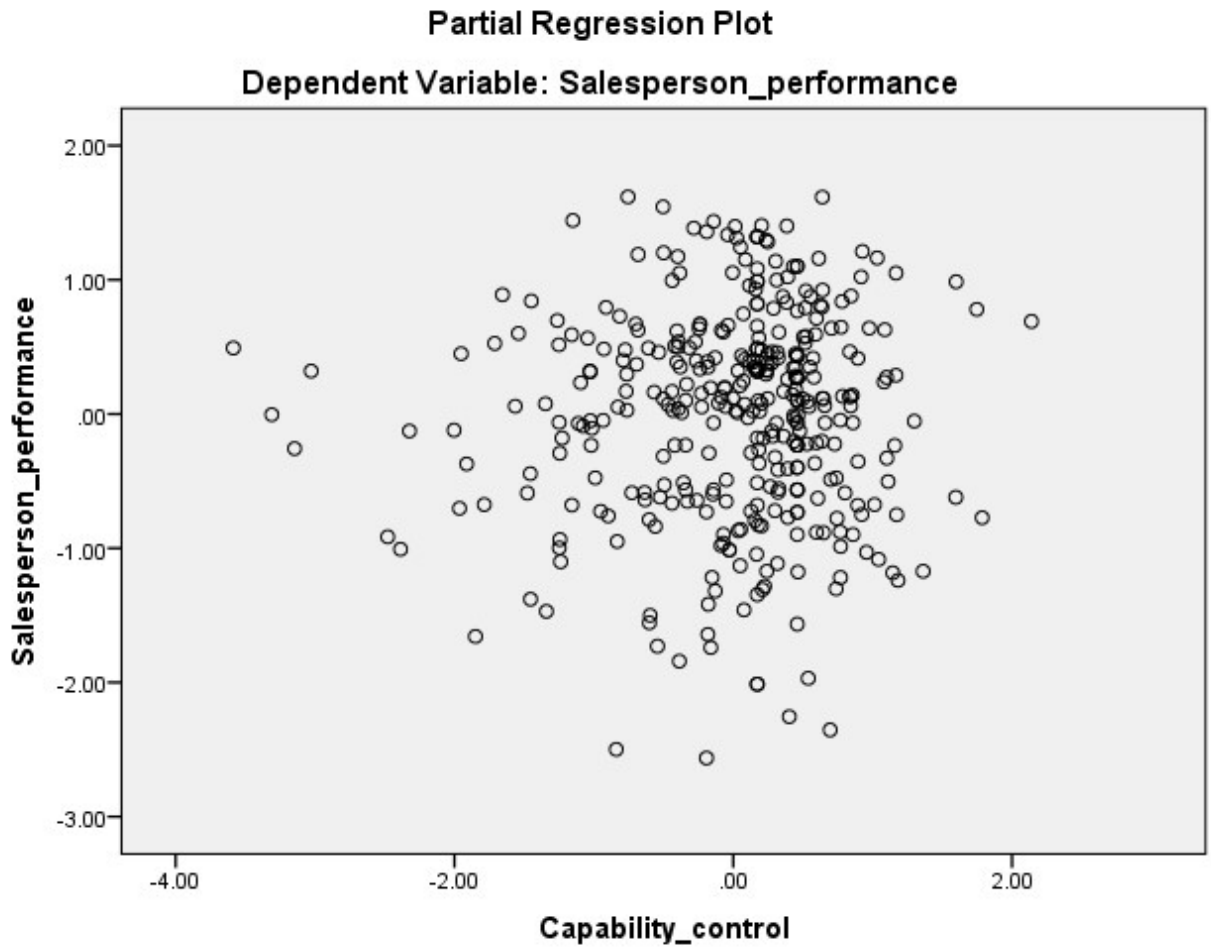
-1.00
.00
1.00
2.00
Outcome_control


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
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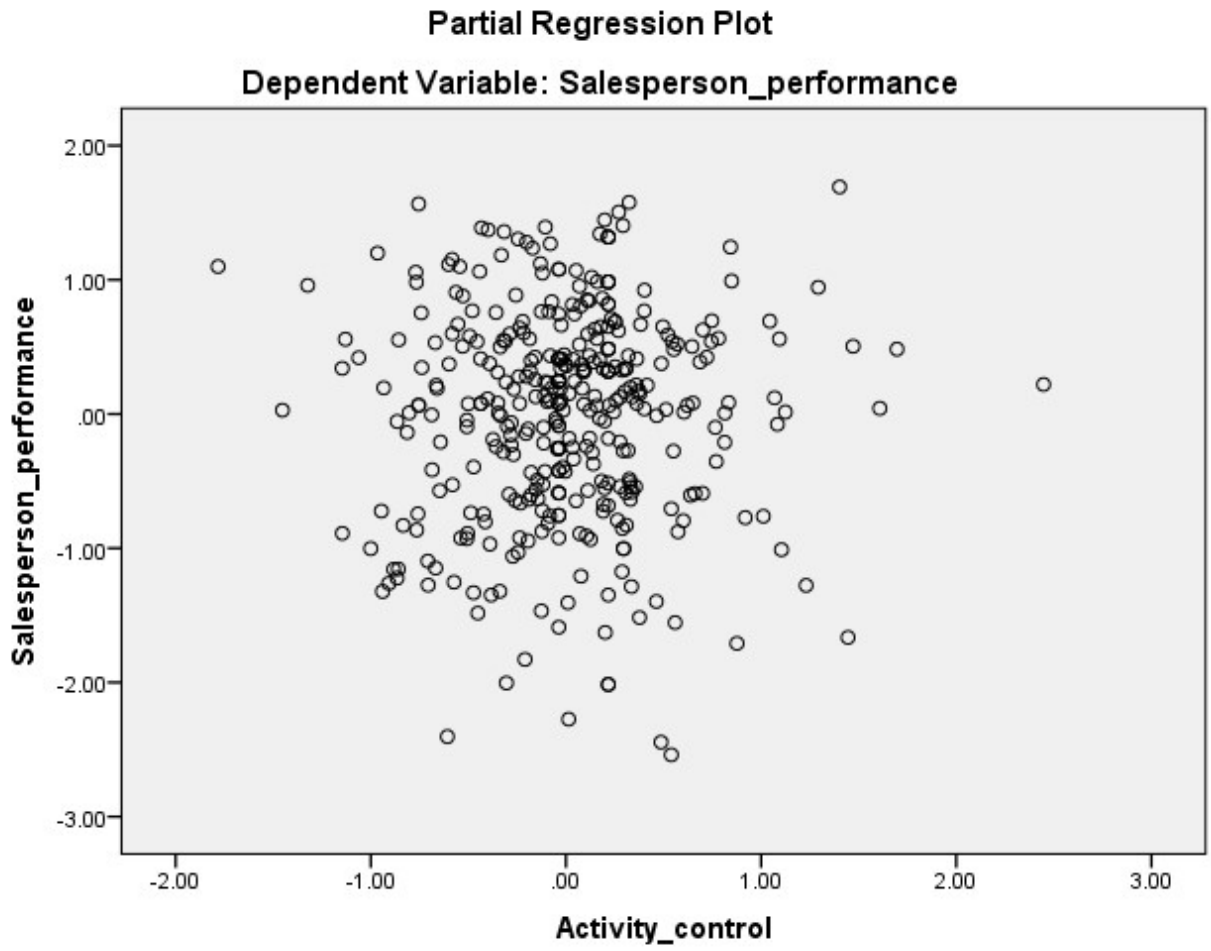
.00
2.00
Capability_control



Research Question 2

Model Summary [d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.117 [a]	.014	.011	.78624	.014	5.226	1	376	.023	
2	.127 [b]	.016	.006	.78838	.003	.318	3	373	.812	
3	.157 [c]	.025	.006	.78823	.008	1.047	3	370	.372	2.265

a. Predictors: (Constant), Zscore(Outcome_control)

b. Predictors: (Constant), Zscore(Outcome_control), Zscore(Task_complexity), Zscore(Accounts_log), Zscore(Product_complexity)

c. Predictors: (Constant), Zscore(Outcome_control), Zscore(Task_complexity), Zscore(Accounts_log), Zscore(Product_complexity), OC_by_PC, OC_by_A, OC_by_TC

d. Dependent Variable: Salesperson_performance

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.517	.041		135.758	.000		
	Zscore(Outcome_control)	.109	.048	.117	2.286	.023	1.000	1.000
2	(Constant)	5.518	.041		135.148	.000		
	Zscore(Outcome_control)	.107	.048	.115	2.207	.028	.974	1.027
	Zscore(Task_complexity)	.025	.044	.031	.563	.573	.876	1.141
	Zscore (Product complexity)	.010	.044	.013	.239	.811	.875	1.143
	Zscore(Accounts_log)	.030	.043	.037	.705	.482	.975	1.025
3	(Constant)	5.522	.041		133.446	.000		
	Zscore(Outcome_control)	.118	.049	.126	2.386	.018	.938	1.066
	Zscore(Task_complexity)	.040	.045	.050	.877	.381	.821	1.218
	Zscore (Product_complexity)	-.005	.045	-.007	-.118	.906	.815	1.226
	Zscore(Accounts_log)	.040	.043	.049	.925	.355	.939	1.065
	OC_by_TC	-.068	.051	-.084	-1.342	.180	.677	1.478
	OC_by_PC	.082	.050	.100	1.633	.103	.697	1.434
	OC_by_A	.008	.049	.008	.156	.876	.935	1.069

a. Dependent Variable: Salesperson_performance

Collinearity Diagnostics [a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions							
				(Constant)	Zscore (Outcome_control)	Zscore (Task_complexity)	Zscore (Product_complexity)	Zscore (Accounts_log)	OC_by_TC	OC_by_PC	OC_by_A
1	1	1.099	1.000	.45	.45						
	2	.901	1.104	.55	.55						
2	1	1.396	1.000	.00	.07	.26	.26	.05			
	2	1.089	1.132	.34	.40	.07	.03	.05			
	3	1.047	1.154	.31	.02	.01	.05	.54			
	4	.833	1.295	.35	.44	.05	.03	.29			
	5	.636	1.482	.00	.07	.61	.63	.07			
3	1	1.615	1.000	.01	.04	.05	.04	.01	.16	.13	.02
	2	1.346	1.095	.04	.04	.15	.22	.05	.03	.07	.03
	3	1.124	1.198	.23	.26	.13	.03	.07	.03	.00	.04
	4	1.061	1.234	.17	.10	.00	.03	.17	.01	.07	.30
	5	1.028	1.253	.14	.07	.00	.01	.39	.00	.01	.28
	6	.795	1.425	.33	.14	.20	.19	.14	.01	.02	.09
	7	.661	1.563	.06	.35	.20	.21	.07	.16	.09	.13
	8	.370	2.089	.02	.00	.27	.28	.10	.60	.61	.11

a. Dependent Variable: Salesperson_performance

Casewise Diagnostics[a]

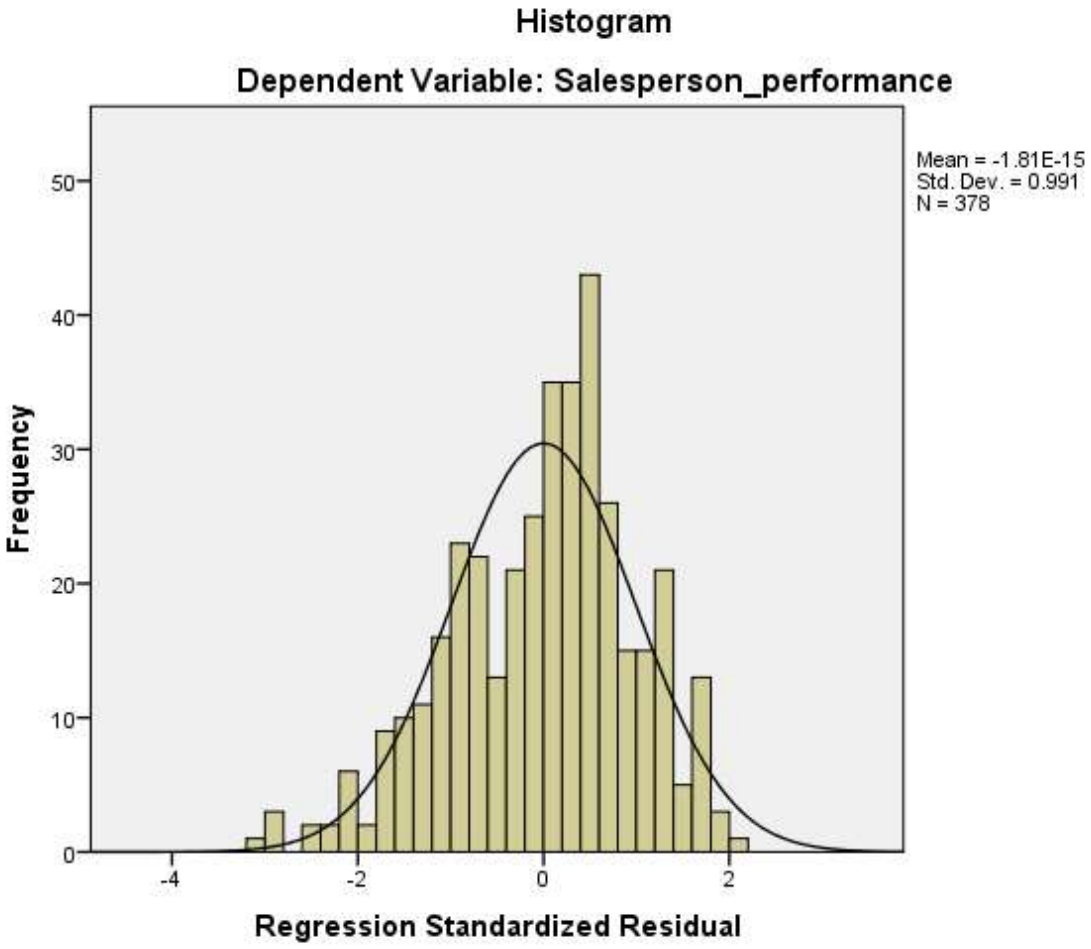
Case Number	Std. Residual	Salesperson_performance	Predicted Value	Residual
320	-3.053	3.00	5.4062	-2.40624

a. Dependent Variable: Salesperson_performance

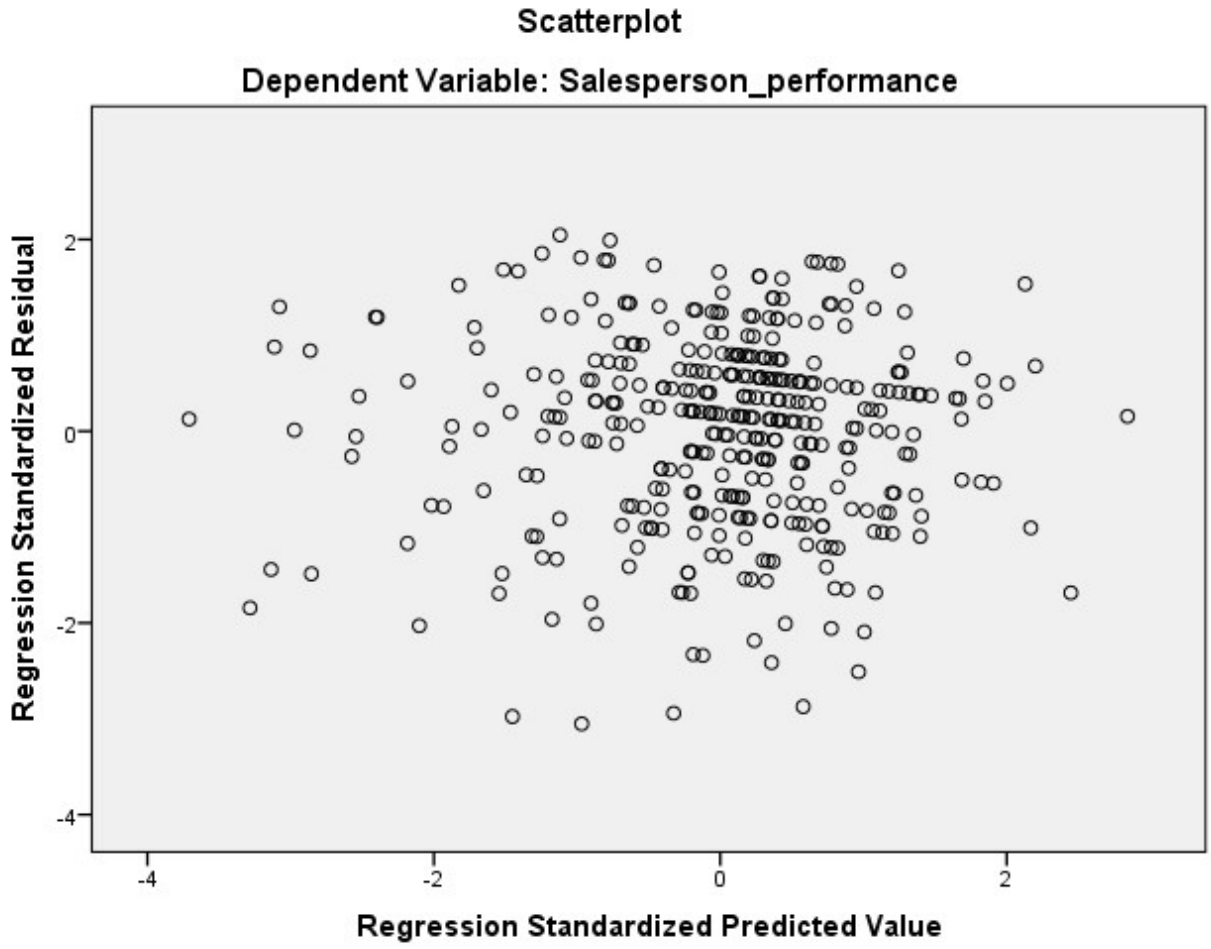
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5.0669	5.8779	5.5260	.12377	378
Std. Predicted Value	-3.709	2.843	.000	1.000	378
Standard Error of Predicted Value	.045	.322	.104	.049	378
Adjusted Predicted Value	5.0518	5.8904	5.5240	.12788	378
Residual	-2.40624	1.61250	.00000	.78088	378
Std. Residual	-3.053	2.046	.000	.991	378
Stud. Residual	-3.075	2.206	.001	1.004	378
Deleted Residual	-2.44143	1.87484	.00203	.80252	378
Stud. Deleted Residual	-3.111	2.218	.001	1.007	378
Mahal. Distance	.213	62.107	6.981	9.074	378
Cook’s Distance	.000	.099	.004	.010	378
Centered Leverage Value	.001	.165	.019	.024	378

a. Dependent Variable: Salesperson_performance


Histogram
Dependent Variable: Salesperson_performance
Mean = -1.81E-15
Std. Dev. = 0.991
N = 378
Frequency
50
40
30
20
10
0
-4
-2
0
2
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Salesperson_performance
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: Salesperson_performance
Regression Standardized Residual
Regression Standardized Predicted Value
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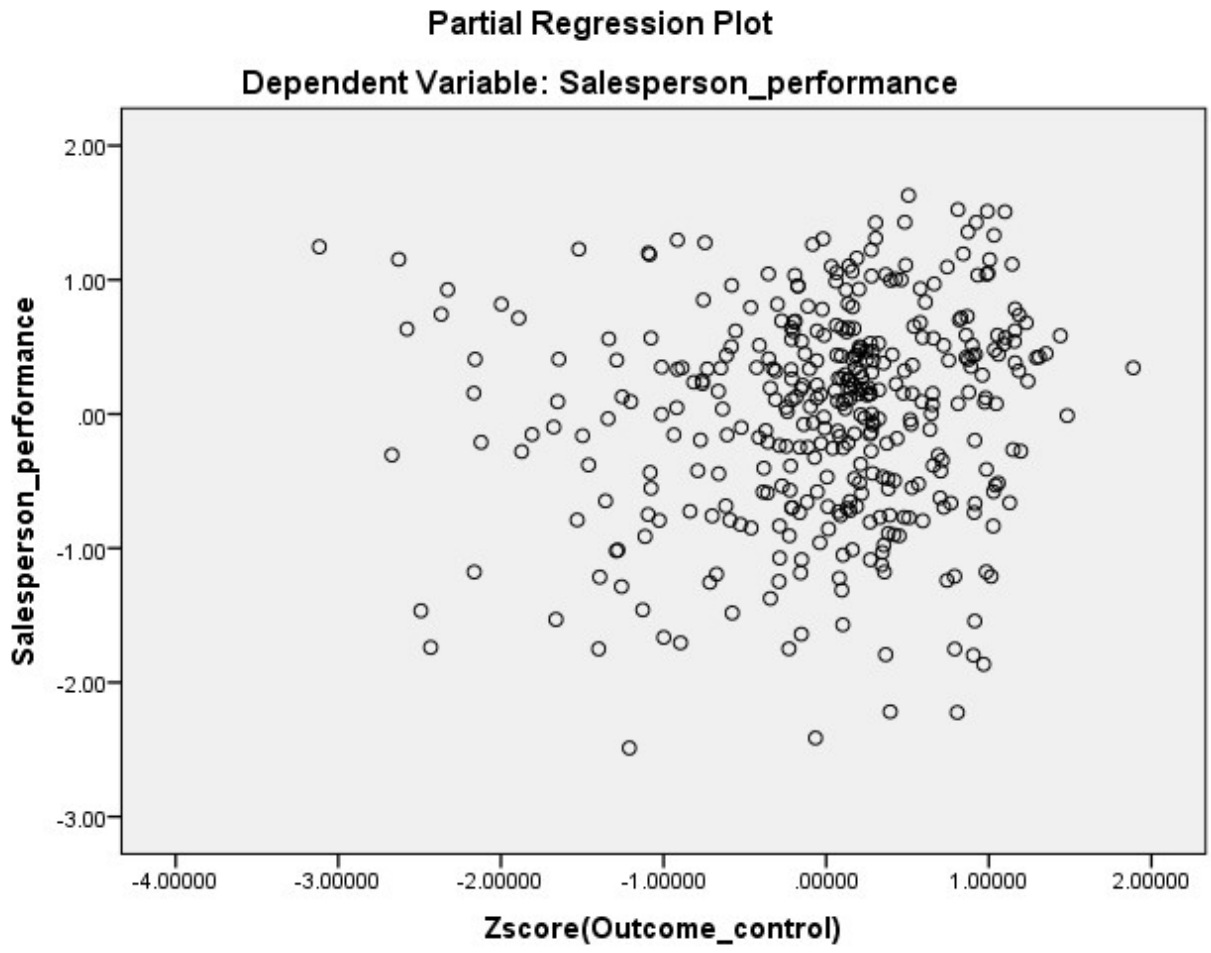
0
-2
-4
-4
-2
0
2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1.00
.00
-1.00
-2.00
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-2.00000
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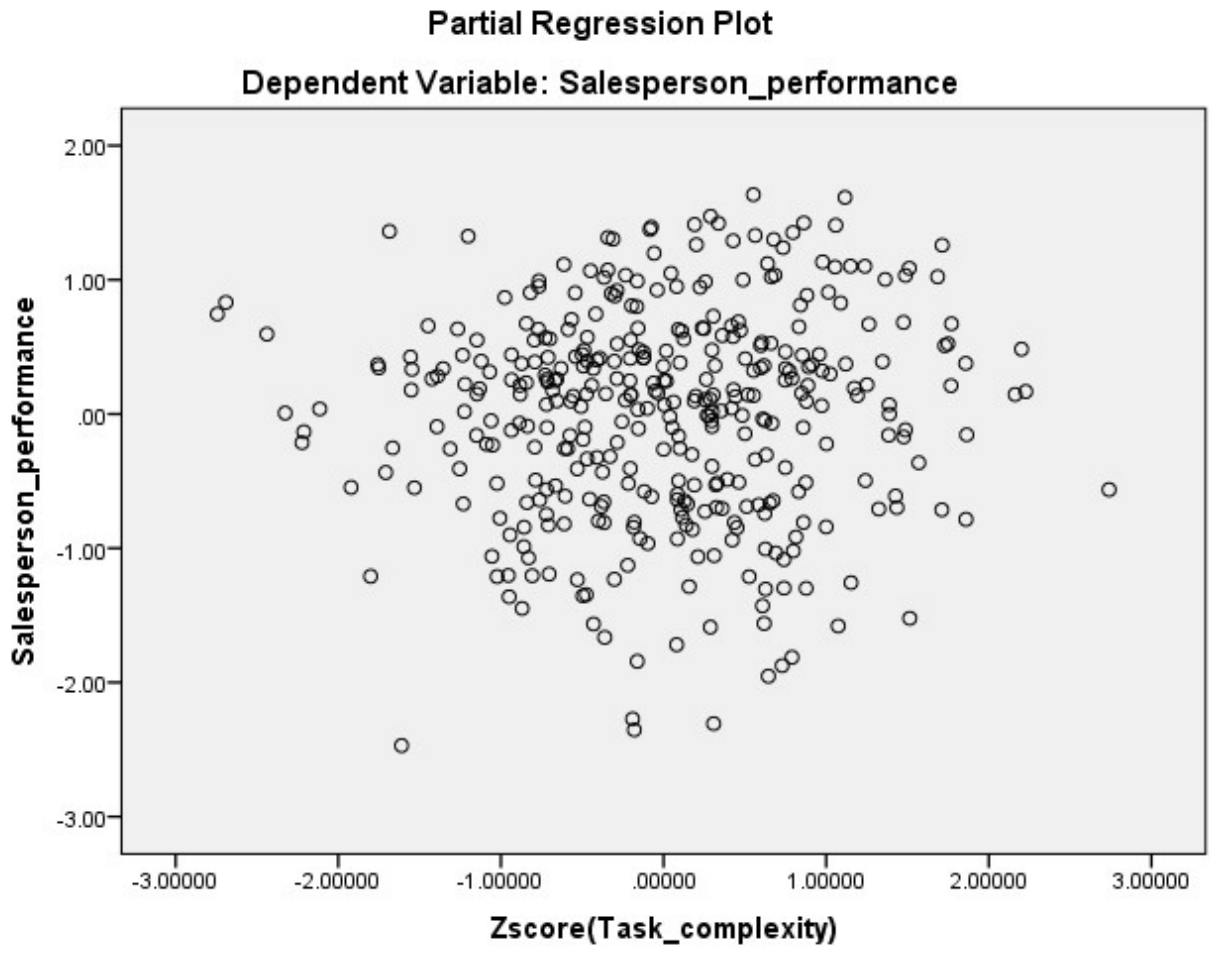
.00000
1.00000
2.00000
Zscore(Outcome_control)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Dependent Variable: Salesperson_performance
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1.00
.00
-1.00
-2.00
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-3.00000
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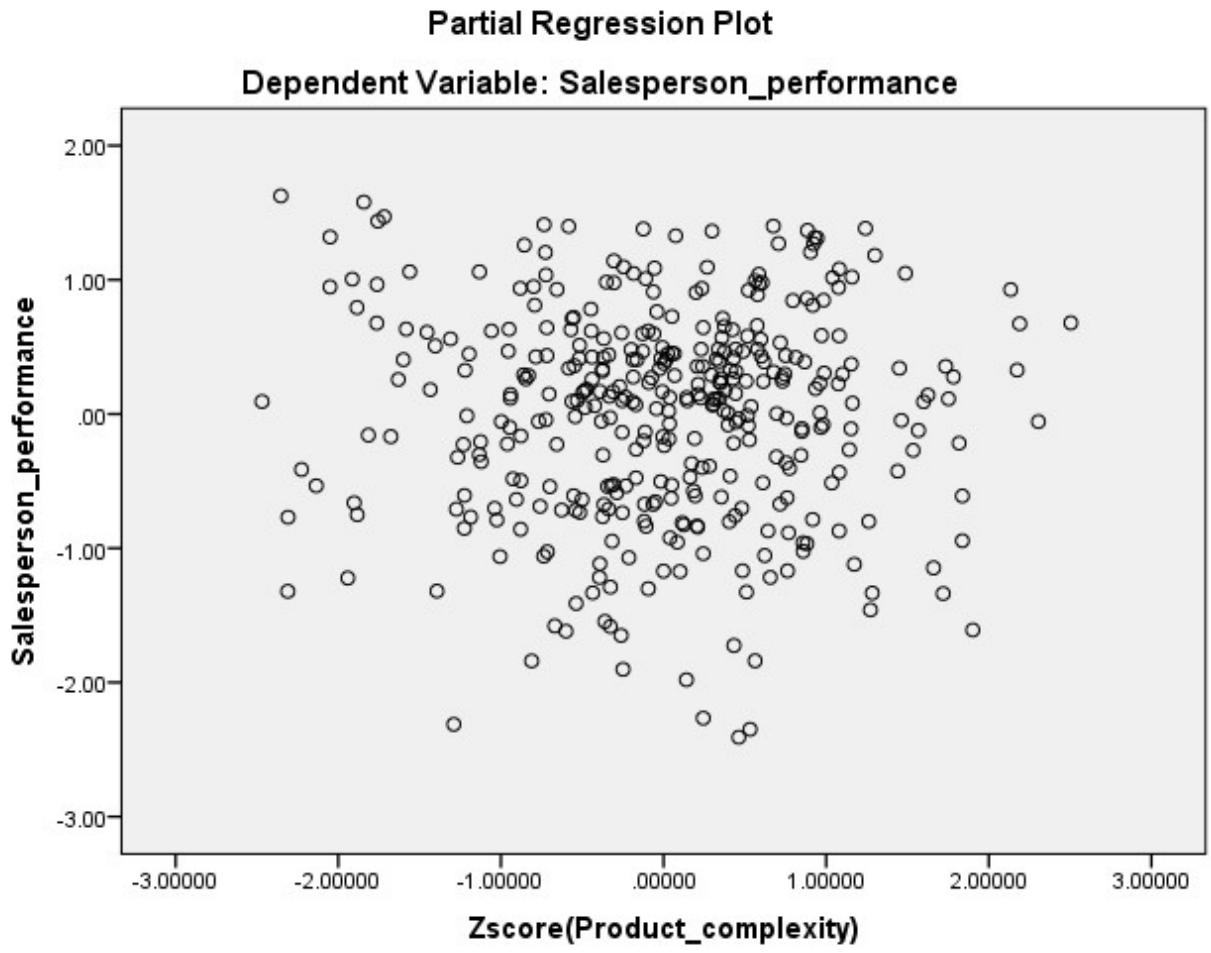
.00000
1.00000
2.00000
3.00000
Zscore(Task_complexity)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Dependent Variable: Salesperson_performance
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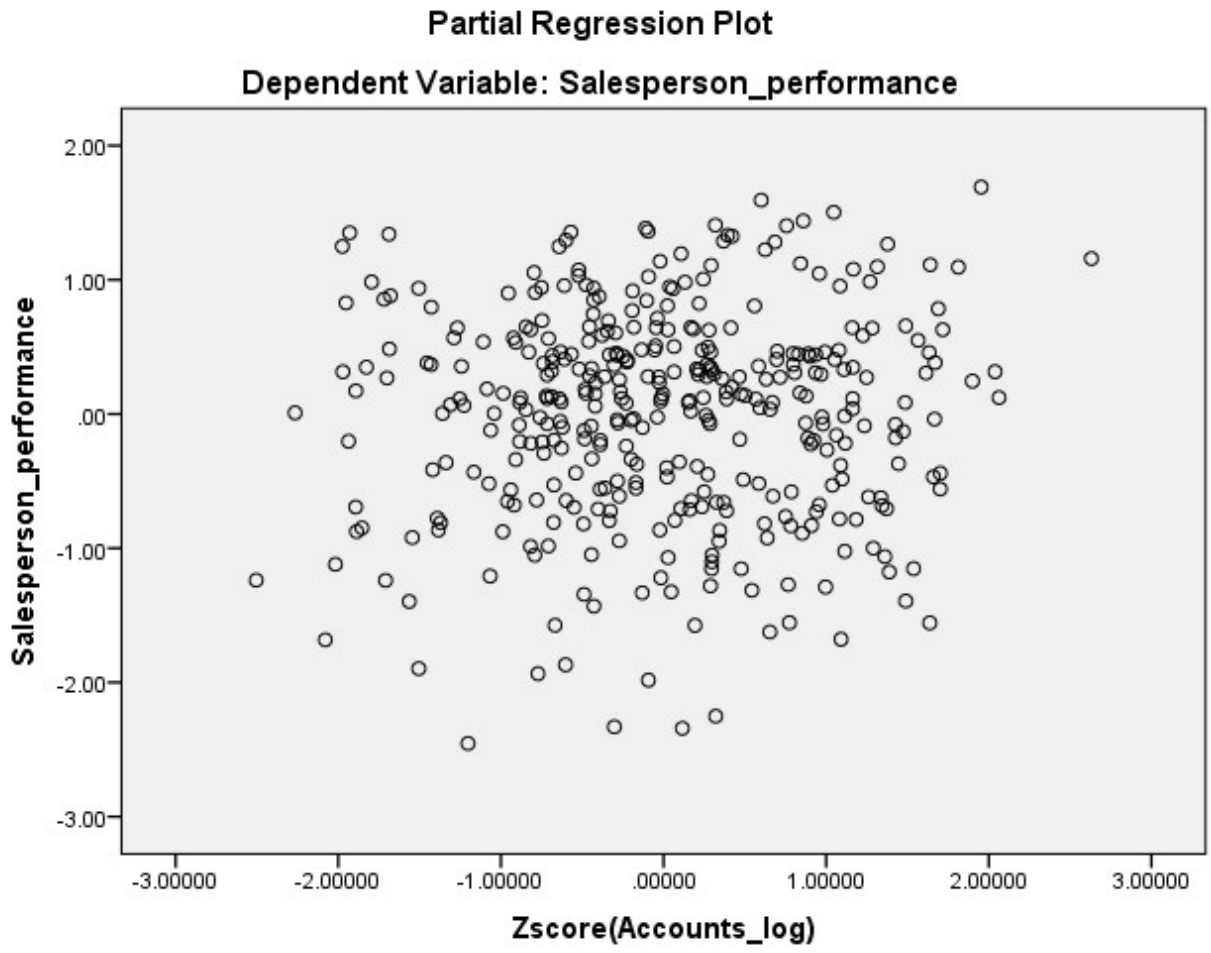
2.00000
3.00000
Zscore(Product_complexity)


Partial Regression Plot
Dependent Variable: Salesperson_performance
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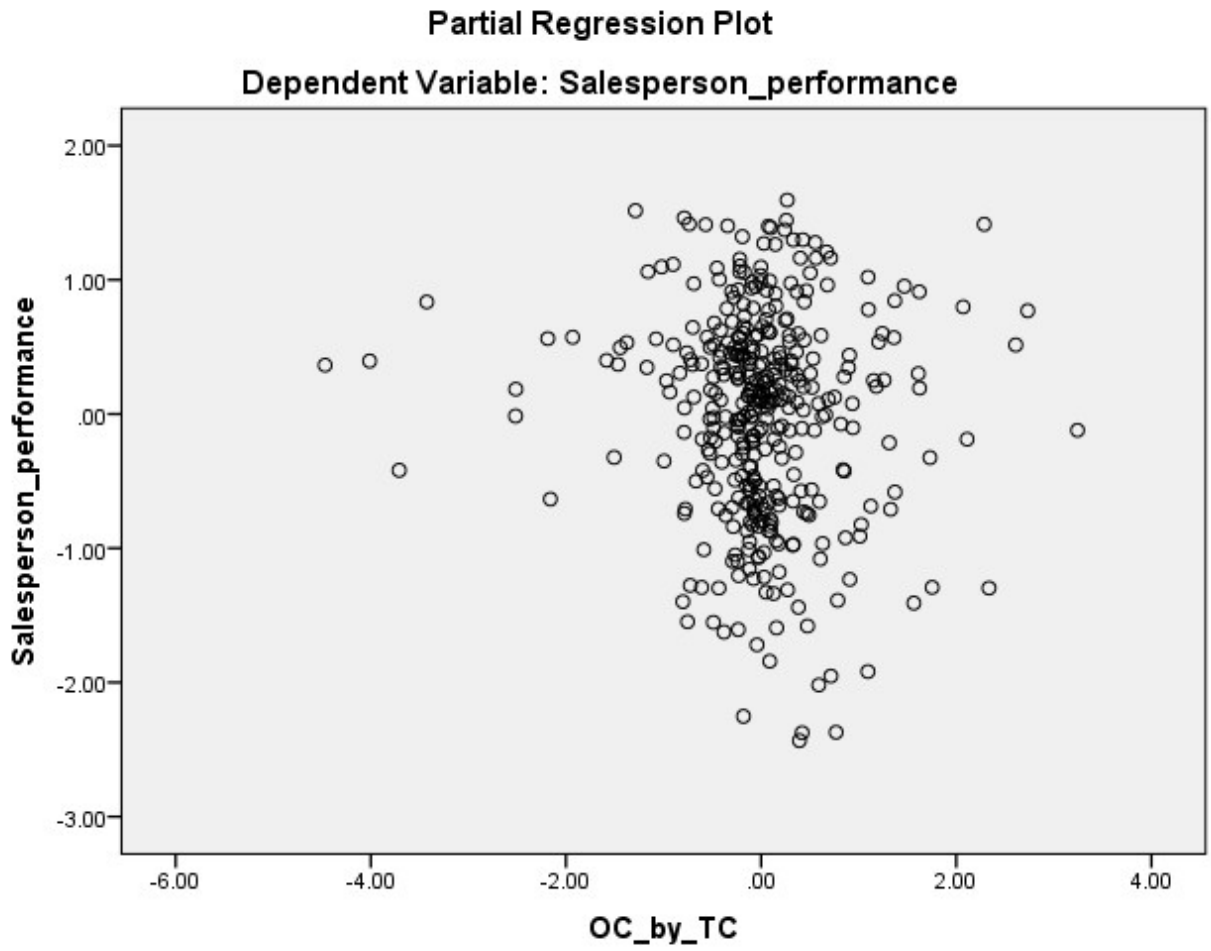
1.00000
2.00000
3.00000
Zscore(Accounts_log)


Partial Regression Plot
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-6.00
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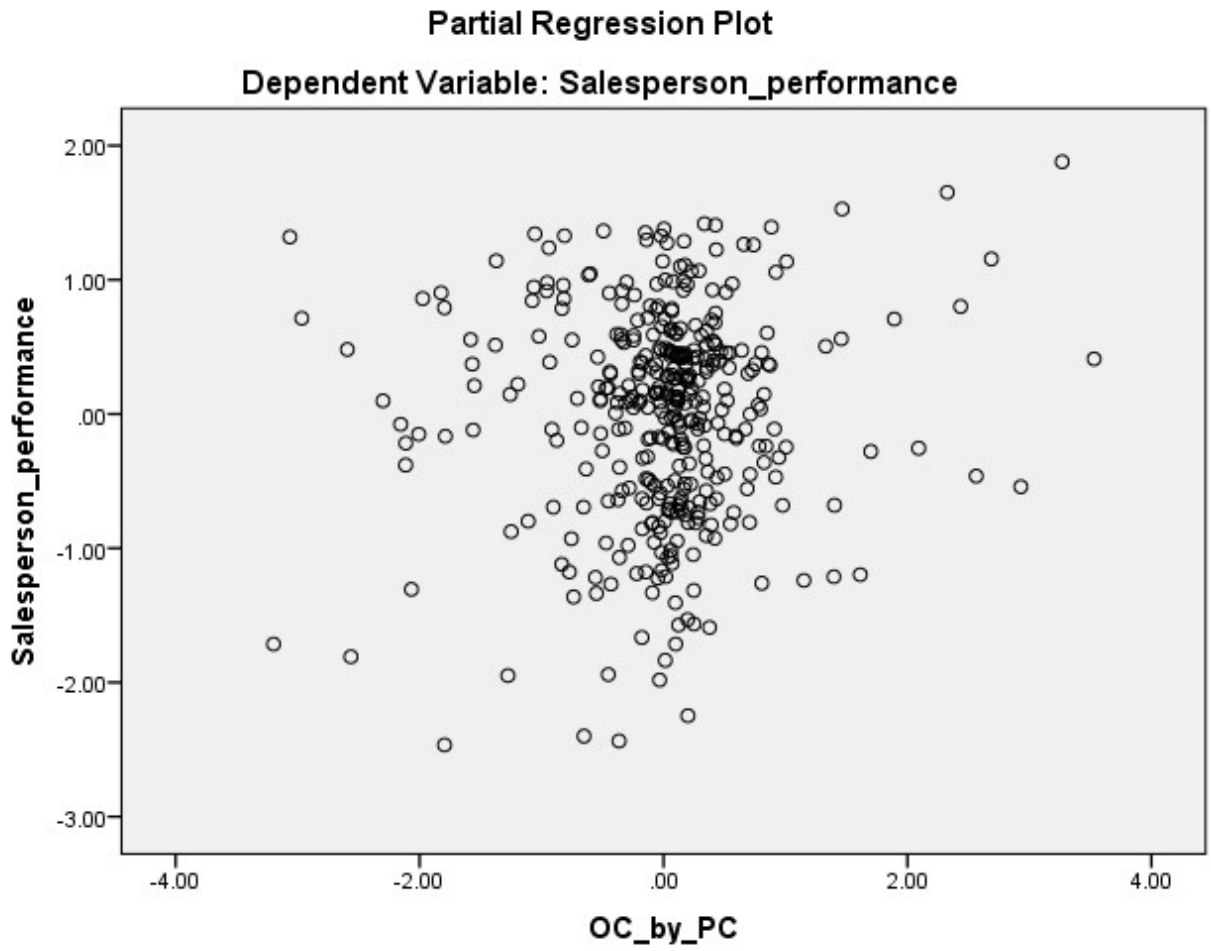
-2.00
.00
2.00
4.00
OC_by_TC


Partial Regression Plot
Dependent Variable: Salesperson_performance
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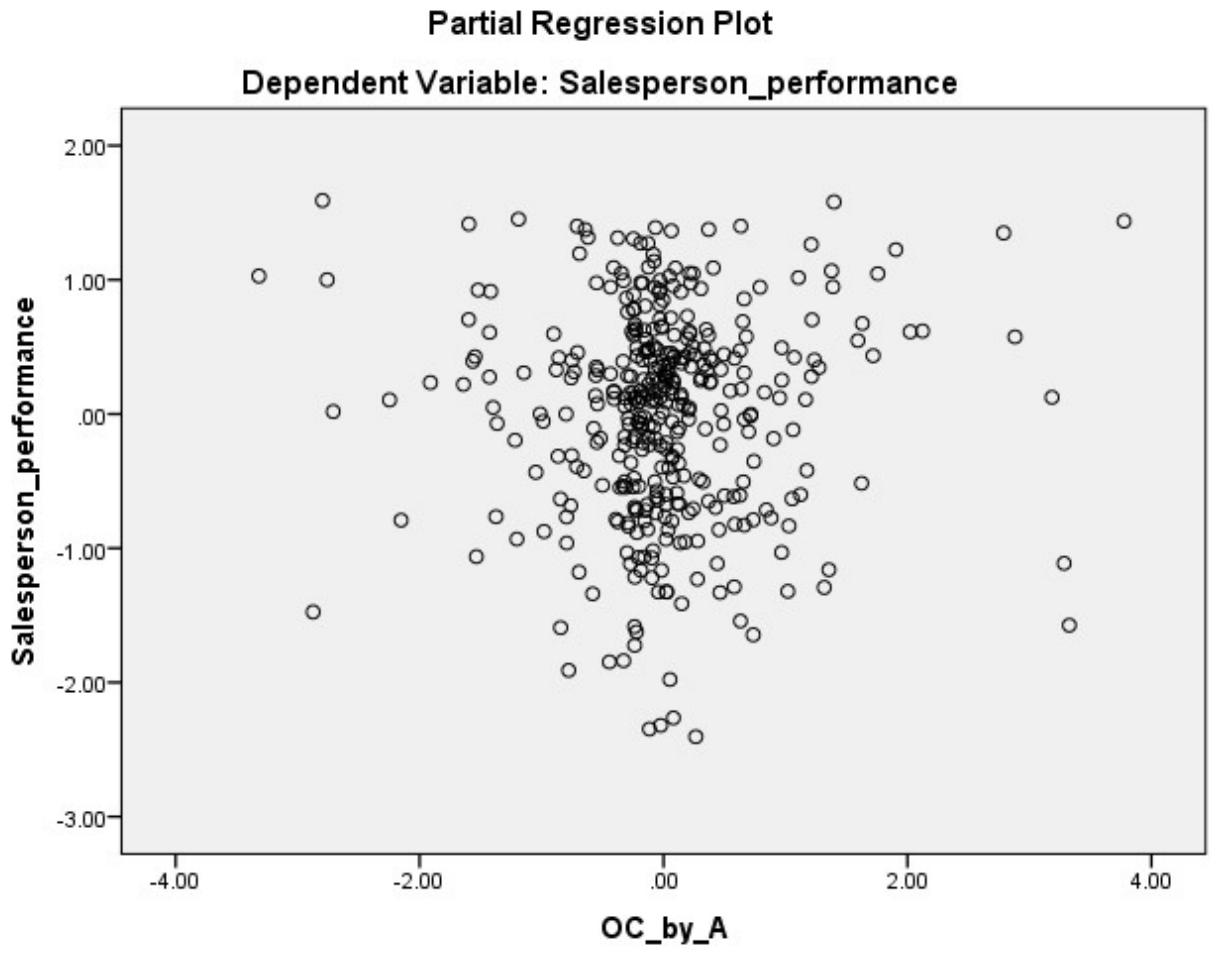
.00
2.00
4.00
OC_by_PC



Research Question 3

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.518	.040		136.437	.000		
	Zscore (Capability_control)	.113	.043	.135	2.648	.008	1.000	1.000
2	(Constant)	5.520	.041		135.852	.000		
	Zscore (Capability_control)	.114	.044	.136	2.601	.010	.962	1.039
	Zscore(Task_complexity)	.028	.044	.035	.645	.519	.876	1.142
	Zscore (Product_complexity)	.014	.044	.018	.330	.742	.871	1.148
	Zscore(Accounts_log)	.027	.043	.032	.625	.533	.972	1.029
3	(Constant)	5.506	.041		132.855	.000		
	Zscore (Capability_control)	.124	.044	.148	2.787	.006	.933	1.072
	Zscore(Task_complexity)	.022	.044	.028	.501	.616	.869	1.151
	Zscore (Product_complexity)	.018	.044	.023	.408	.683	.863	1.158
	Zscore(Accounts_log)	.020	.043	.024	.459	.646	.959	1.043
	CC_by_TC	-.024	.047	-.030	-.518	.605	.785	1.274
	CC_by_PC	-.025	.043	-.033	-.580	.562	.807	1.240
	CC_by_A	.060	.045	.070	1.325	.186	.948	1.054

a. Dependent Variable: Salesperson_performance

Collinearity Diagnostics [a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions							
				(Constant)	Zscore (Capability_control)	Zscore (Task_complexity)	Zscore (Product_complexity)	Zscore (Accounts_log)	CC_by_TC	CC_by_PC	CC_by_A
1	1	1.071	1.000	.46	.46						
	2	.929	1.073	.54	.54						
2	1	1.431	1.000	.00	.11	.23	.24	.05			
	2	1.055	1.165	.04	.17	.05	.10	.54			
	3	1.044	1.171	.71	.17	.04	.00	.01			
	4	.832	1.311	.25	.49	.08	.01	.32			
	5	.637	1.498	.00	.07	.60	.65	.08			
3	1	1.601	1.000	.01	.05	.10	.08	.01	.15	.11	.01
	2	1.334	1.095	.09	.05	.11	.14	.05	.07	.10	.04
	3	1.115	1.198	.07	.14	.00	.03	.12	.00	.10	.36
	4	1.045	1.238	.18	.19	.13	.08	.13	.04	.02	.10
	5	1.011	1.258	.27	.08	.00	.01	.41	.01	.01	.14
	6	.761	1.450	.32	.31	.17	.11	.14	.03	.00	.13
	7	.620	1.607	.02	.18	.45	.51	.09	.09	.03	.04
	8	.513	1.767	.04	.01	.04	.05	.05	.60	.63	.19

a. Dependent Variable: Salesperson_performance

Casewise Diagnostics[a]

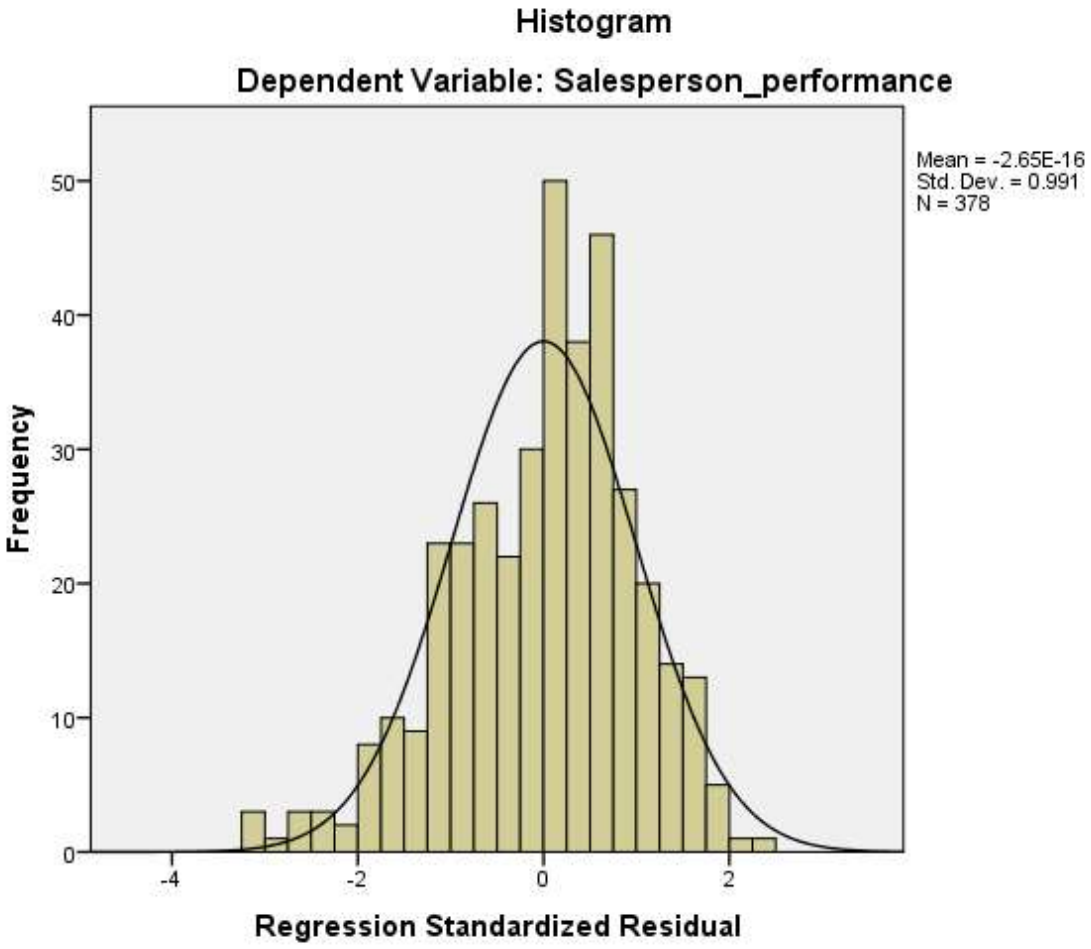
Case Number	Std. Residual	Salesperson_performance	Predicted Value	Residual
194	-3.052	3.17	5.5675	-2.40080
320	-3.149	3.00	5.4764	-2.47643
394	-3.100	3.00	5.4383	-2.43831

a. Dependent Variable: Salesperson_performance

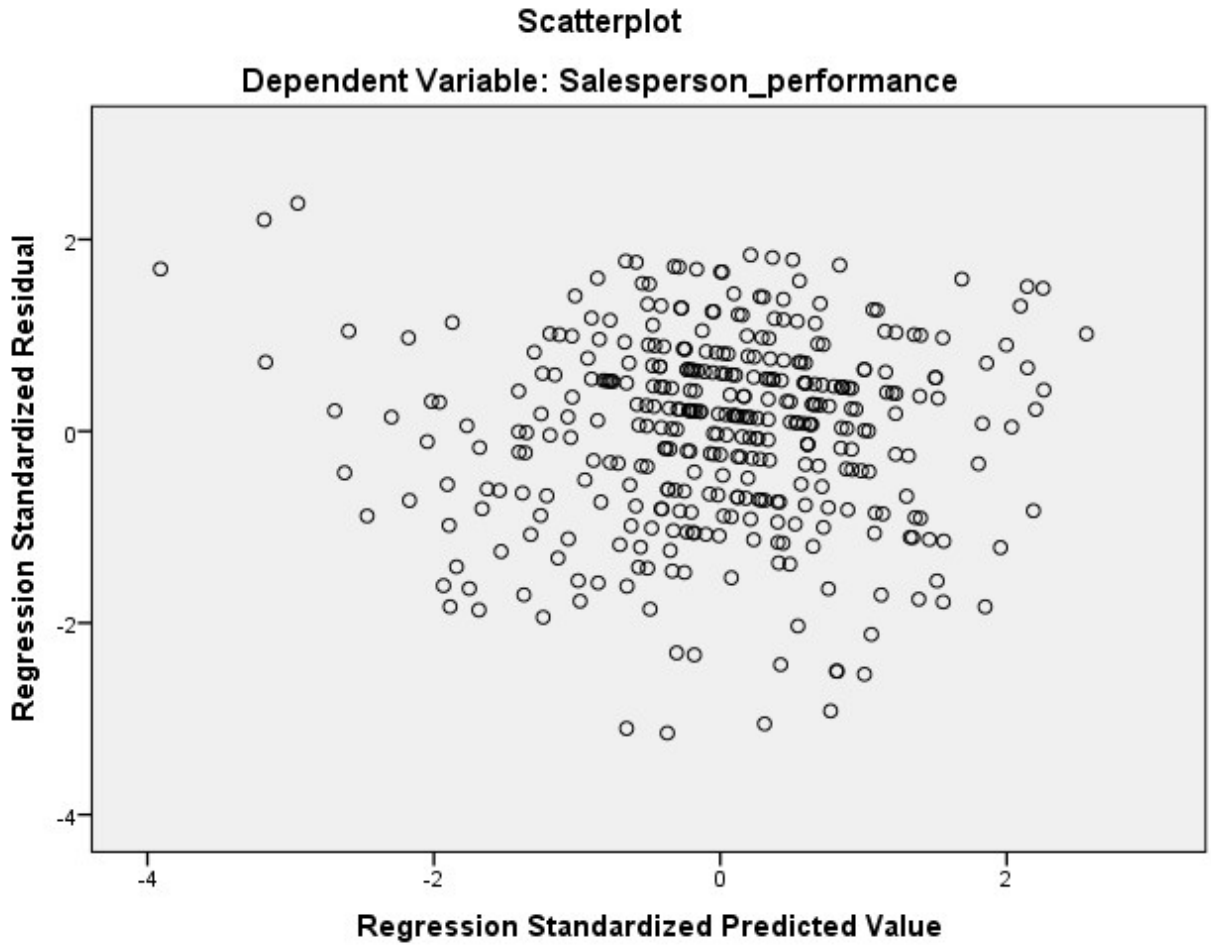
Residuals Statistics[a]

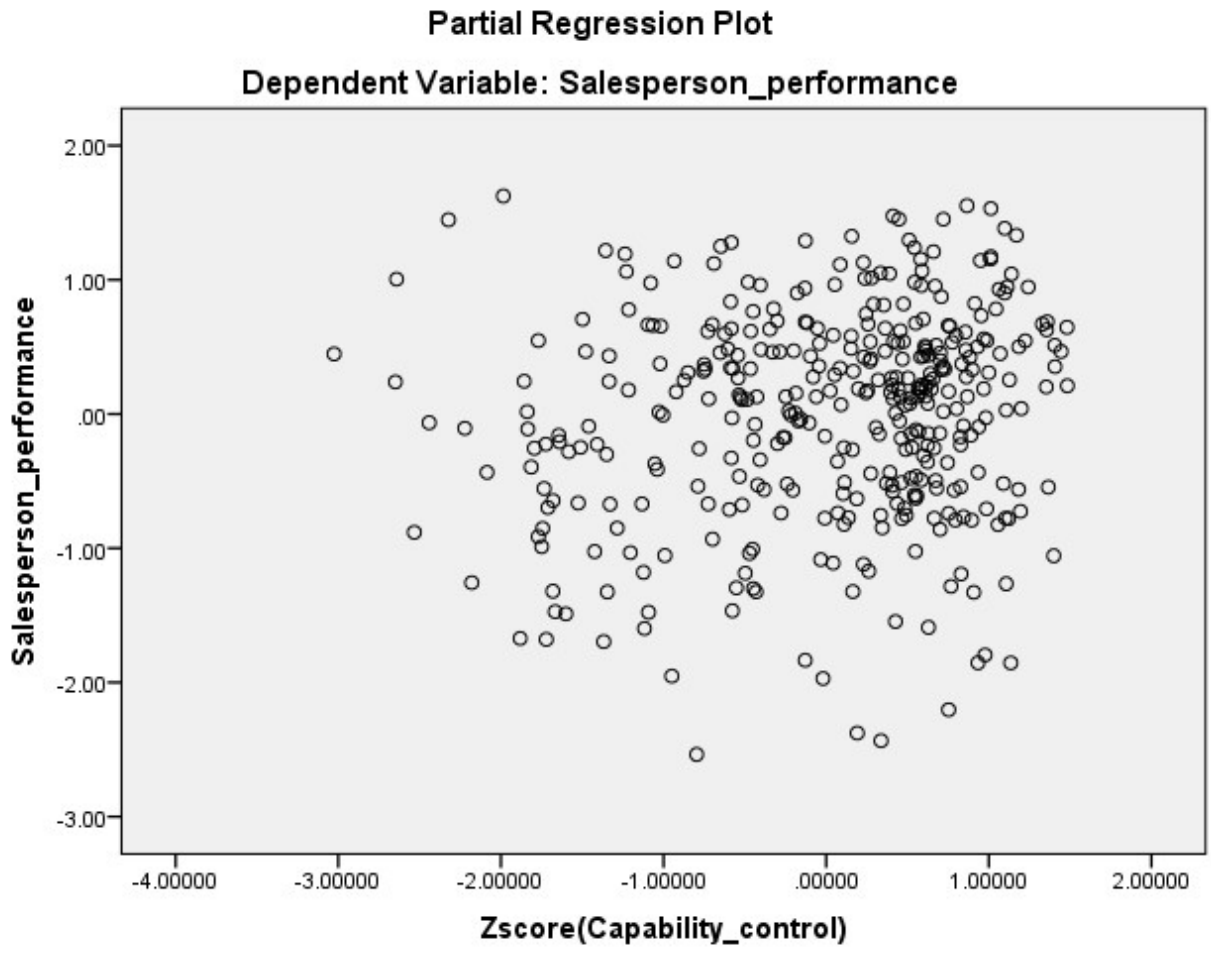
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5.0021	5.8686	5.5260	.13404	378
Std. Predicted Value	-3.909	2.556	.000	1.000	378
Standard Error of Predicted Value	.044	.322	.105	.044	378
Adjusted Predicted Value	4.8907	5.8376	5.5242	.13775	378
Residual	-2.47643	1.86946	.00000	.77918	378
Std. Residual	-3.149	2.377	.000	.991	378
Stud. Residual	-3.172	2.441	.001	1.002	378
Deleted Residual	-2.51391	1.97165	.00180	.79809	378
Stud. Deleted Residual	-3.212	2.458	.000	1.006	378
Mahal. Distance	.203	62.283	6.981	7.799	378
Cook’s Distance	.000	.041	.003	.006	378
Centered Leverage Value	.001	.165	.019	.021	378

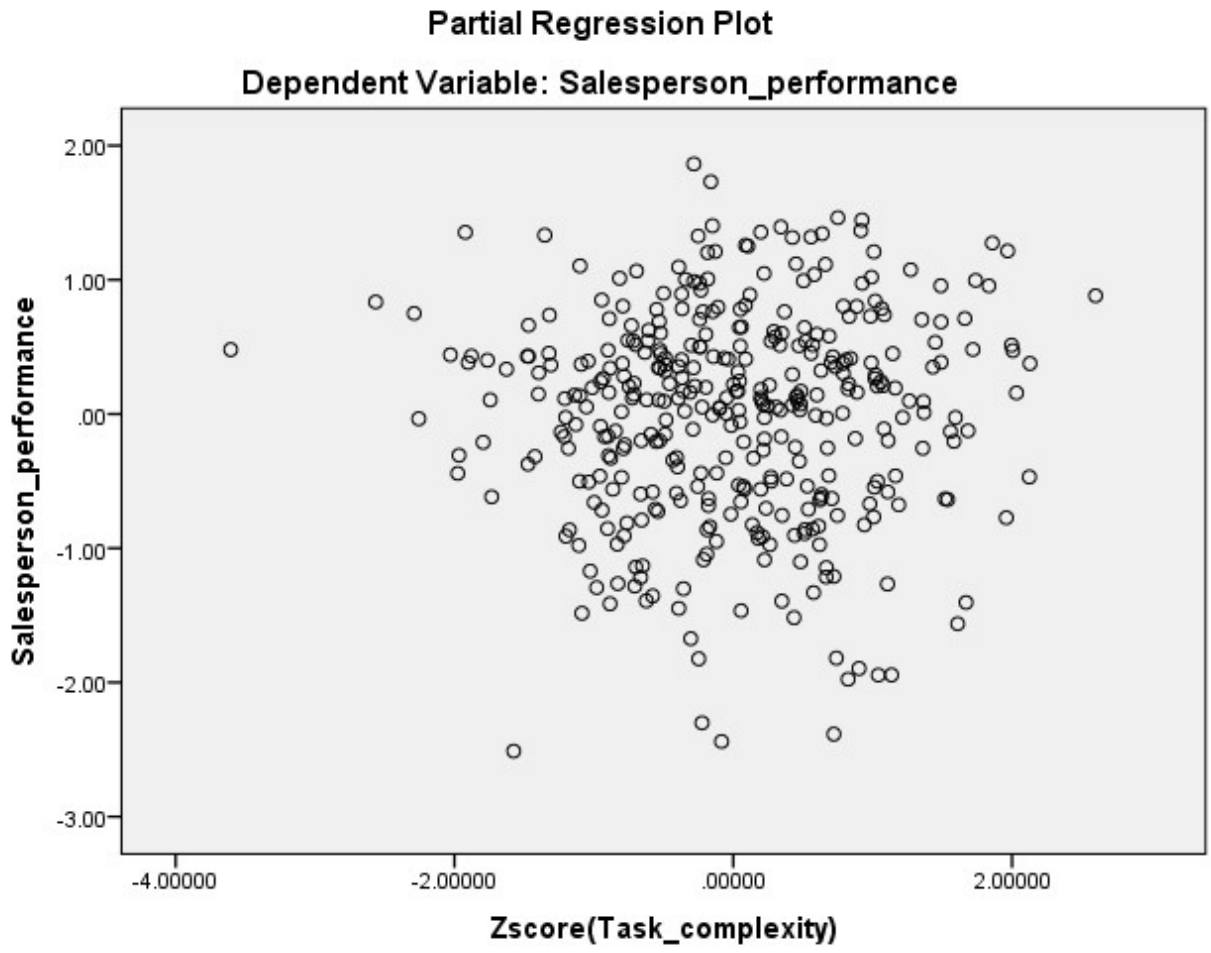
a. Dependent Variable: Salesperson_performance


Histogram
Dependent Variable: Salesperson_performance
Mean = -2.65E-16
Std. Dev. = 0.991
N = 378
Frequency
50
40
30
20
10
0
-4
-2
0
2
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Salesperson_performance
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: Salesperson_performance
Regression Standardized Residual
Regression Standardized Predicted Value
2
0
-2
-4
-4
-2
0
2


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-4.00000
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
Zscore(Capability_control)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
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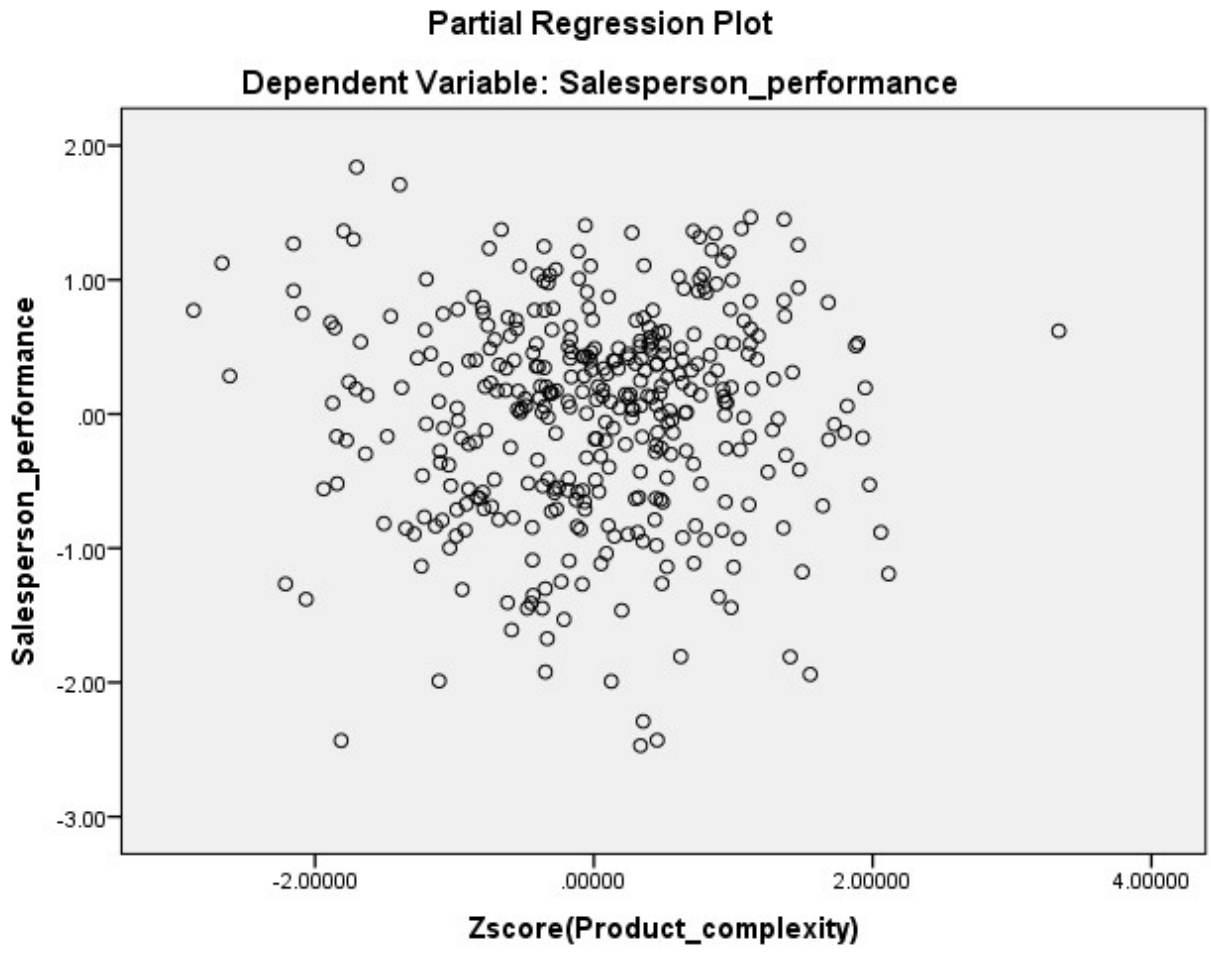
1.00
.00
-1.00
-2.00
-3.00
-4.00000
-2.00000
.00000
2.00000
Zscore(Task_complexity)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
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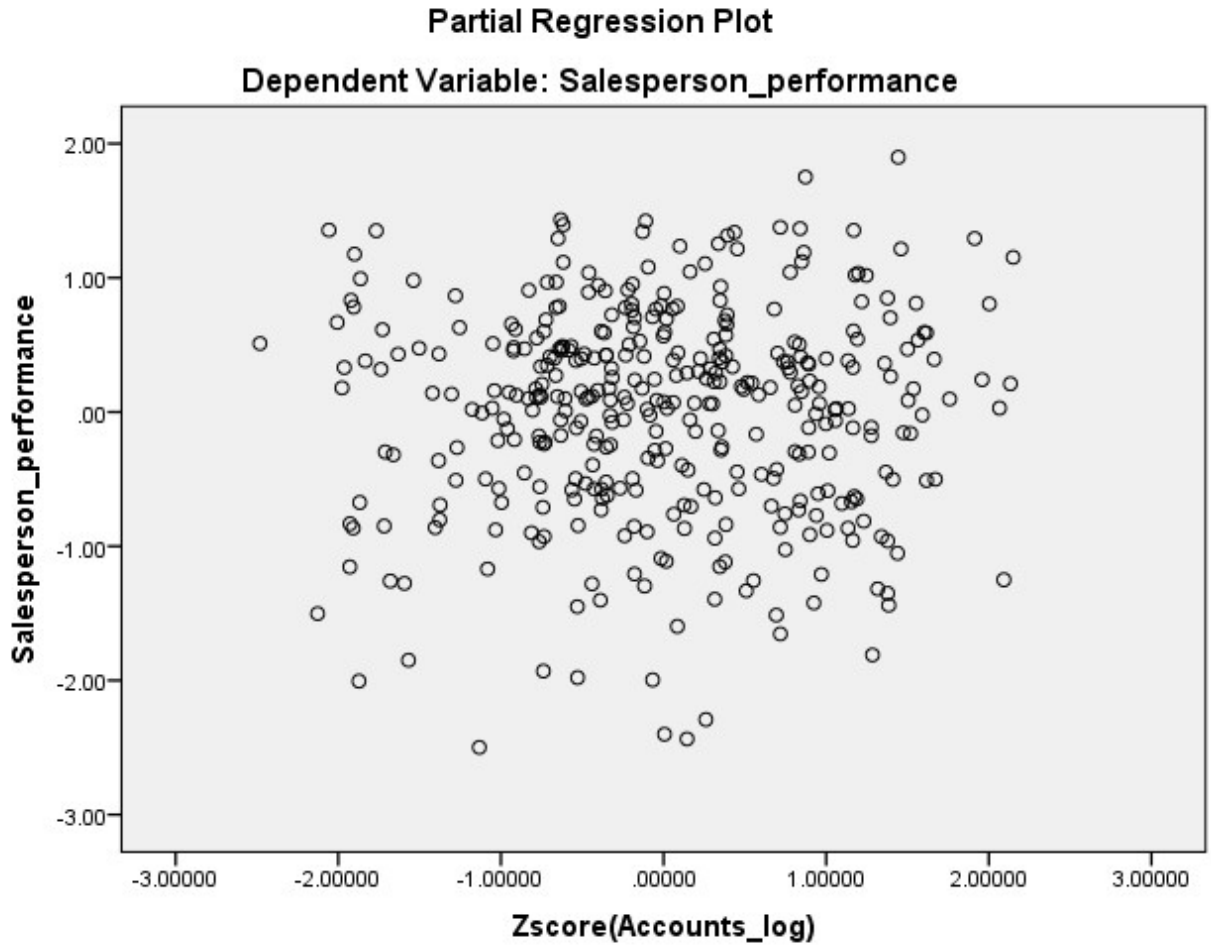
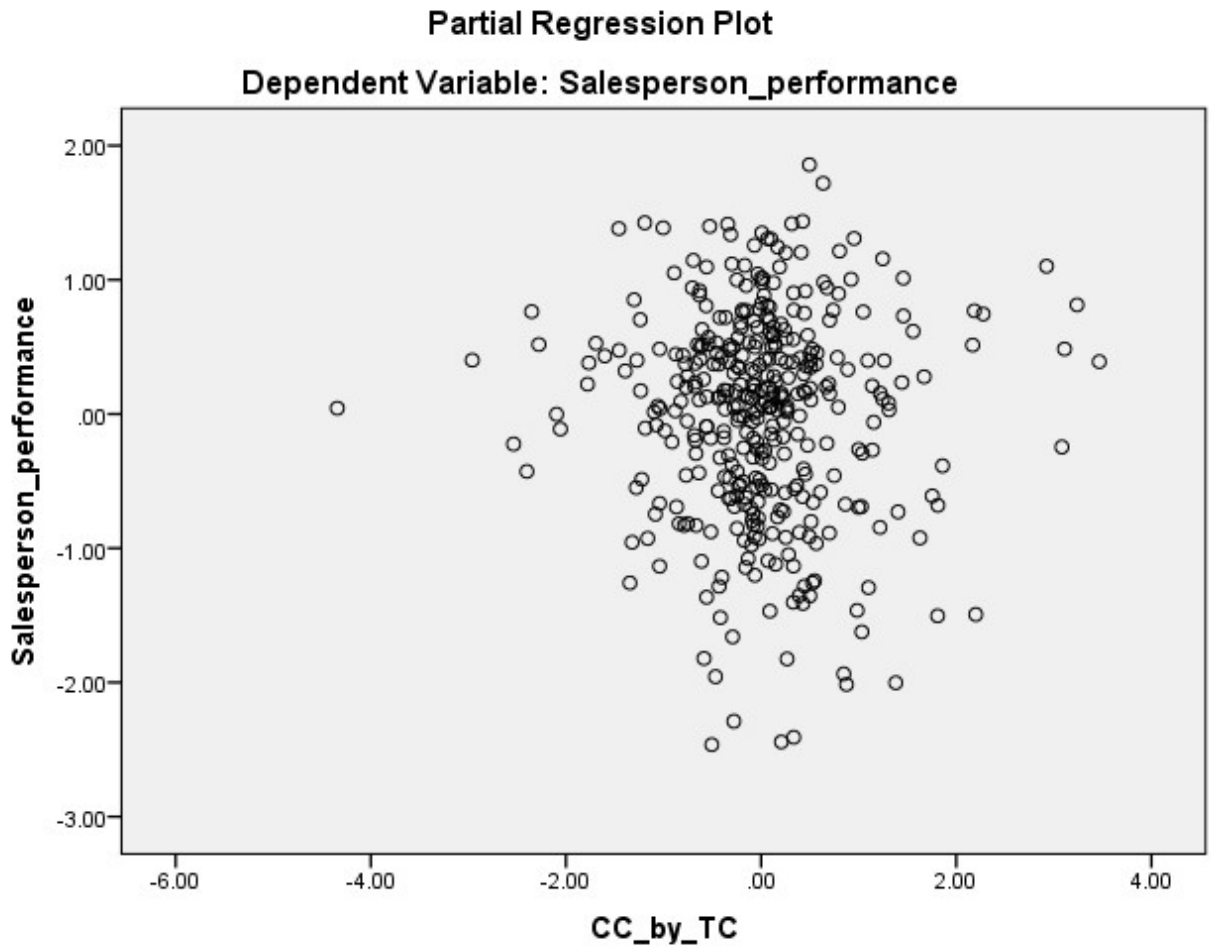
1.00
.00
-1.00
-2.00
-3.00
-2.00000
.00000
2.00000
4.00000
Zscore(Product_complexity)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
3.00000
Zscore(Accounts_log)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-6.00
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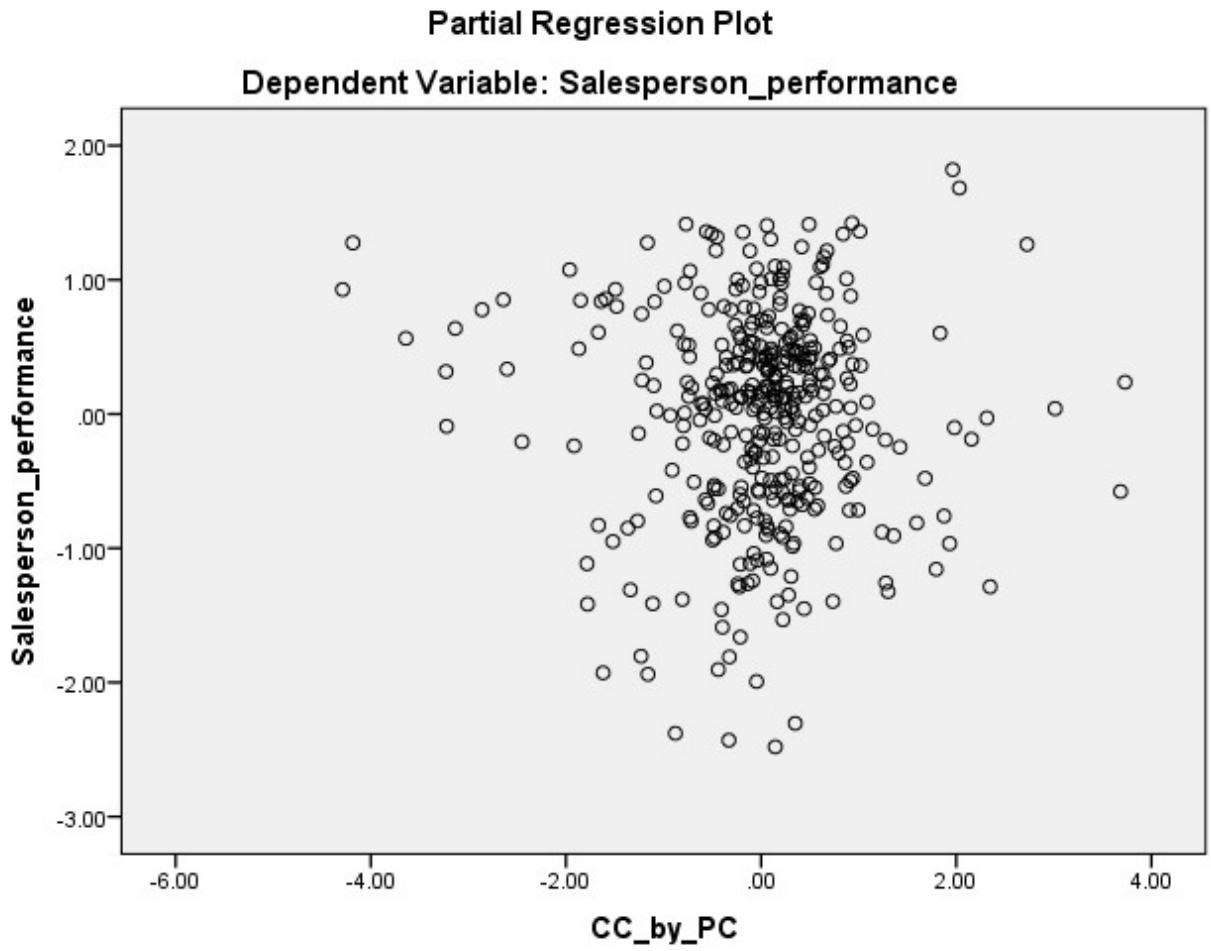
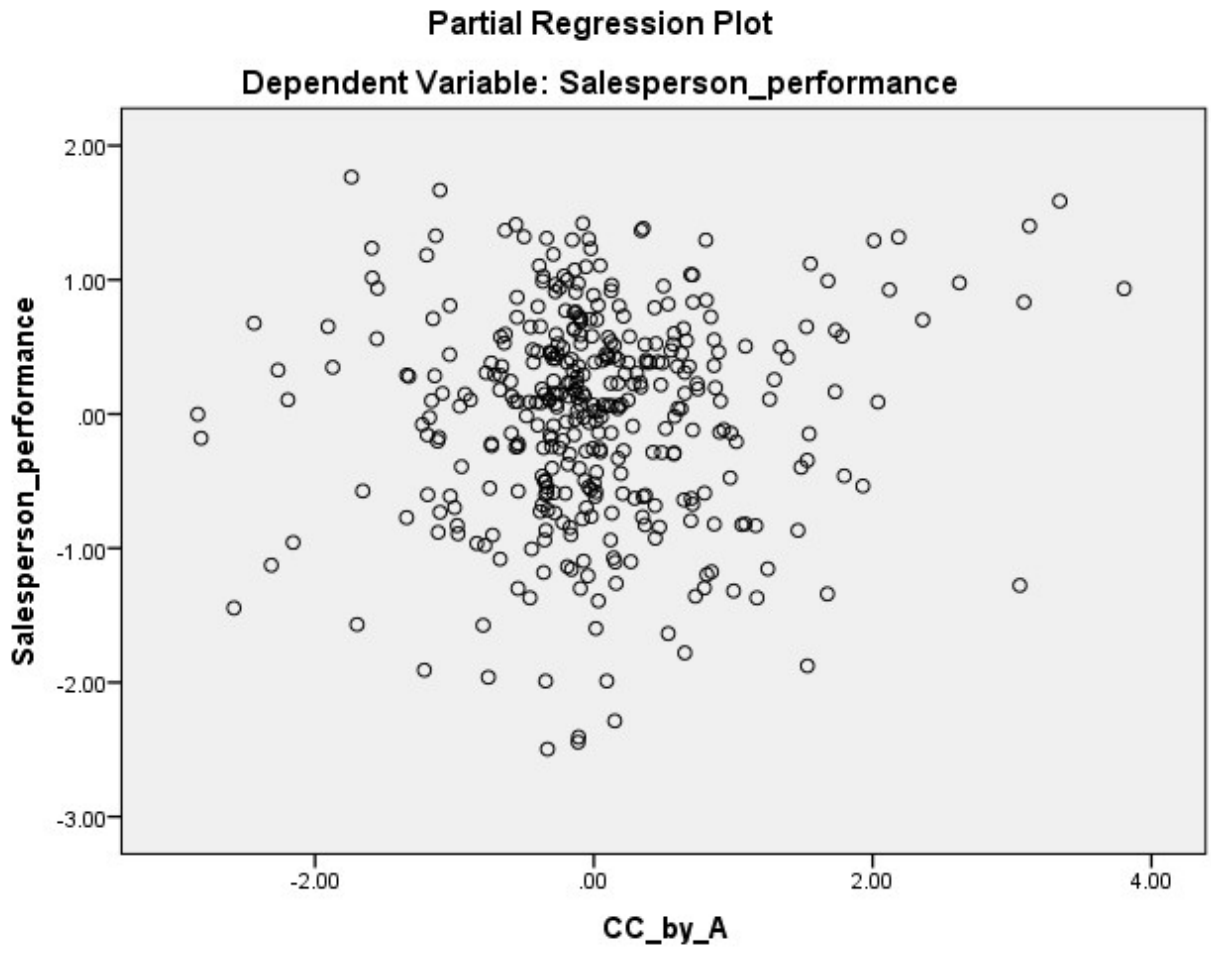
-2.00
.00
2.00
4.00
CC_by_TC


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-6.00
-4.00
-2.00
.00
2.00
4.00
CC_by_PC



Research Question 4

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.515	.041		135.718	.000		
	Zscore(Activity_control)	.116	.047	.127	2.479	.014	1.000	1.000
2	(Constant)	5.516	.041		135.113	.000		
	Zscore(Activity_control)	.116	.048	.127	2.434	.015	.970	1.031
	Zscore(Task_complexity)	.029	.044	.036	.656	.512	.876	1.142
	Zscore (Product complexity)	.012	.043	.015	.268	.789	.874	1.144
	Zscore(Accounts_log)	.029	.042	.036	.687	.493	.976	1.024
3	(Constant)	5.505	.041		133.149	.000		
	Zscore(Activity_control)	.138	.049	.151	2.829	.005	.923	1.083
	Zscore(Task_complexity)	.026	.044	.032	.579	.563	.846	1.181
	Zscore (Product_complexity)	.005	.044	.007	.118	.906	.842	1.187
	Zscore(Accounts_log)	.026	.043	.031	.597	.551	.945	1.058
	AC_by_TC	-.073	.047	-.093	-1.544	.124	.725	1.379
	AC_by_PC	.022	.048	.028	.466	.642	.744	1.345
	AC_by_A	.064	.050	.068	1.275	.203	.909	1.101

a. Dependent Variable: Salesperson_performance

Collinearity Diagnostics [a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions							
				(Constant)	Zscore (Activity_control)	Zscore (Task_complexity)	Zscore (Product_complexity)	Zscore (Accounts_log)	AC_by_TC	AC_by_PC	AC_by_A
1	1	1.110	1.000	.45	.45						
	2	.890	1.116	.55	.55						
2	1	1.422	1.000	.00	.10	.24	.24	.04			
	2	1.079	1.148	.53	.28	.06	.02	.00			
	3	1.040	1.169	.11	.07	.02	.08	.63			
	4	.817	1.319	.35	.51	.06	.01	.26			
	5	.642	1.488	.00	.04	.62	.64	.07			
3	1	1.710	1.000	.01	.04	.06	.03	.01	.14	.11	.07
	2	1.351	1.125	.06	.06	.15	.21	.03	.03	.08	.01
	3	1.081	1.257	.17	.19	.04	.01	.24	.00	.01	.20
	4	1.077	1.260	.12	.17	.08	.07	.32	.03	.00	.06
	5	.976	1.324	.37	.09	.00	.02	.12	.05	.09	.18
	6	.742	1.518	.14	.06	.36	.31	.06	.09	.03	.12
	7	.624	1.655	.12	.39	.11	.10	.18	.08	.11	.32
	8	.438	1.976	.01	.00	.21	.26	.05	.59	.58	.04

a. Dependent Variable: Salesperson_performance

Casewise Diagnostics[a]

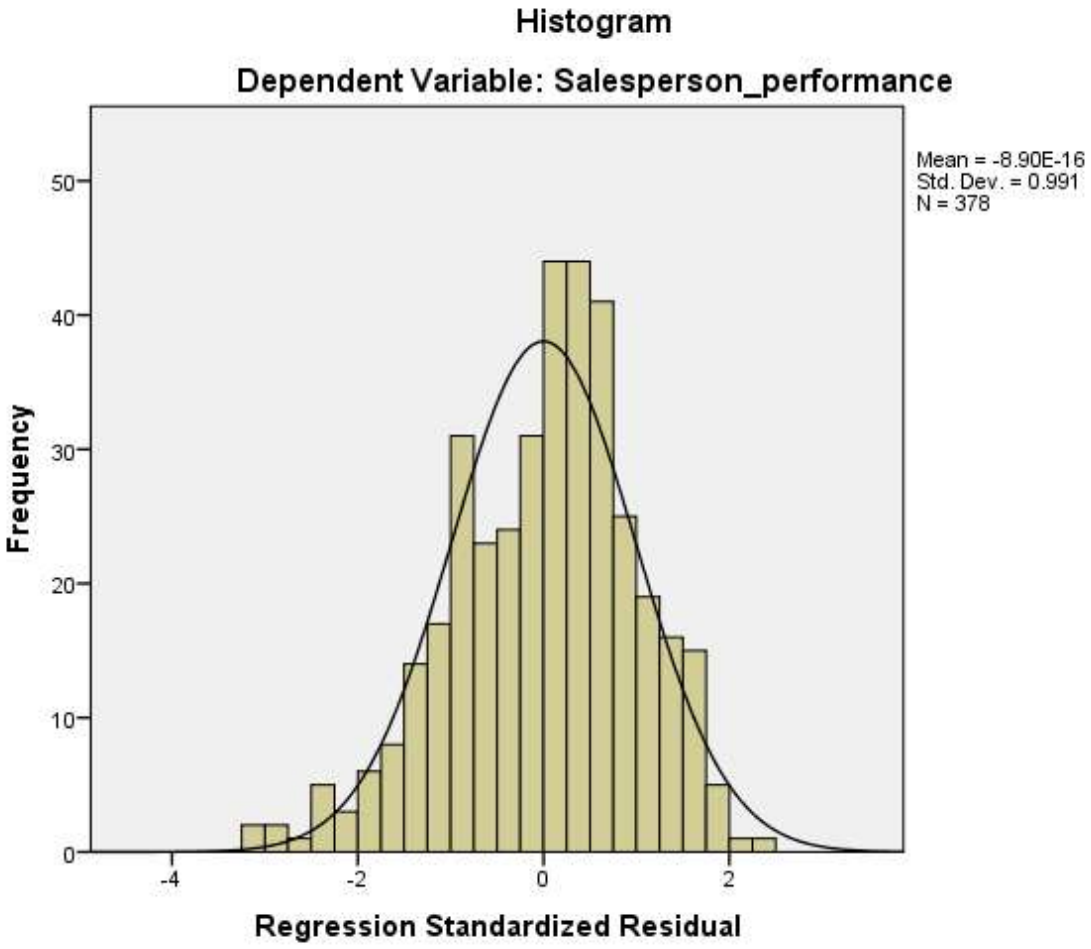
Case Number	Std. Residual	Salesperson_performance	Predicted Value	Residual
194	-3.098	3.17	5.5995	-2.43282
320	-3.246	3.00	5.5492	-2.54917

a. Dependent Variable: Salesperson_performance

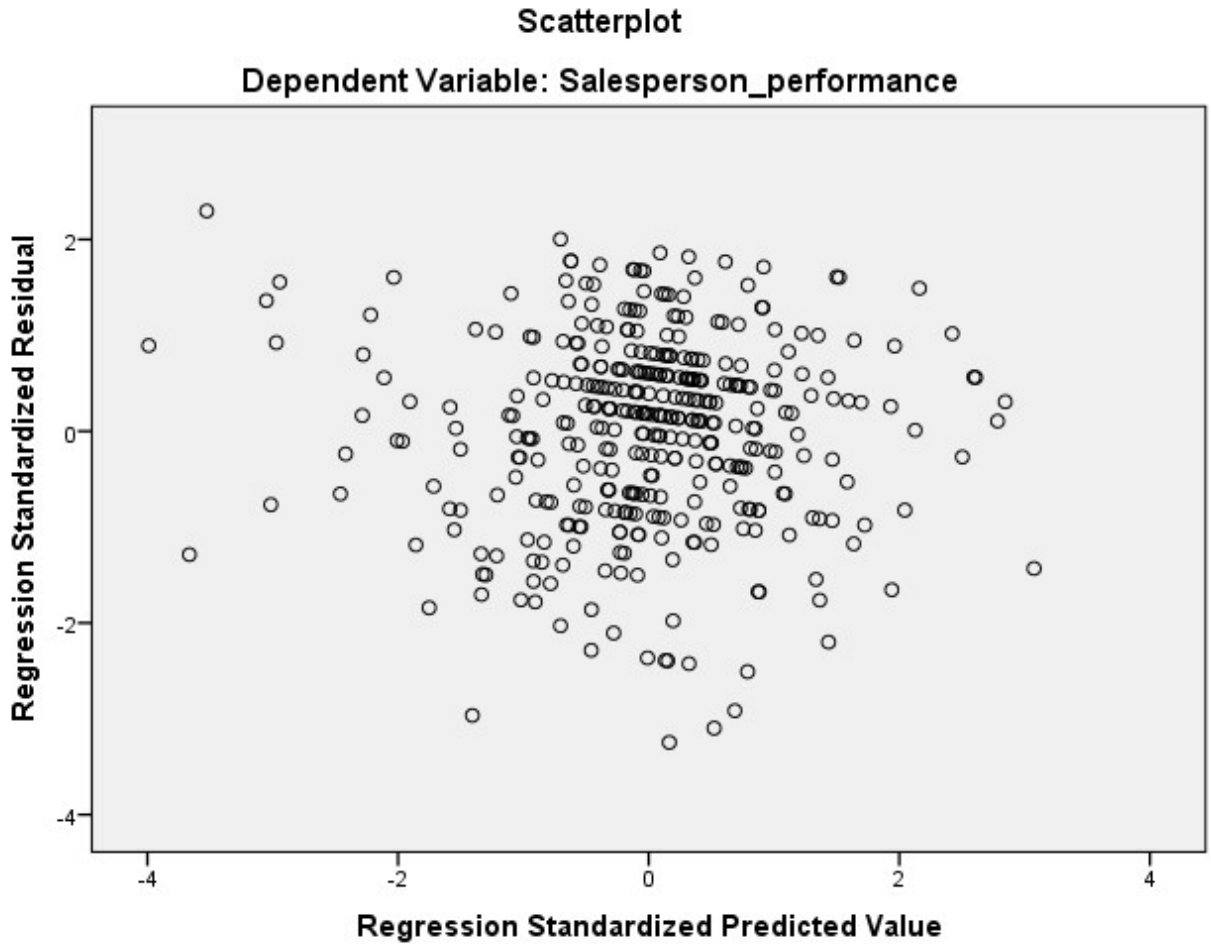
Residuals Statistics[a]

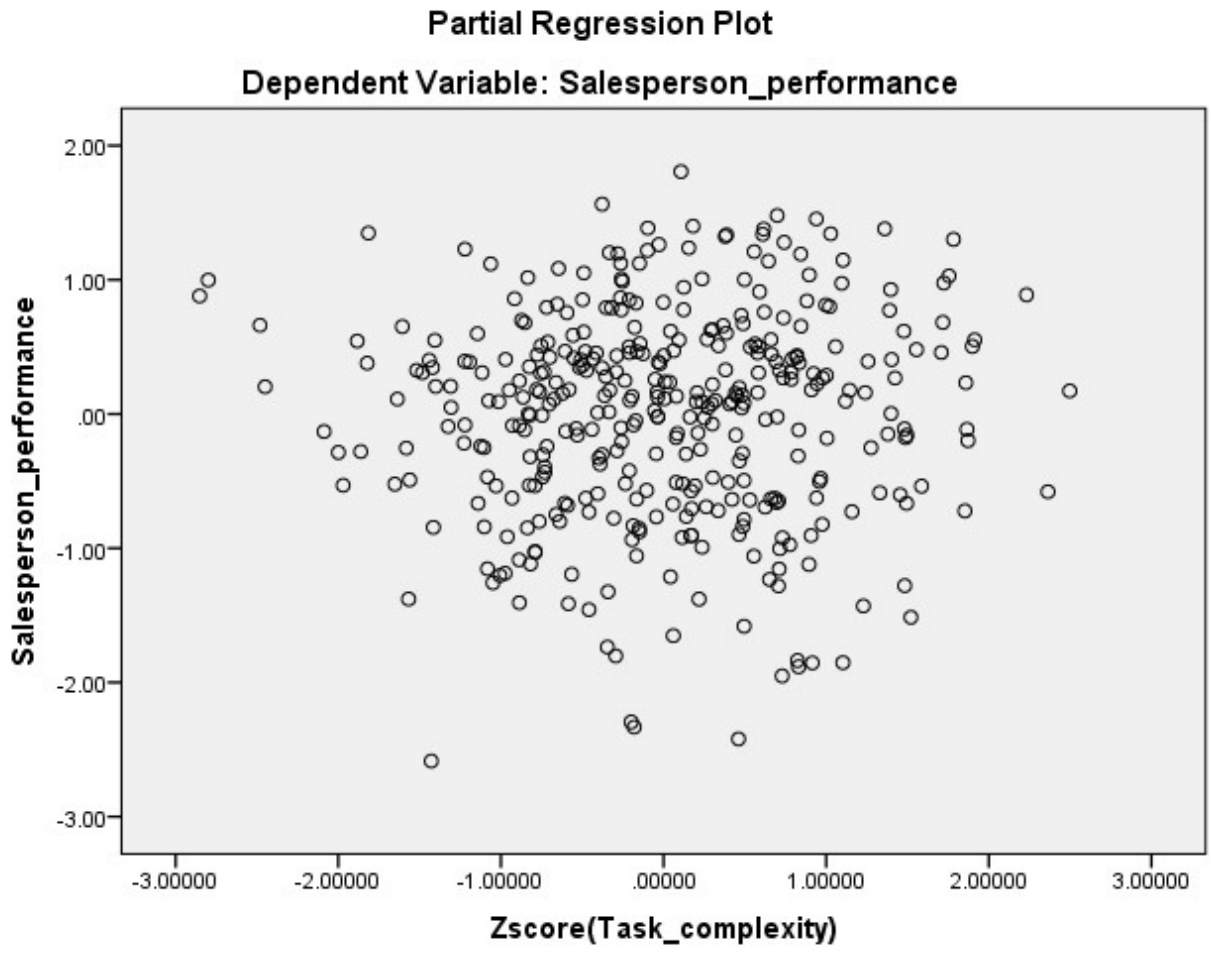
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.9649	5.9585	5.5260	.14065	378
Std. Predicted Value	-3.990	3.075	.000	1.000	378
Standard Error of Predicted Value	.043	.334	.104	.047	378
Adjusted Predicted Value	4.8807	6.0124	5.5245	.14424	378
Residual	-2.54917	1.80339	.00000	.77802	378
Std. Residual	-3.246	2.296	.000	.991	378
Stud. Residual	-3.276	2.389	.001	1.003	378
Deleted Residual	-2.59733	1.95265	.00147	.79716	378
Stud. Deleted Residual	-3.321	2.405	.000	1.006	378
Mahal. Distance	.159	67.045	6.981	8.647	378
Cook's Distance	.000	.059	.003	.007	378
Centered Leverage Value	.000	.178	.019	.023	378

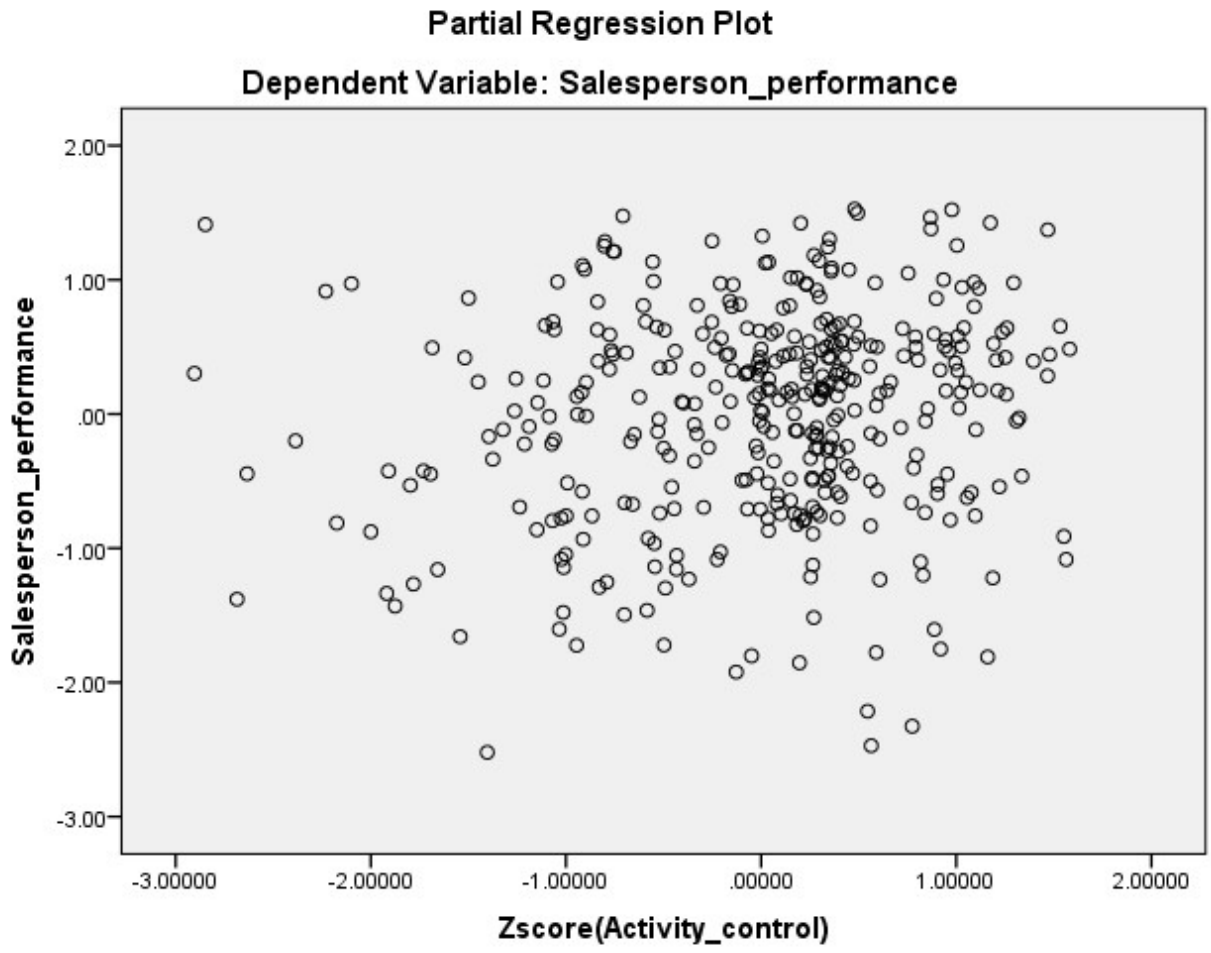
a. Dependent Variable: Salesperson_performance

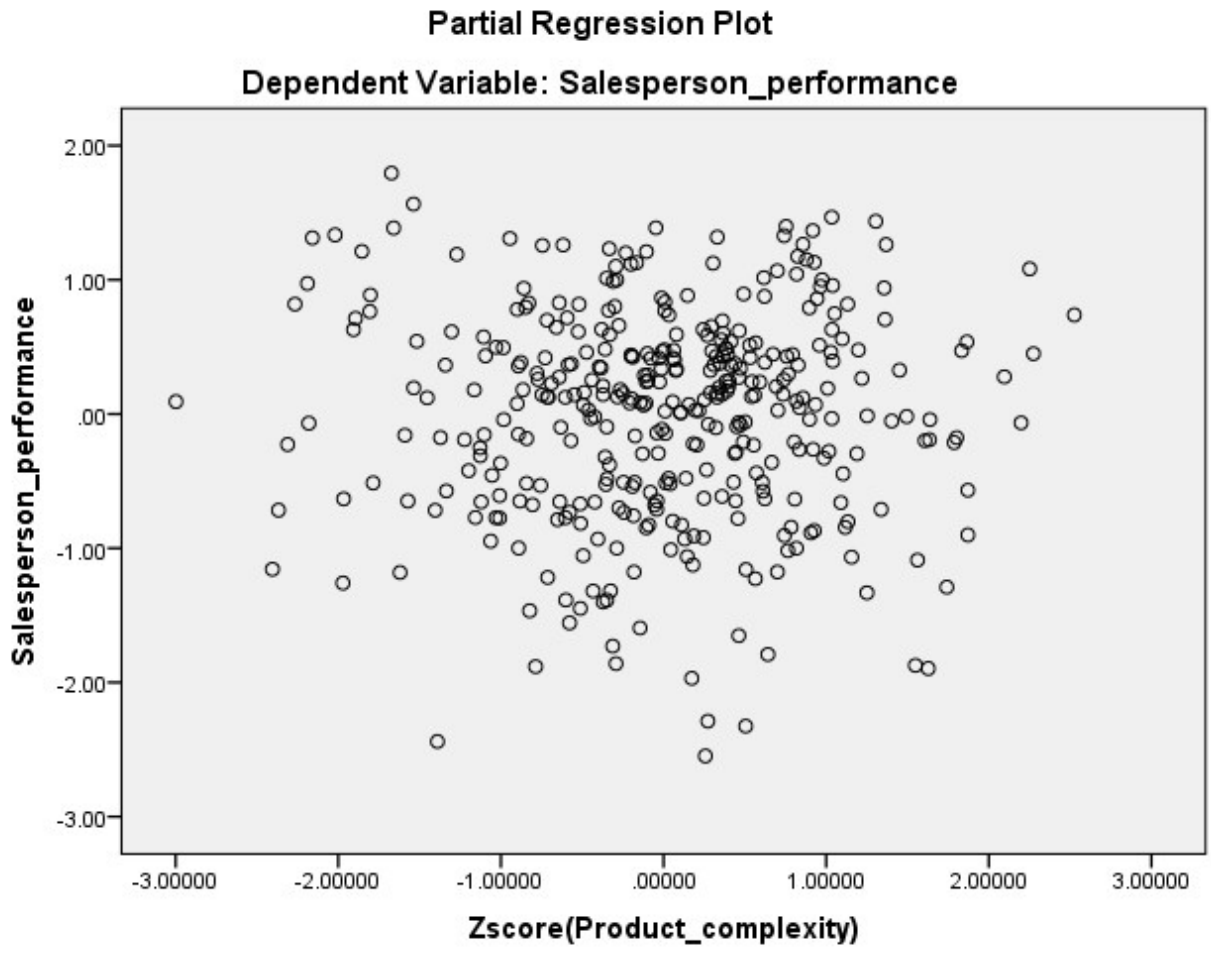

Histogram
Dependent Variable: Salesperson_performance
Mean = -8.90E-16
Std. Dev. = 0.991
N = 378
Frequency
50
40
30
20
10
0
-4
-2
0
2
Regression Standardized Residual

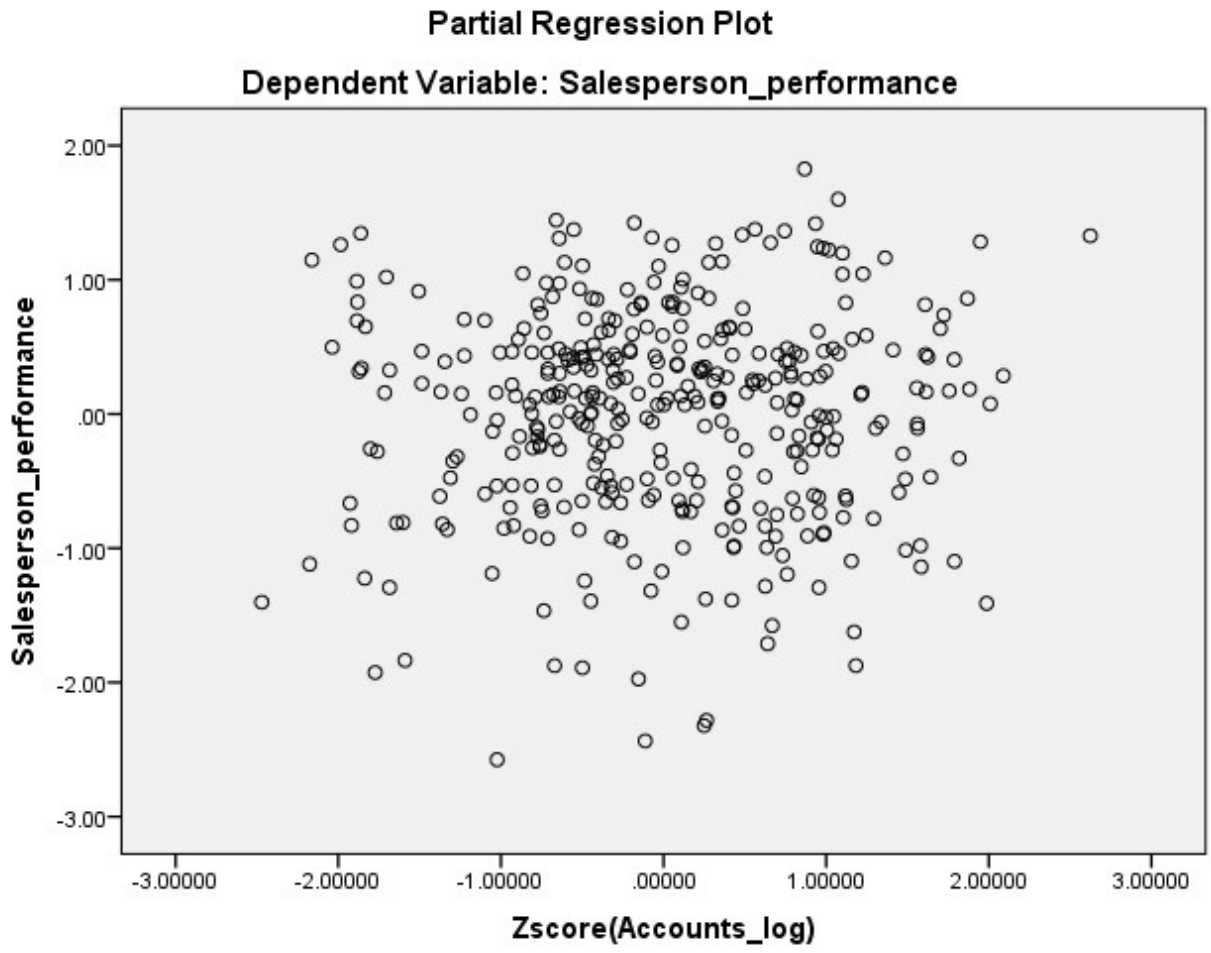

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Salesperson_performance
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0

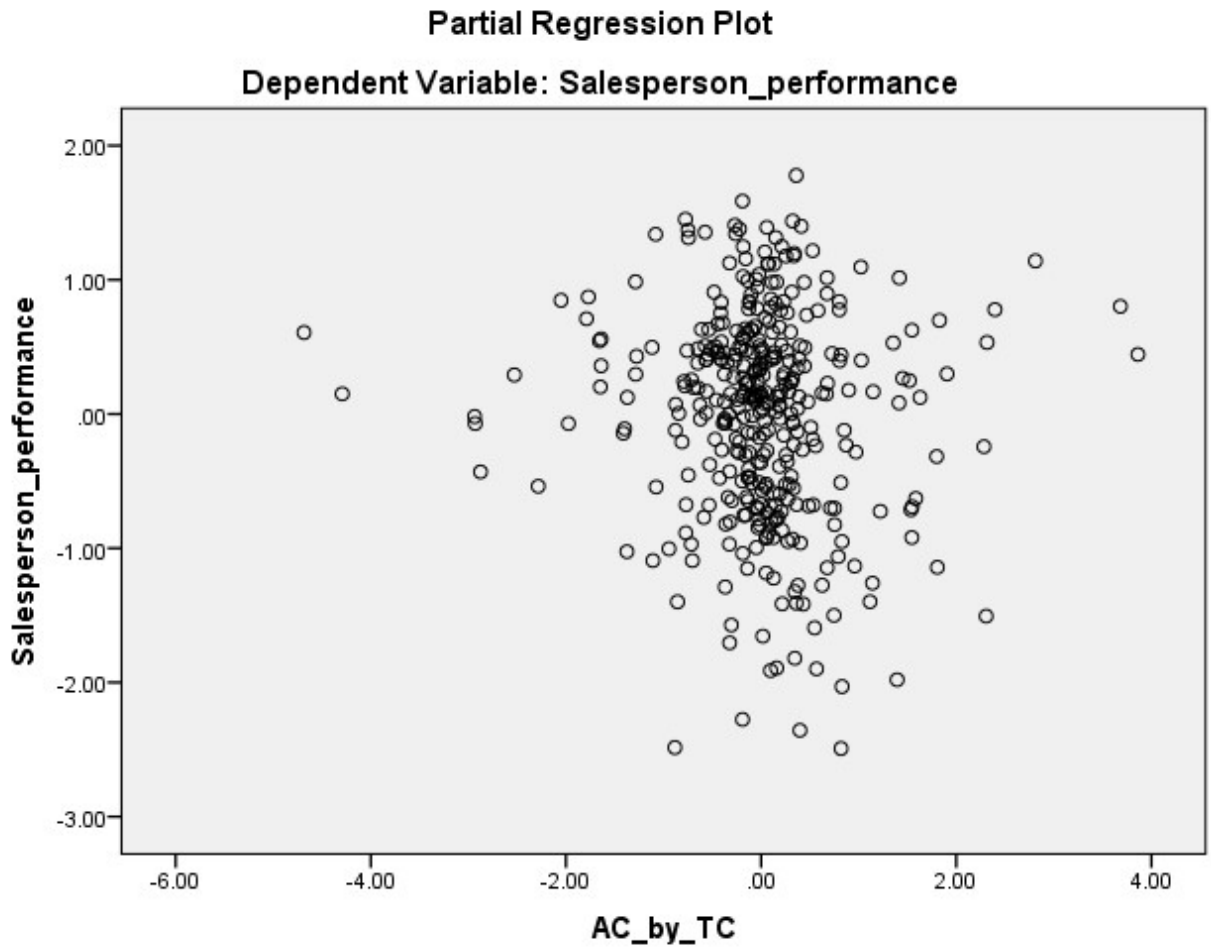

Scatterplot
Dependent Variable: Salesperson_performance
Regression Standardized Residual
Regression Standardized Predicted Value
2
0
-2
-4
-4
-2
0
2
4

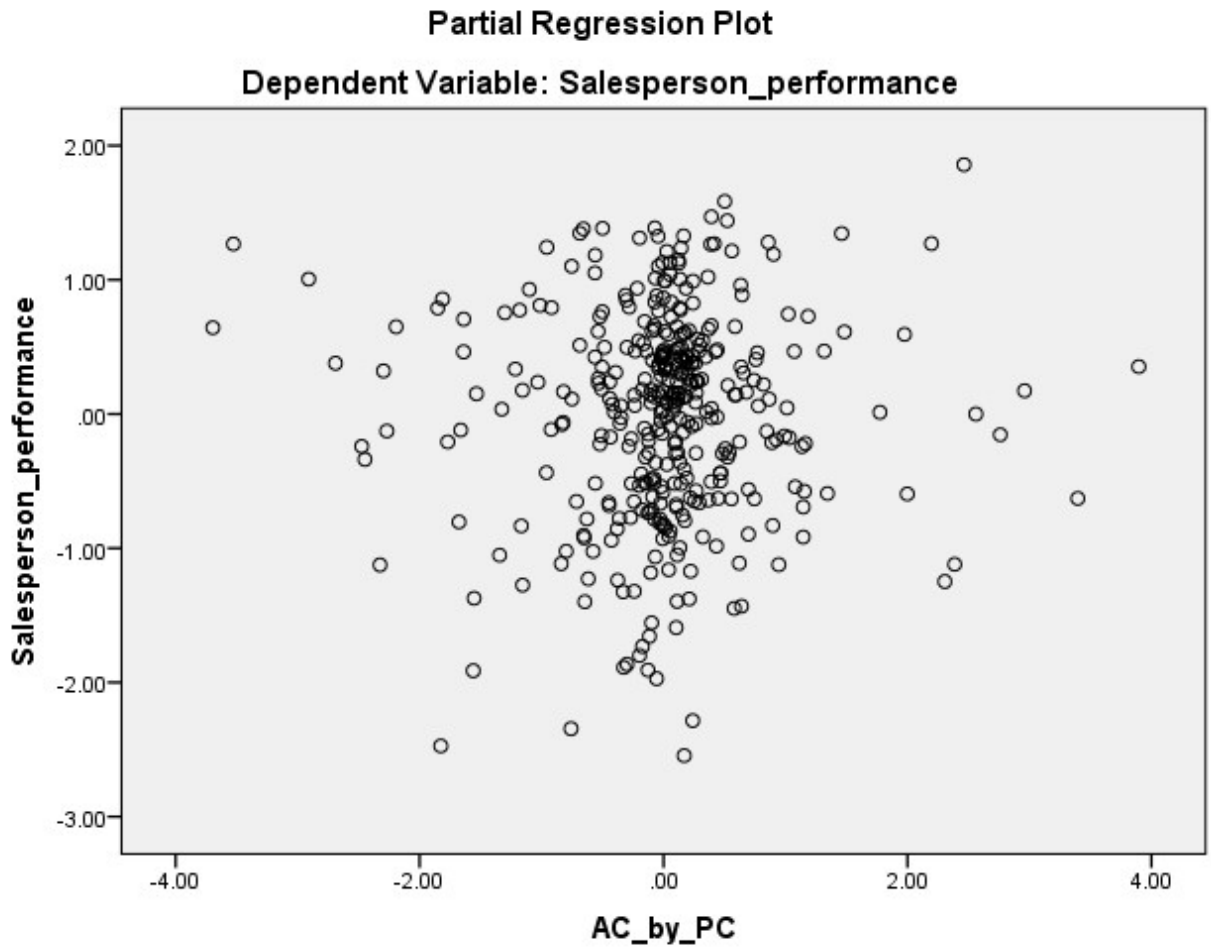

Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
3.00000
Zscore(Task_complexity)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
Zscore(Activity_control)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
3.00000
Zscore(Product_complexity)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
3.00000
Zscore(Accounts_log)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-6.00
-4.00
-2.00
.00
2.00
4.00
AC_by_TC


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
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.00
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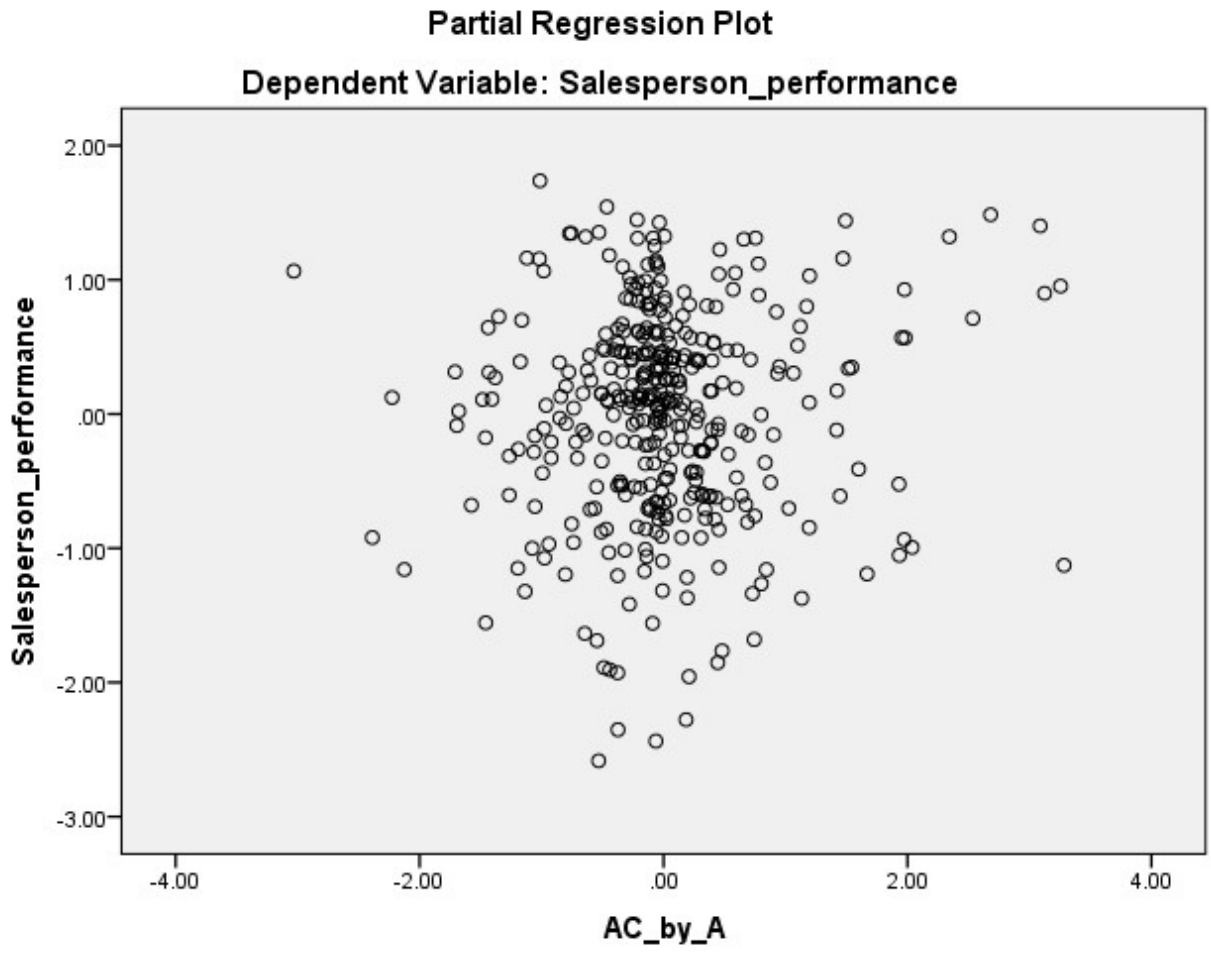
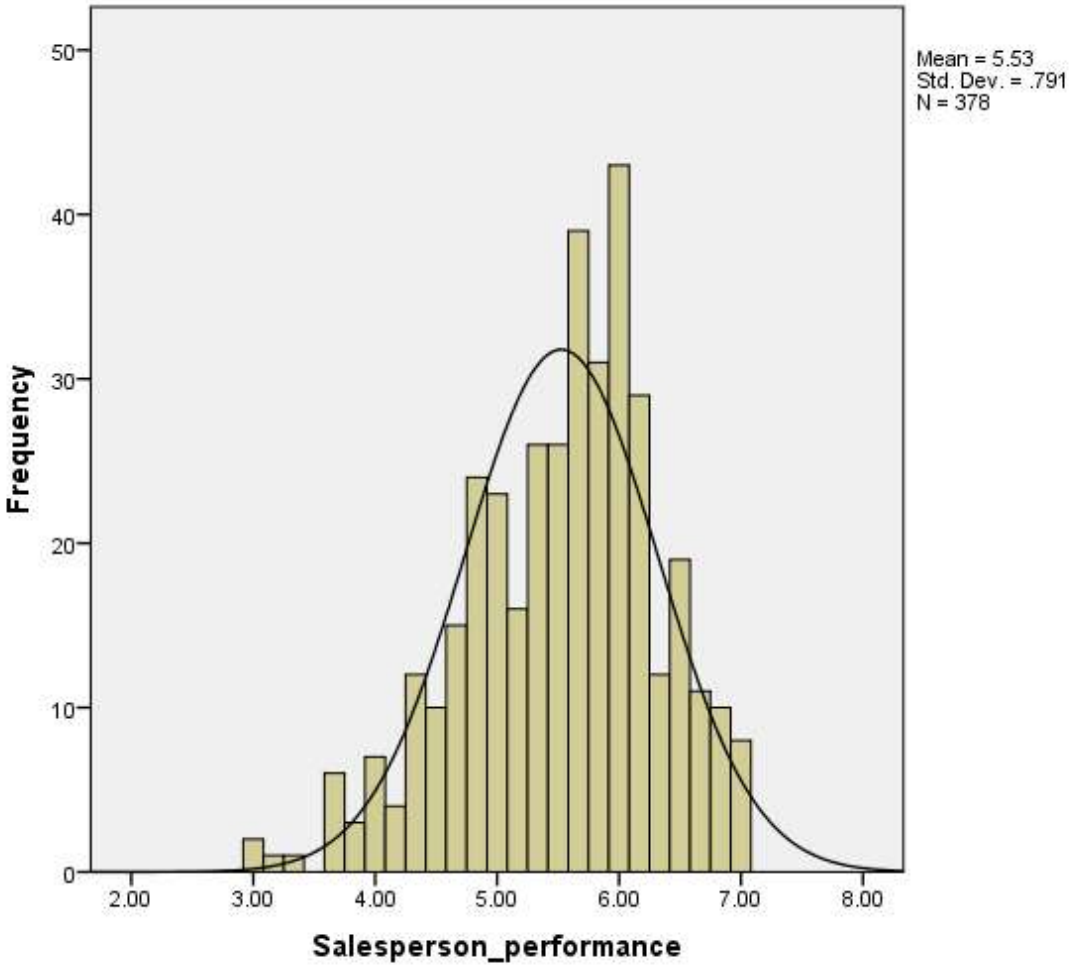
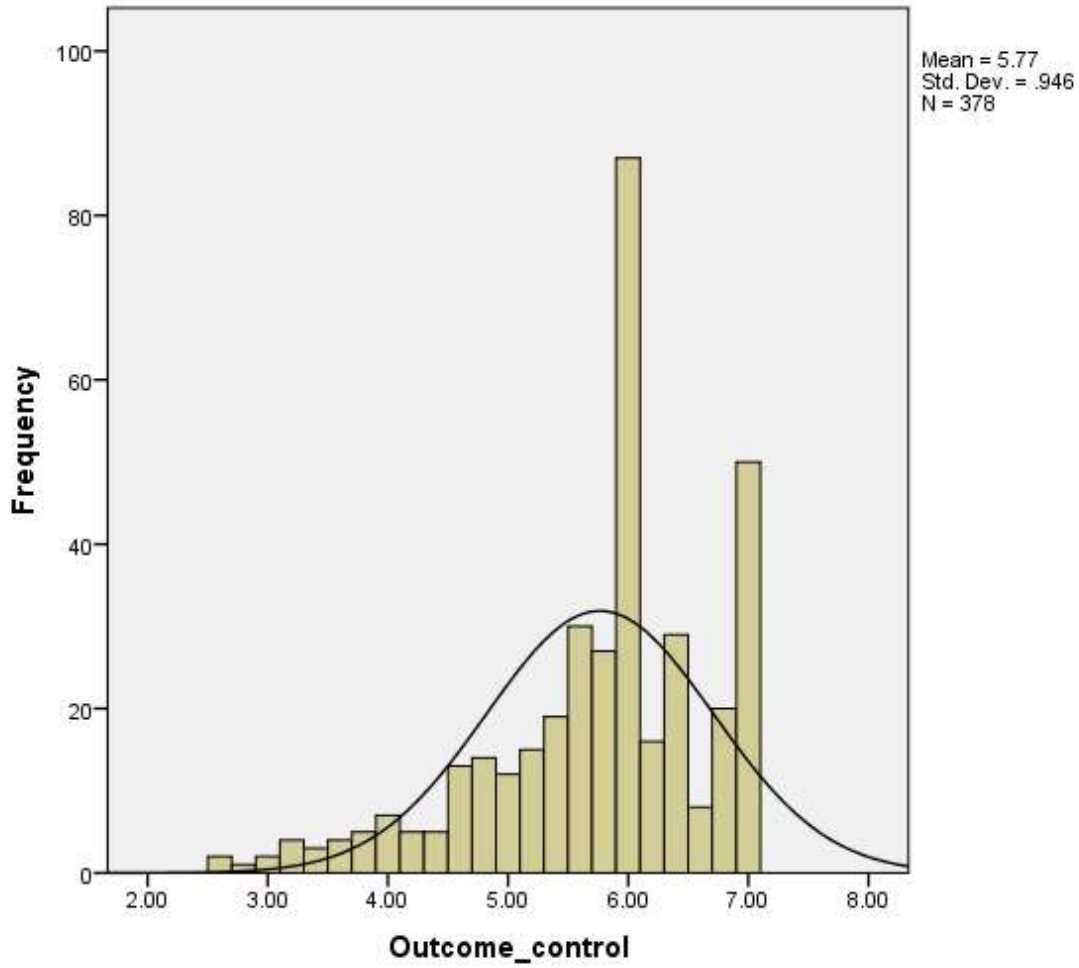
-2.00
-3.00
-4.00
-2.00
.00
2.00
4.00
AC_by_PC


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-4.00
-2.00
.00
2.00
4.00
AC_by_A

Additional Diagnostics




Mean = 5.77
Std. Dev. = .946
N = 378
Frequency
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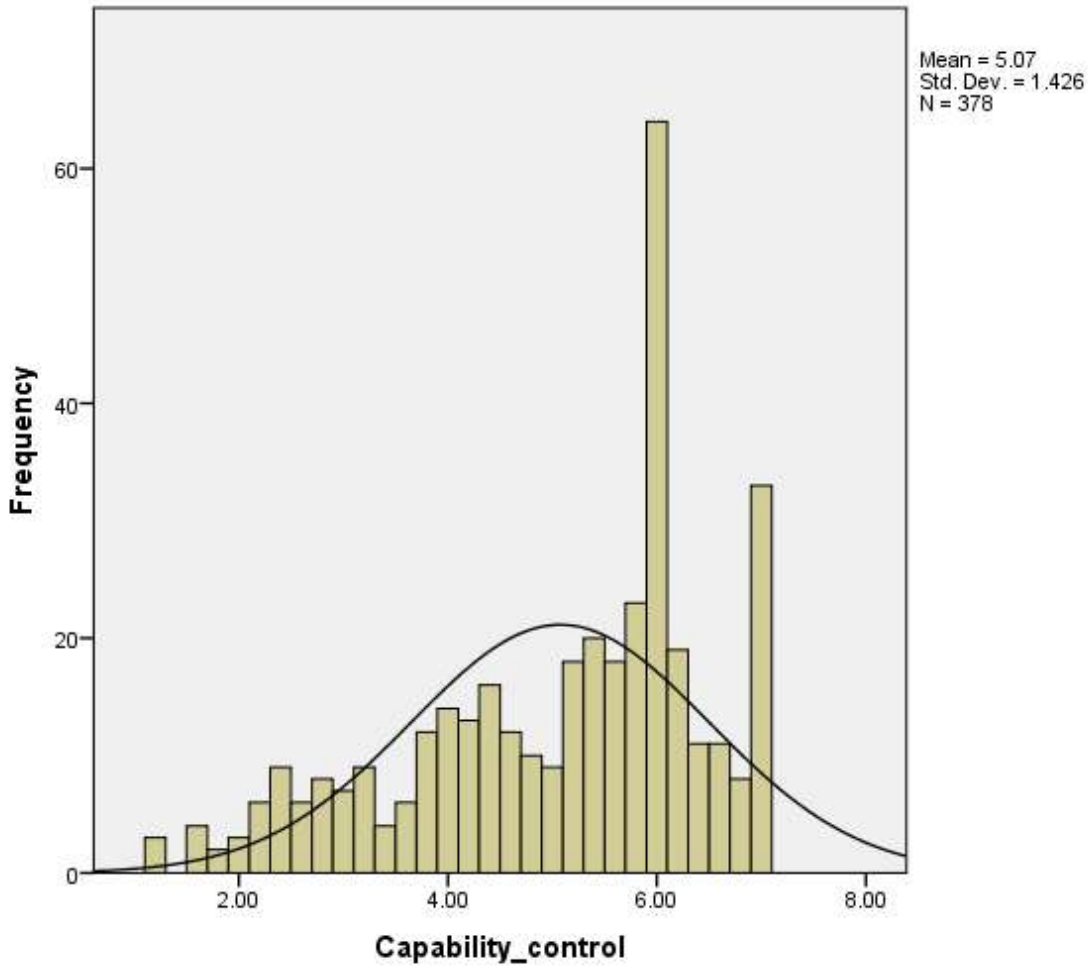
80
60
40
20
0
2.00
3.00
4.00
5.00
6.00
7.00
8.00
Outcome_control


Mean = 5.07
Std. Dev. = 1.426
N = 378
Frequency
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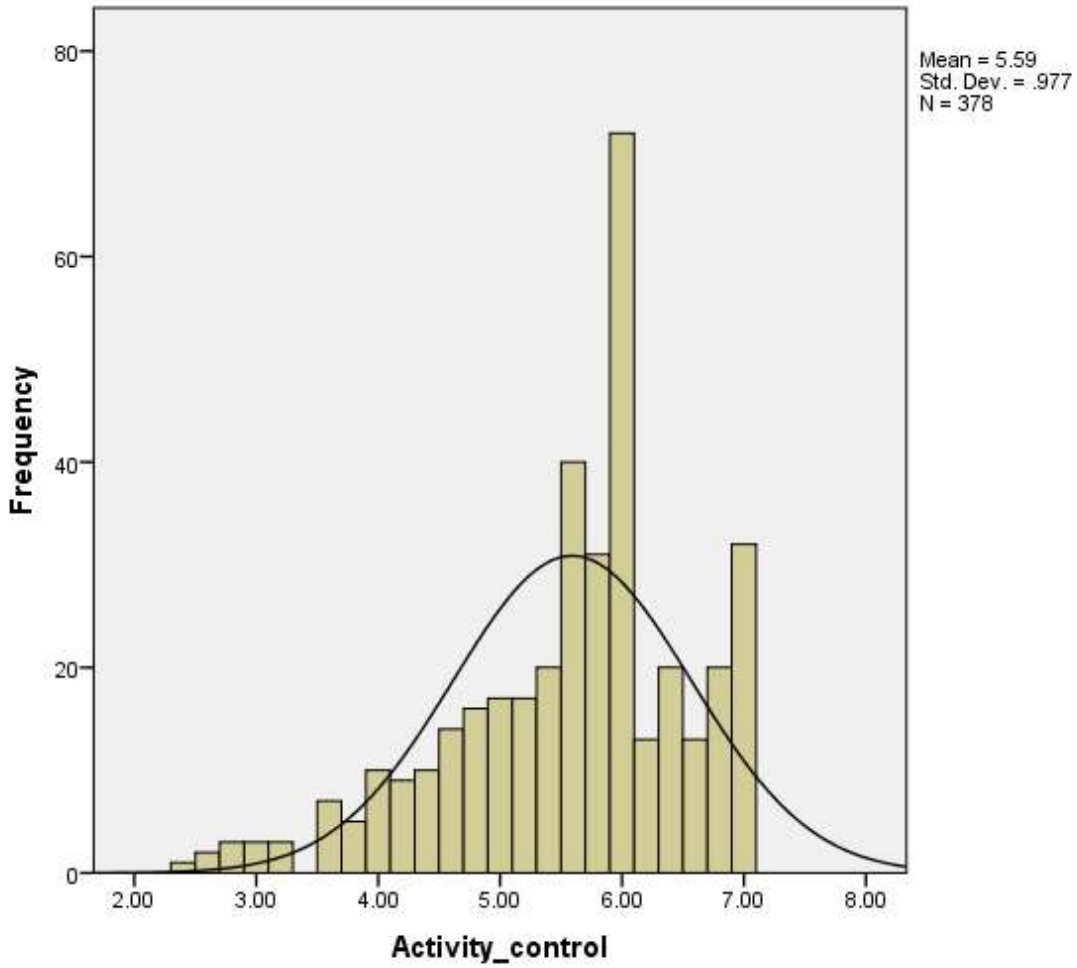
40
20
0
2.00
4.00
6.00
8.00
Capability_control


Mean = 5.59
Std. Dev. = .977
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Frequency
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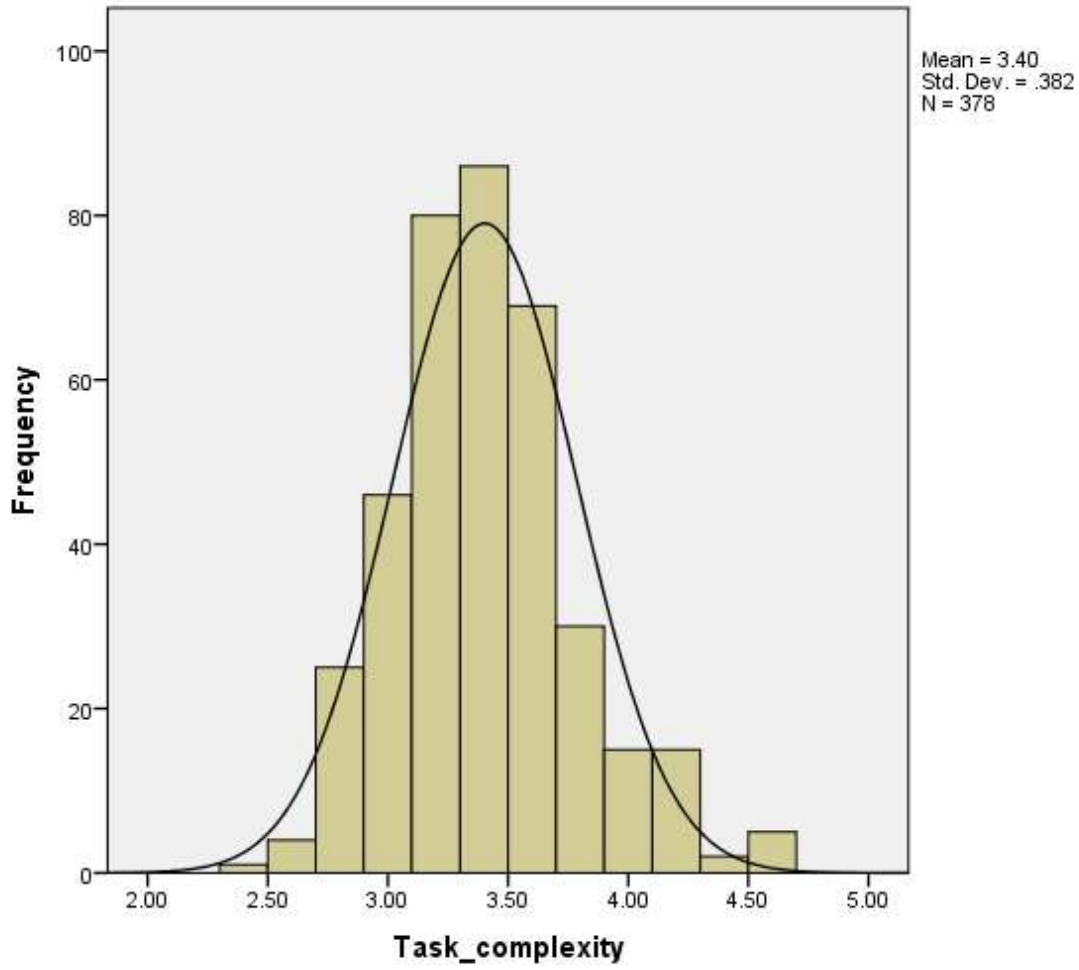
60
40
20
0
2.00
3.00
4.00
5.00
6.00
7.00
8.00
Activity_control


Mean = 3.40
Std. Dev. = .382
N = 378
Frequency
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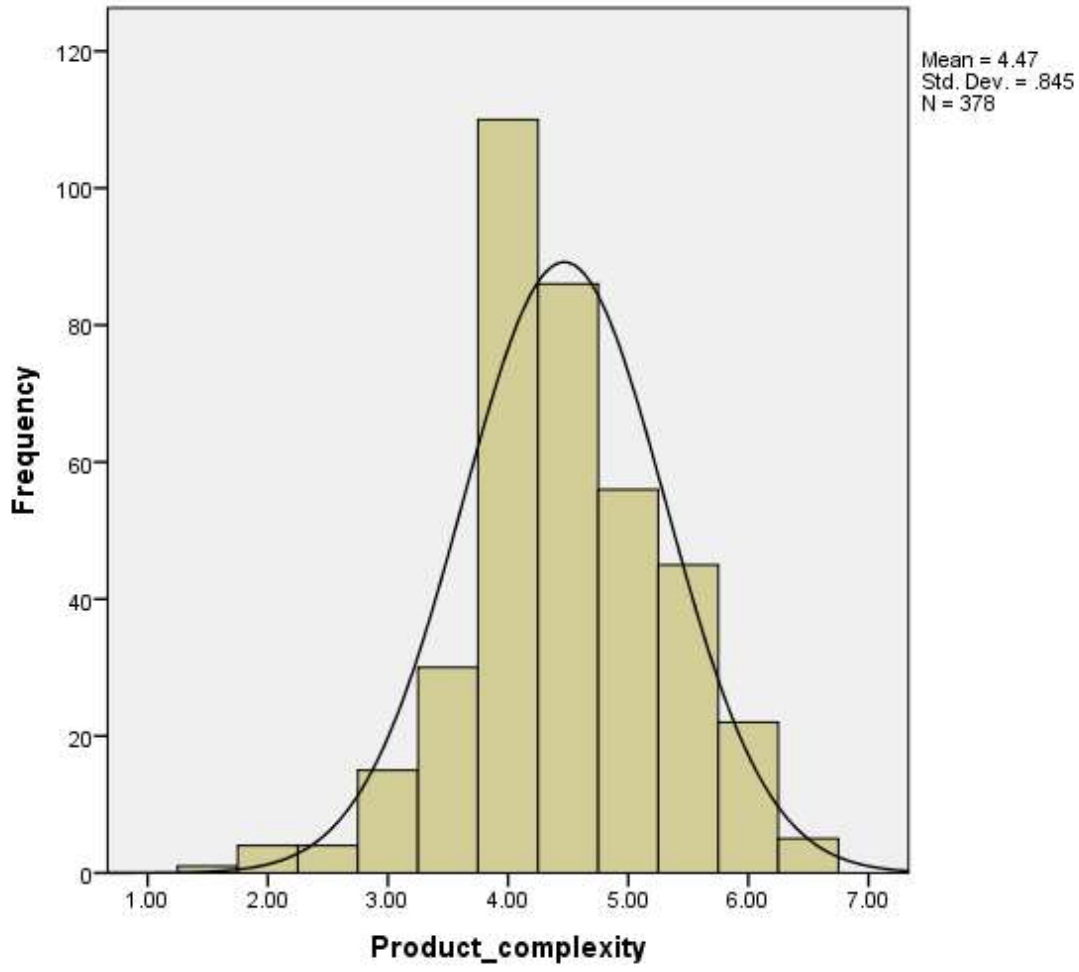
80
60
40
20
0
2.00
2.50
3.00
3.50
4.00
4.50
5.00
Task_complexity


Mean = 4.47
Std. Dev. = .845
N = 378
Frequency
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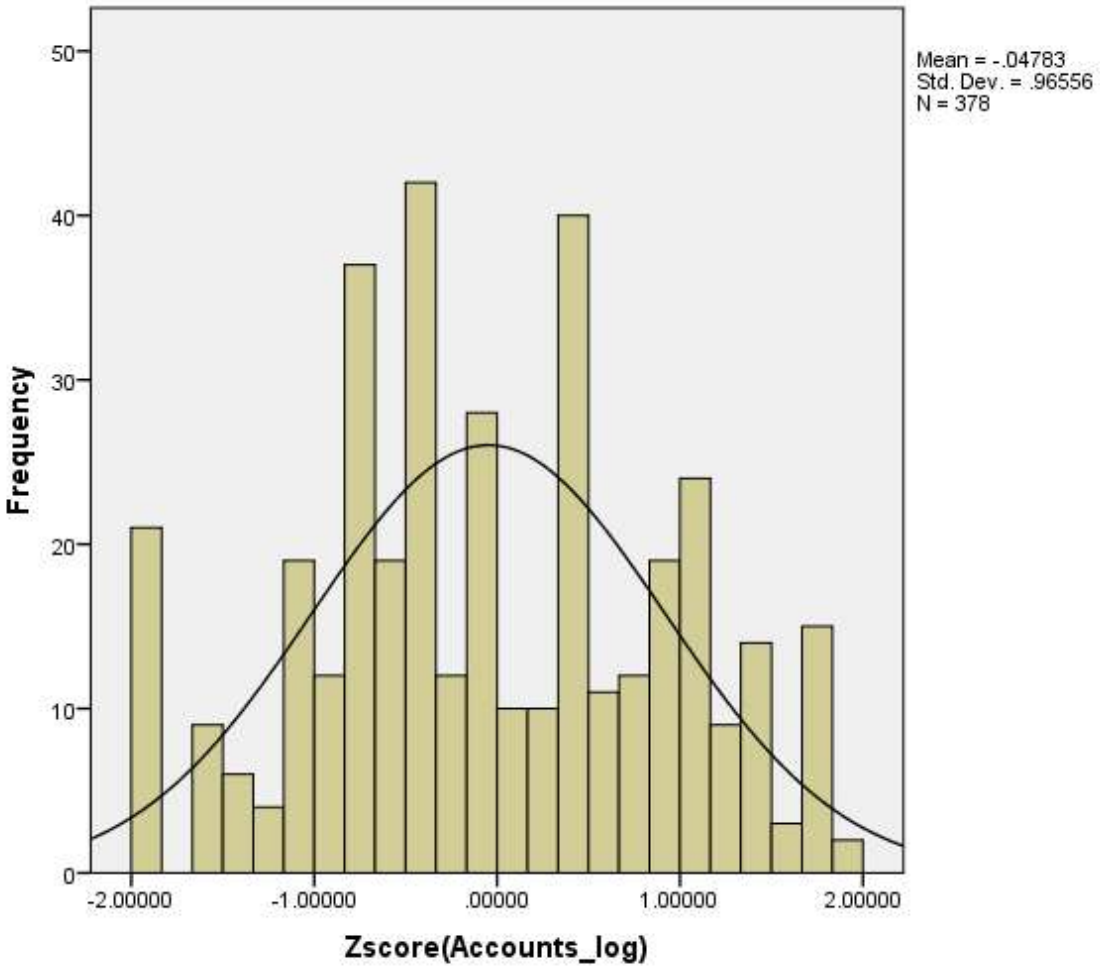
100
80
60
40
20
0
1.00
2.00
3.00
4.00
5.00
6.00
7.00
Product_complexity



Descriptives

			Statistic	Std. Error
Salesperson_performance	Mean		5.5260	.04067
	95% Confidence Interval for Mean	Lower Bound	5.4461	
		Upper Bound	5.6060	
	5% Trimmed Mean		5.5523	
	Median		5.6667	
	Variance		.625	
	Std. Deviation		.79063	
	Minimum		3.00	
	Maximum		7.00	
	Range		4.00	
	Interquartile Range		1.00	

	Skewness		-.515	.125
	Kurtosis		.078	.250
Outcome_control	Mean		5.7651	.04865
	95% Confidence Interval for Mean	Lower Bound	5.6694	
		Upper Bound	5.8607	
	5% Trimmed Mean		5.8333	
	Median		6.0000	
	Variance		.895	
	Std. Deviation		.94588	
	Minimum		2.60	
	Maximum		7.00	
	Range		4.40	
	Interquartile Range		1.00	
	Skewness		-.943	.125
	Kurtosis		.782	.250
Capability_control	Mean		5.0746	.07337
	95% Confidence Interval for Mean	Lower Bound	4.9303	
		Upper Bound	5.2189	
	5% Trimmed Mean		5.1468	
	Median		5.4000	
	Variance		2.035	
	Std. Deviation		1.42641	
	Minimum		1.20	
	Maximum		7.00	
	Range		5.80	
	Interquartile Range		1.80	
	Skewness		-.722	.125
	Kurtosis		-.334	.250
Activity_control	Mean		5.5910	.05025
	95% Confidence Interval for Mean	Lower Bound	5.4922	
		Upper Bound	5.6898	
	5% Trimmed Mean		5.6486	
	Median		5.8000	
	Variance		.954	
	Std. Deviation		.97688	
	Minimum		2.40	

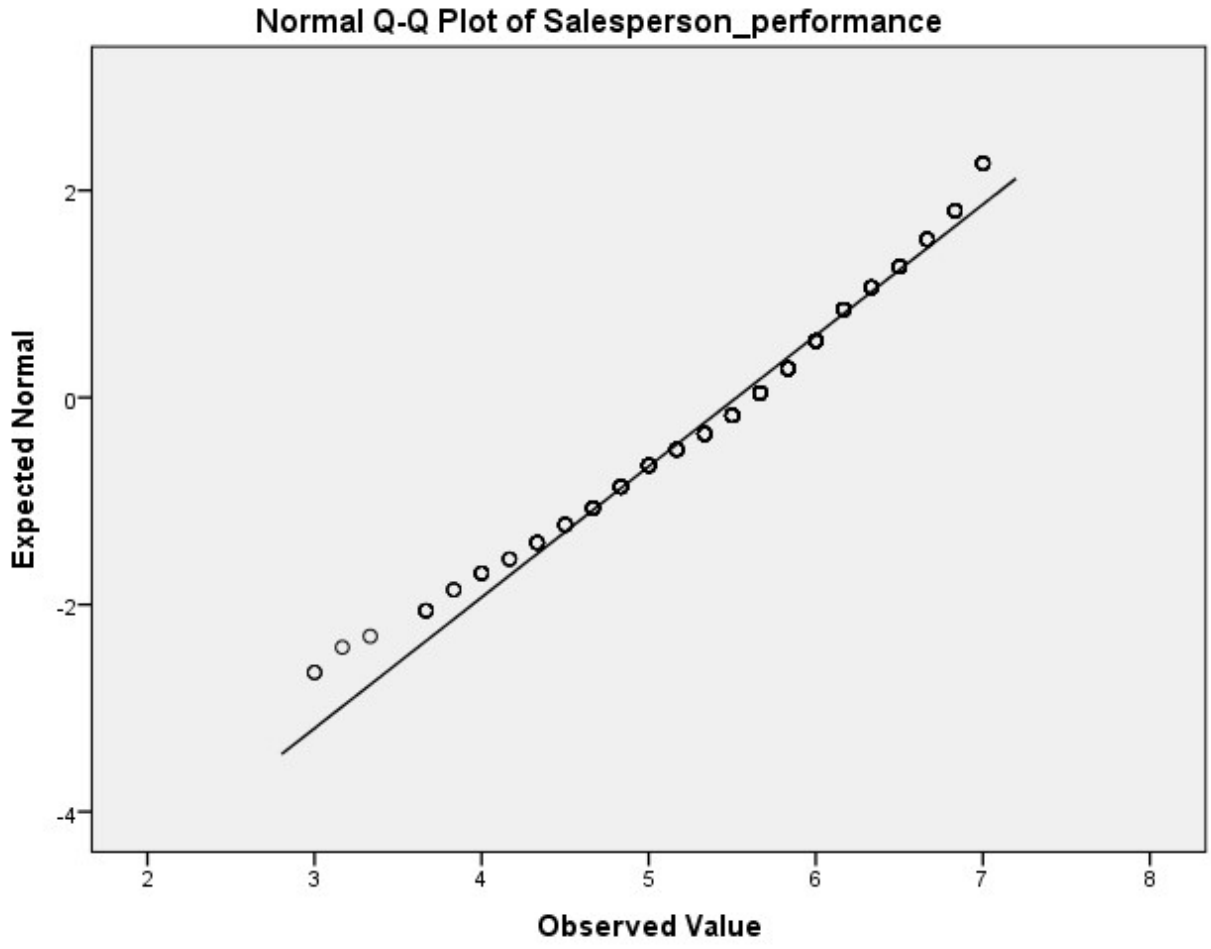
	Maximum		7.00	
	Range		4.60	
	Interquartile Range		1.20	
	Skewness		-.798	.125
	Kurtosis		.454	.250
Task_complexity	Mean		3.4032	.01962
	95% Confidence Interval for Mean	Lower Bound	3.3646	
		Upper Bound	3.4418	
	5% Trimmed Mean		3.3889	
	Median		3.4000	
	Variance		.146	
	Std. Deviation		.38152	
	Minimum		2.40	
	Maximum		4.60	
	Range		2.20	
	Interquartile Range		.40	
	Skewness		.551	.125
	Kurtosis		.585	.250
Product_complexity	Mean		4.4669	.04347
	95% Confidence Interval for Mean	Lower Bound	4.3814	
		Upper Bound	4.5524	
	5% Trimmed Mean		4.4780	
	Median		4.5000	
	Variance		.714	
	Std. Deviation		.84523	
	Minimum		1.50	
	Maximum		6.50	
	Range		5.00	
	Interquartile Range		1.00	
	Skewness		-.101	.125
	Kurtosis		.404	.250
Zscore(Accounts_log)	Mean		-.0478336	.04966282
	95% Confidence Interval for Mean	Lower Bound	-.1454845	
		Upper Bound	.0498172	
	5% Trimmed Mean		-.0415177	
	Median		-.0005601	

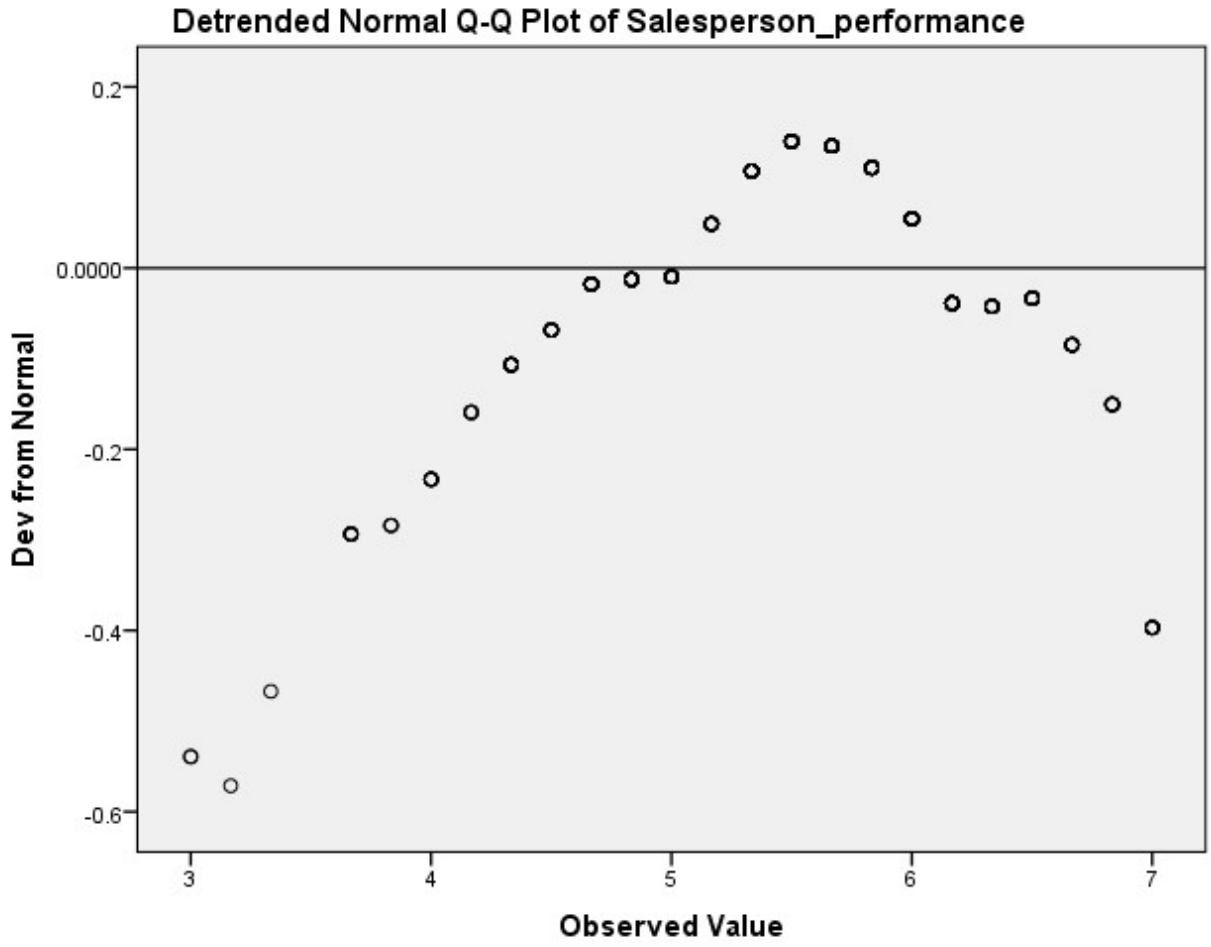
	Variance	.932	
	Std. Deviation	.96555554	
	Minimum	-1.95587	
	Maximum	1.93525	
	Range	3.89112	
	Interquartile Range	1.44487	
	Skewness	-.018	.125
	Kurtosis	-.647	.250

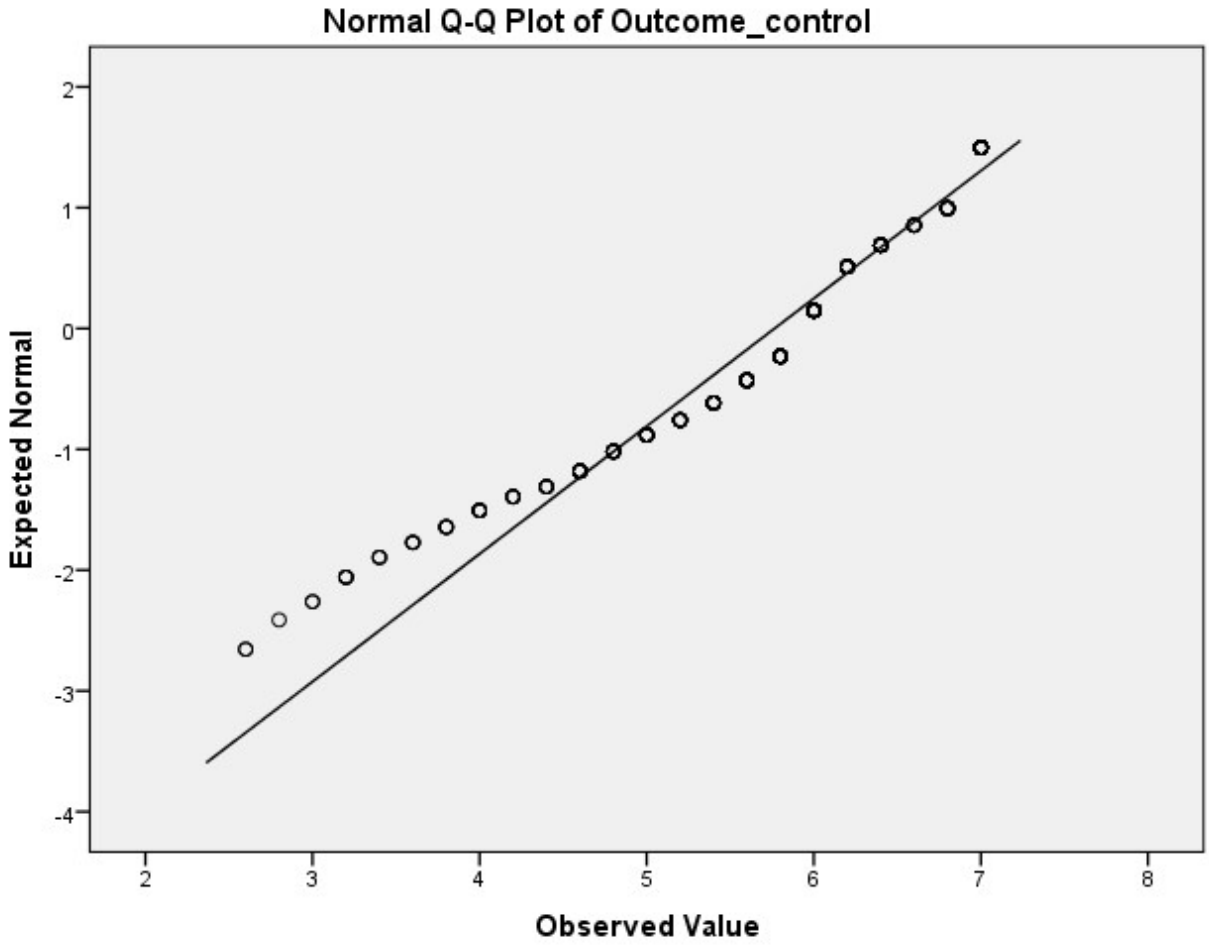
Tests of Normality

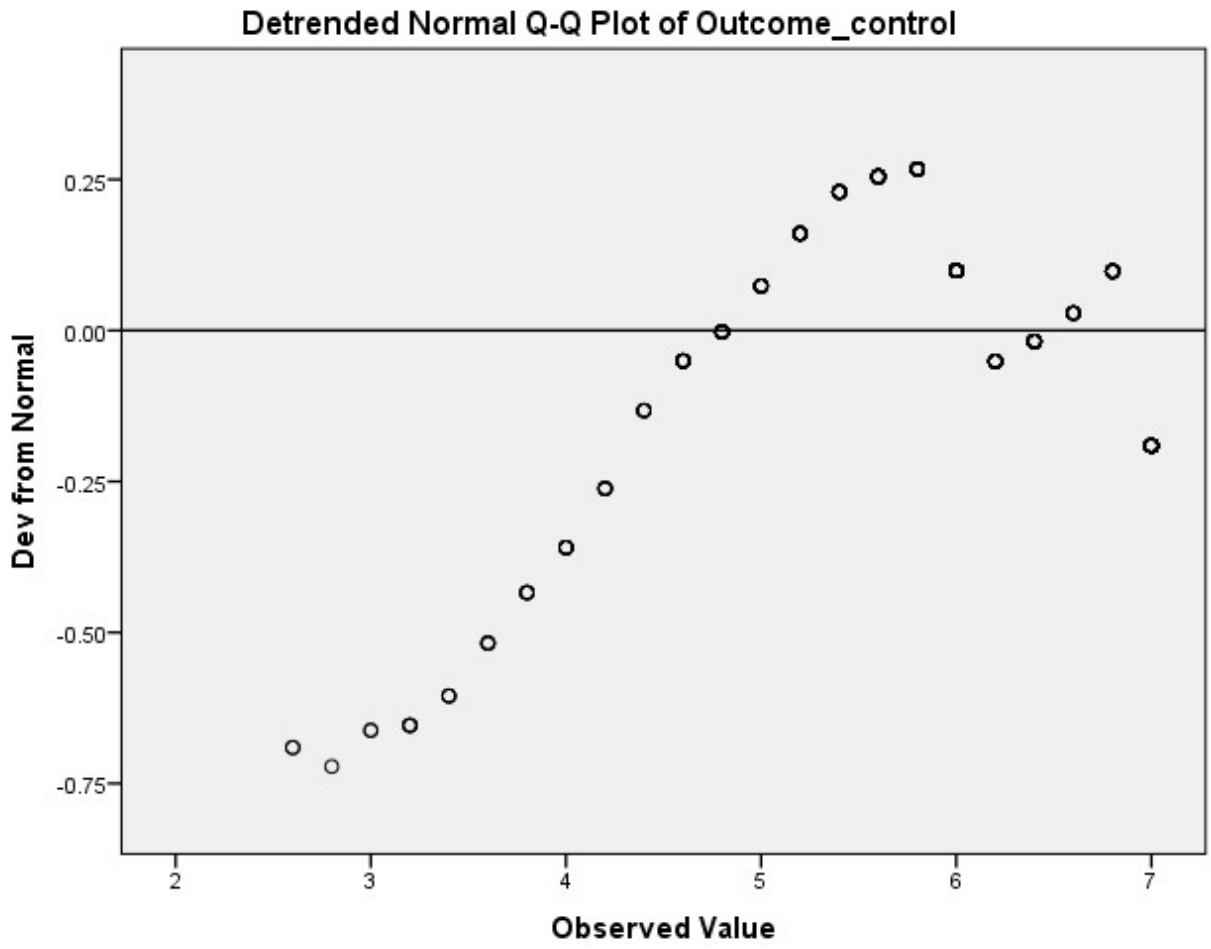
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Salesperson_performance	.105	378	.000	.975	378	.000
Outcome_control	.154	378	.000	.919	378	.000
Capability_control	.142	378	.000	.928	378	.000
Activity_control	.141	378	.000	.941	378	.000
Task_complexity	.144	378	.000	.956	378	.000
Product_complexity	.147	378	.000	.955	378	.000
Zscore(Accounts_log)	.064	378	.001	.979	378	.000

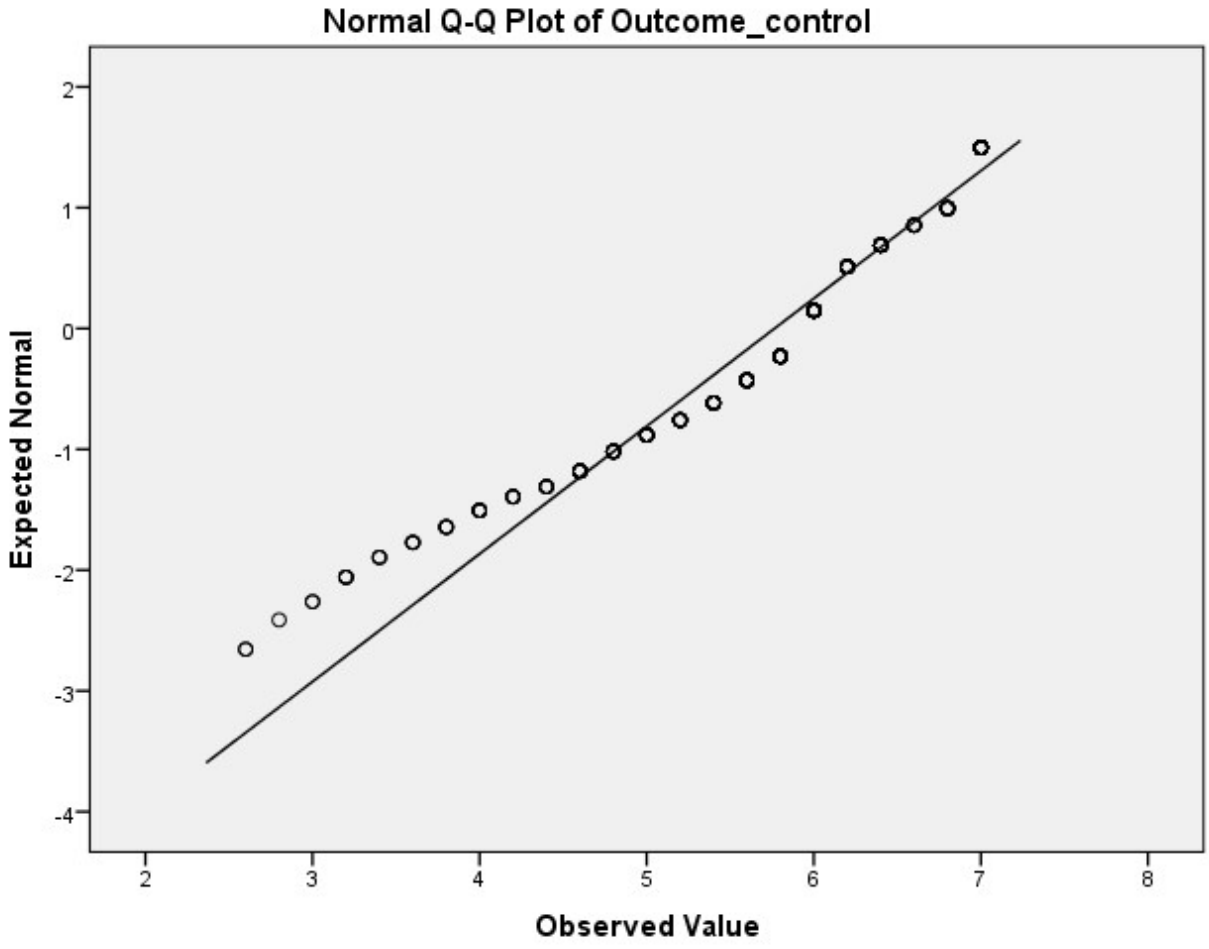
a. Lilliefors Significance Correction

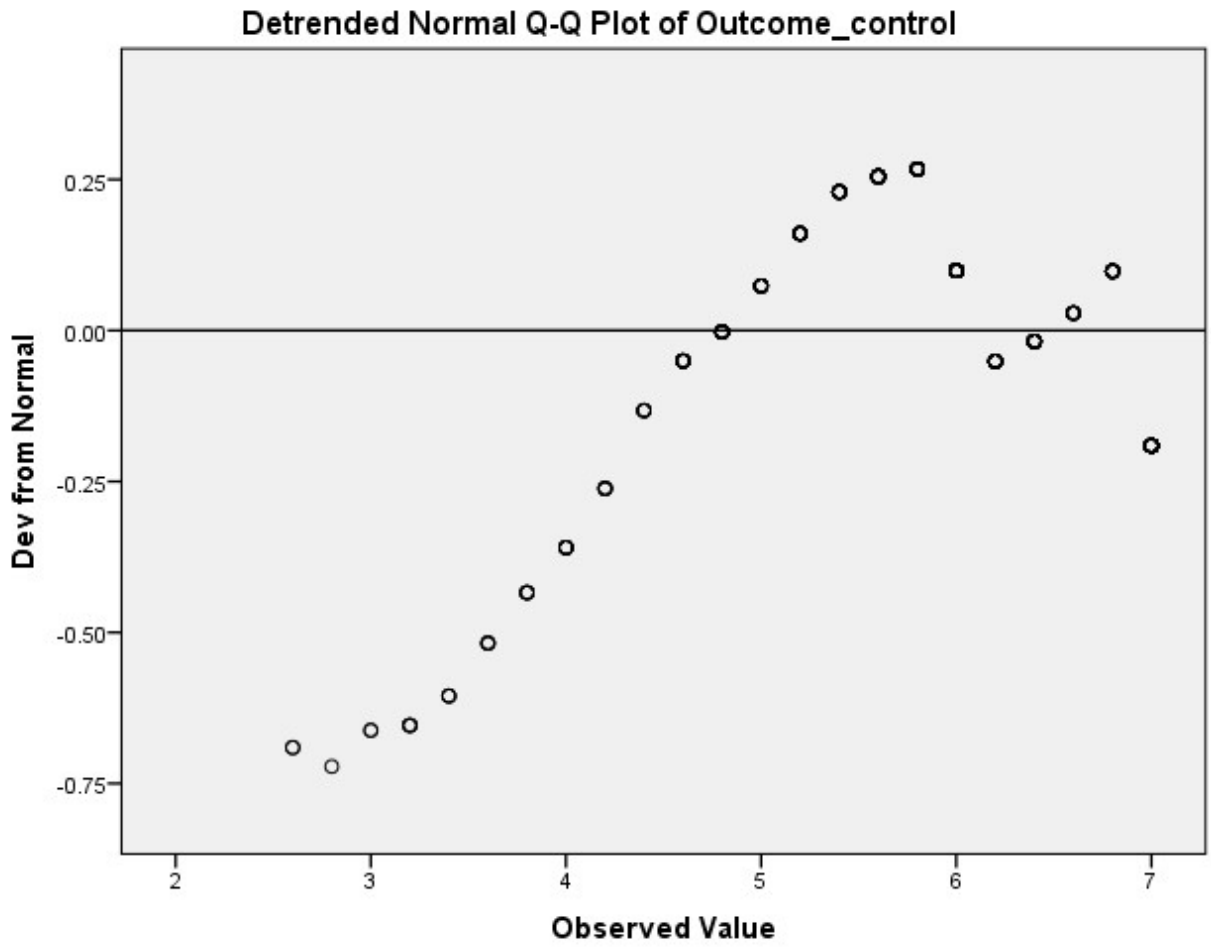

Normal Q-Q Plot of Salesperson_performance
Expected Normal
2
0
-2
-4
2
3
4
5
6
7
8
Observed Value

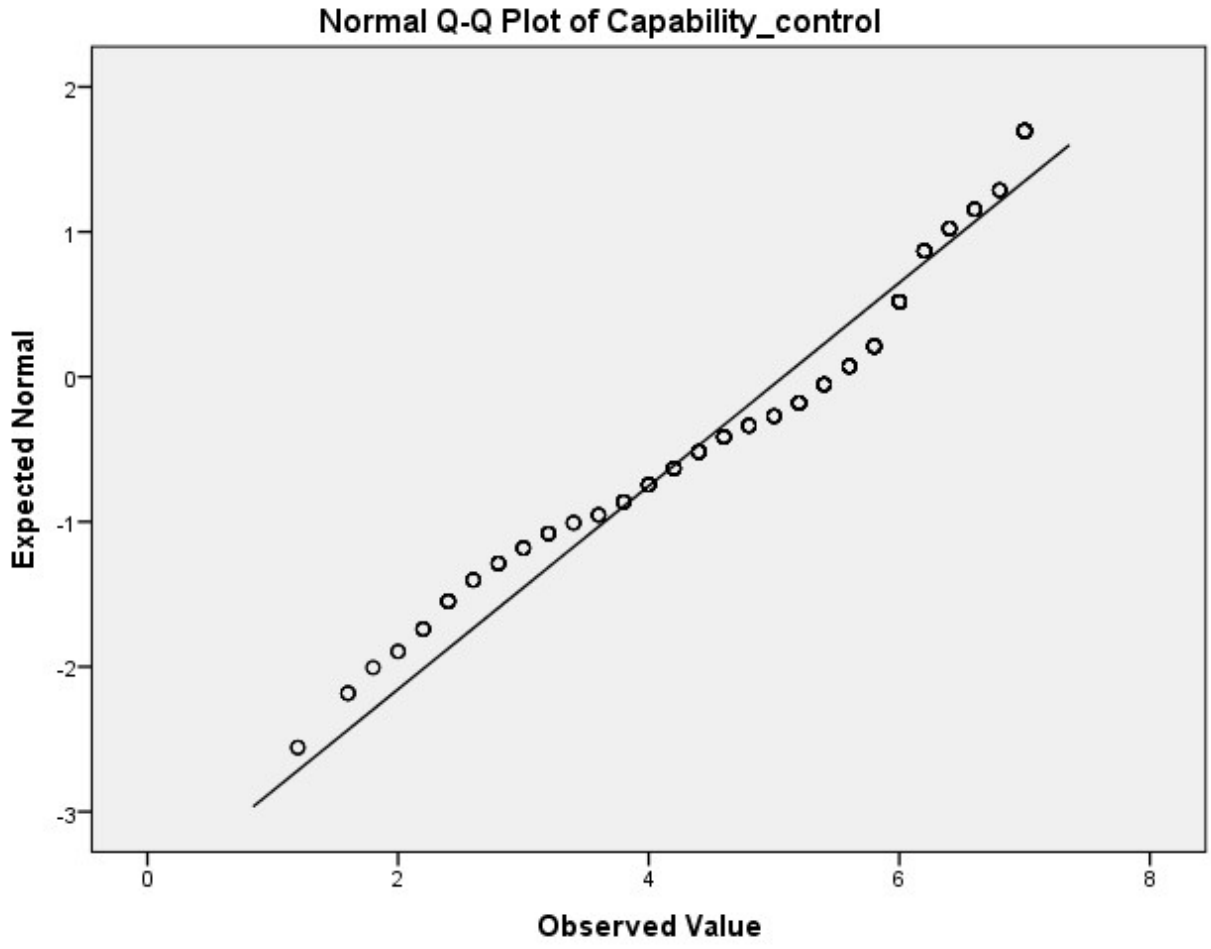

Detrended Normal Q-Q Plot of Salesperson_performance
Dev from Normal
0.2
0.0000
-0.2
-0.4
-0.6
3
4
5
6
7
Observed Value

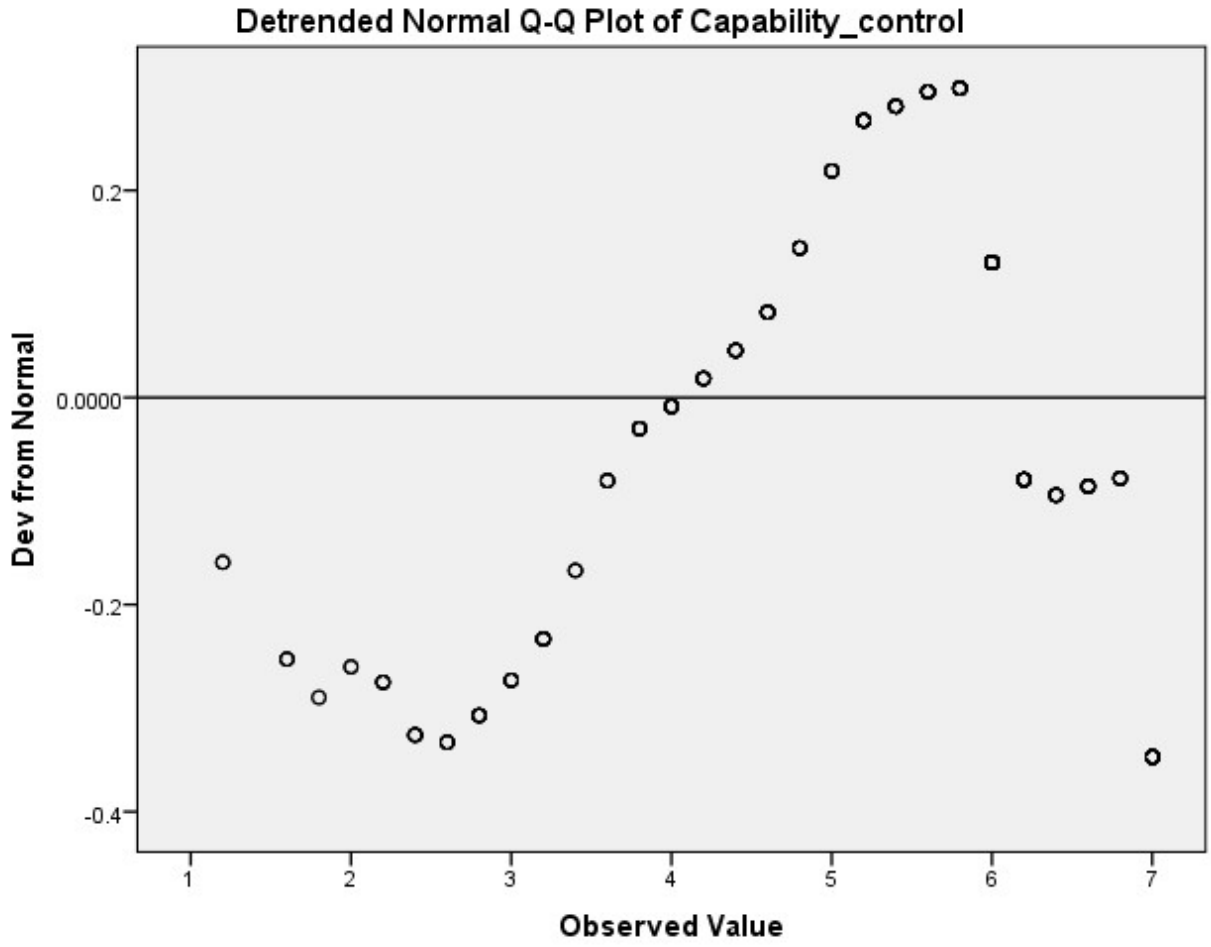

Normal Q-Q Plot of Outcome_control
Expected Normal
Observed Value
2
1
0
-1
-2
-3
-4
2
3
4
5
6
7
8

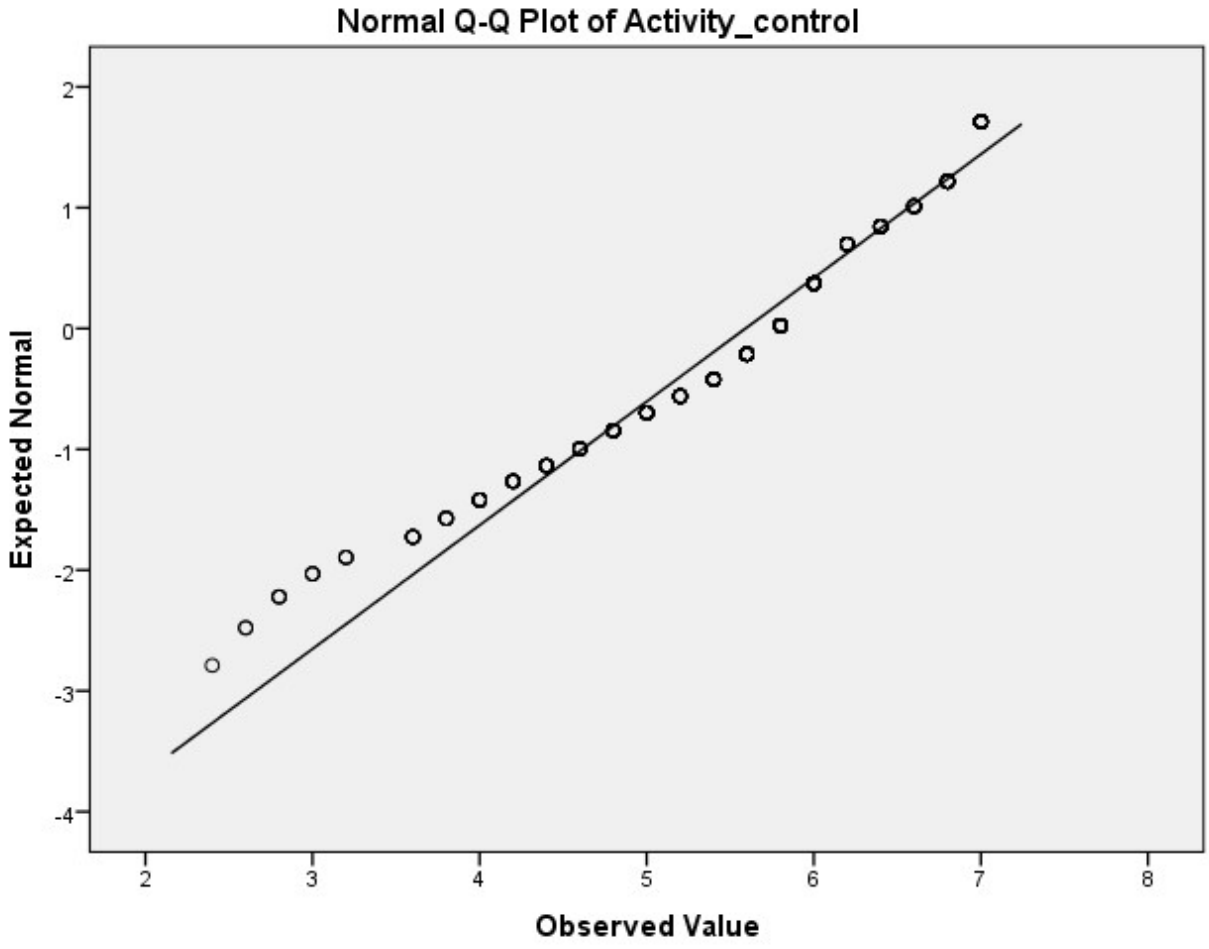

Detrended Normal Q-Q Plot of Outcome_control
Dev from Normal
0.25
0.00
-0.25
-0.50
-0.75
2
3
4
5
6
7
Observed Value

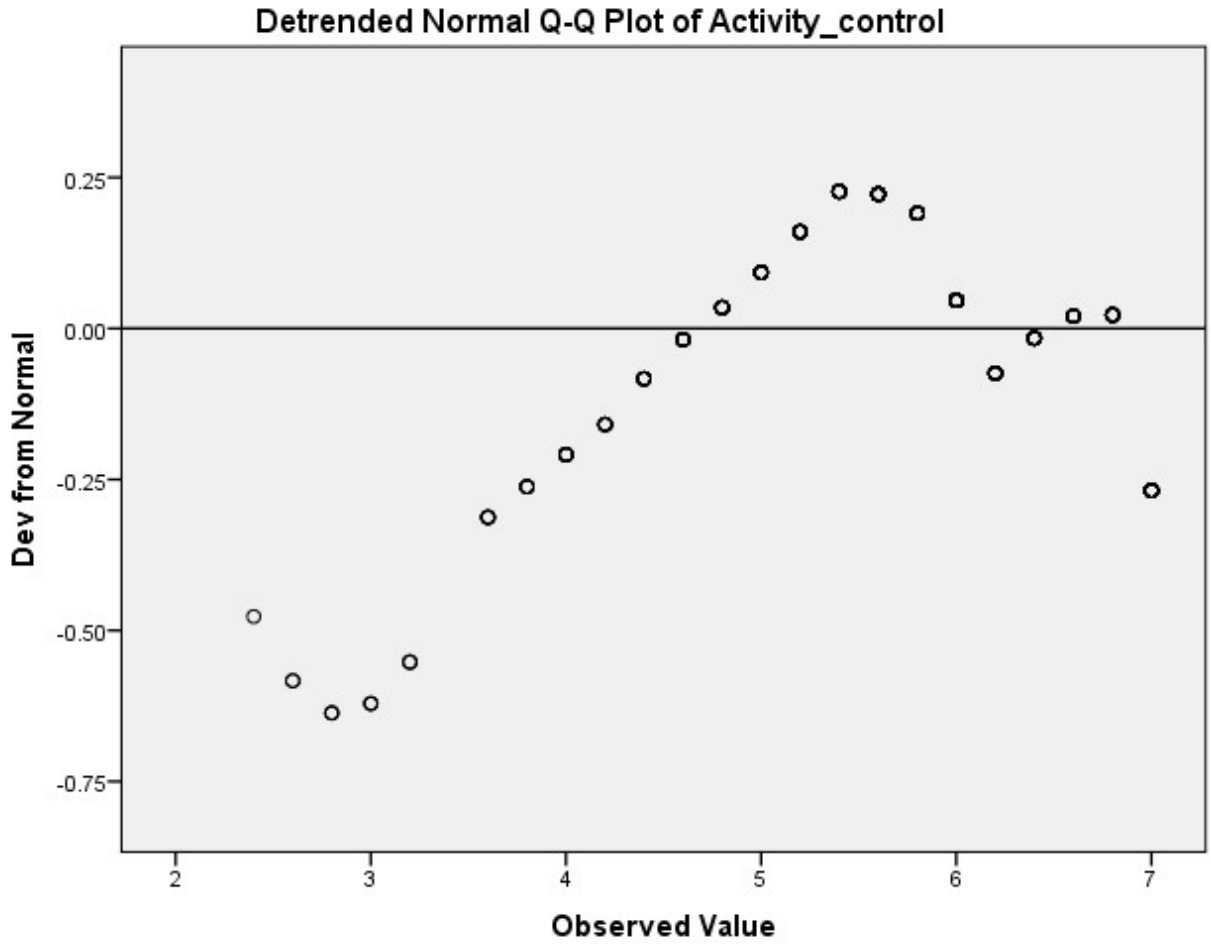

Normal Q-Q Plot of Outcome_control
Expected Normal
Observed Value
2
1
0
-1
-2
-3
-4
2
3
4
5
6
7
8

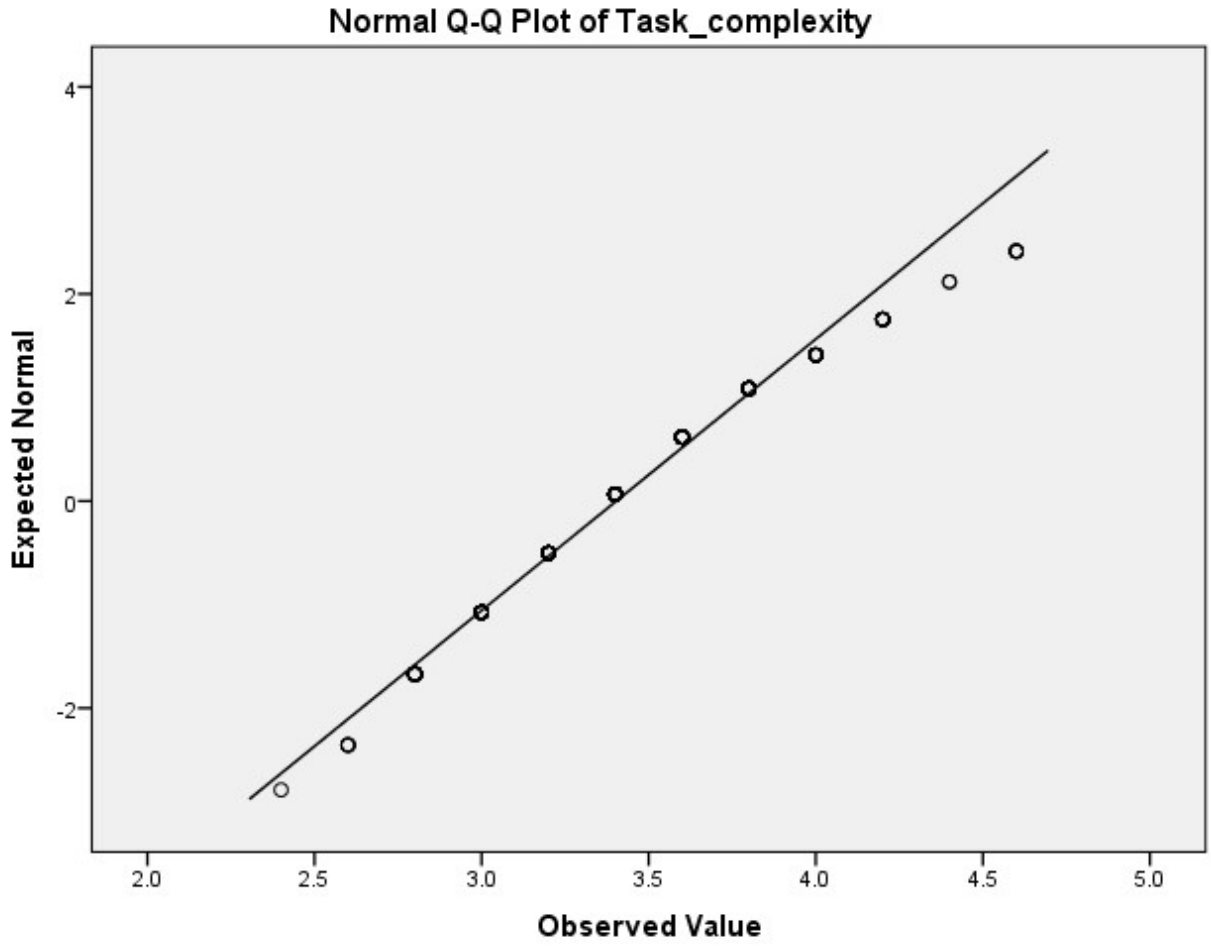

Detrended Normal Q-Q Plot of Outcome_control
Dev from Normal
0.25
0.00
-0.25
-0.50
-0.75
2
3
4
5
6
7
Observed Value

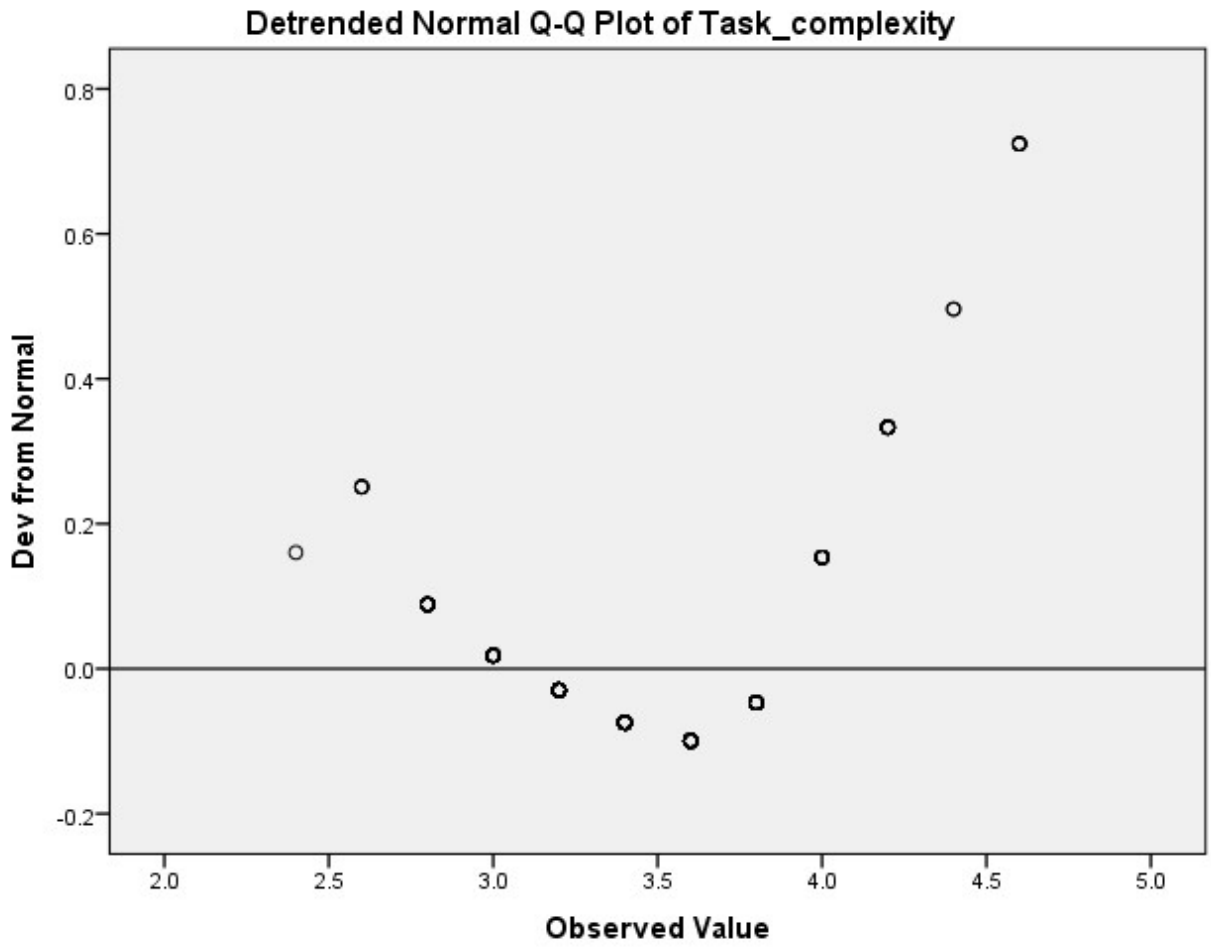

Normal Q-Q Plot of Capability_control
Expected Normal
Observed Value
2
1
0
-1
-2
-3
0
2
4
6
8

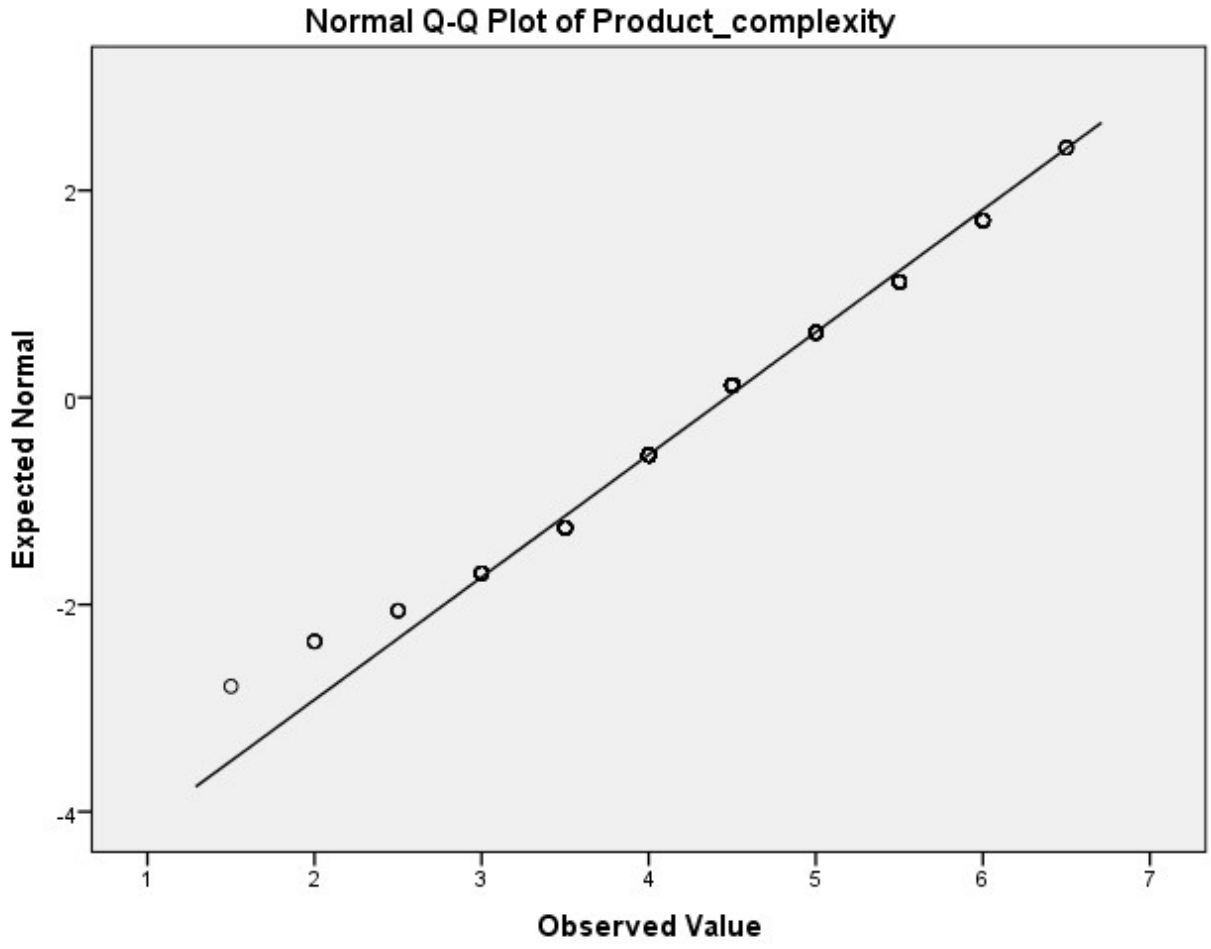

Detrended Normal Q-Q Plot of Capability_control
Dev from Normal
0.2
0.0000
-0.2
-0.4
1
2
3
4
5
6
7
Observed Value

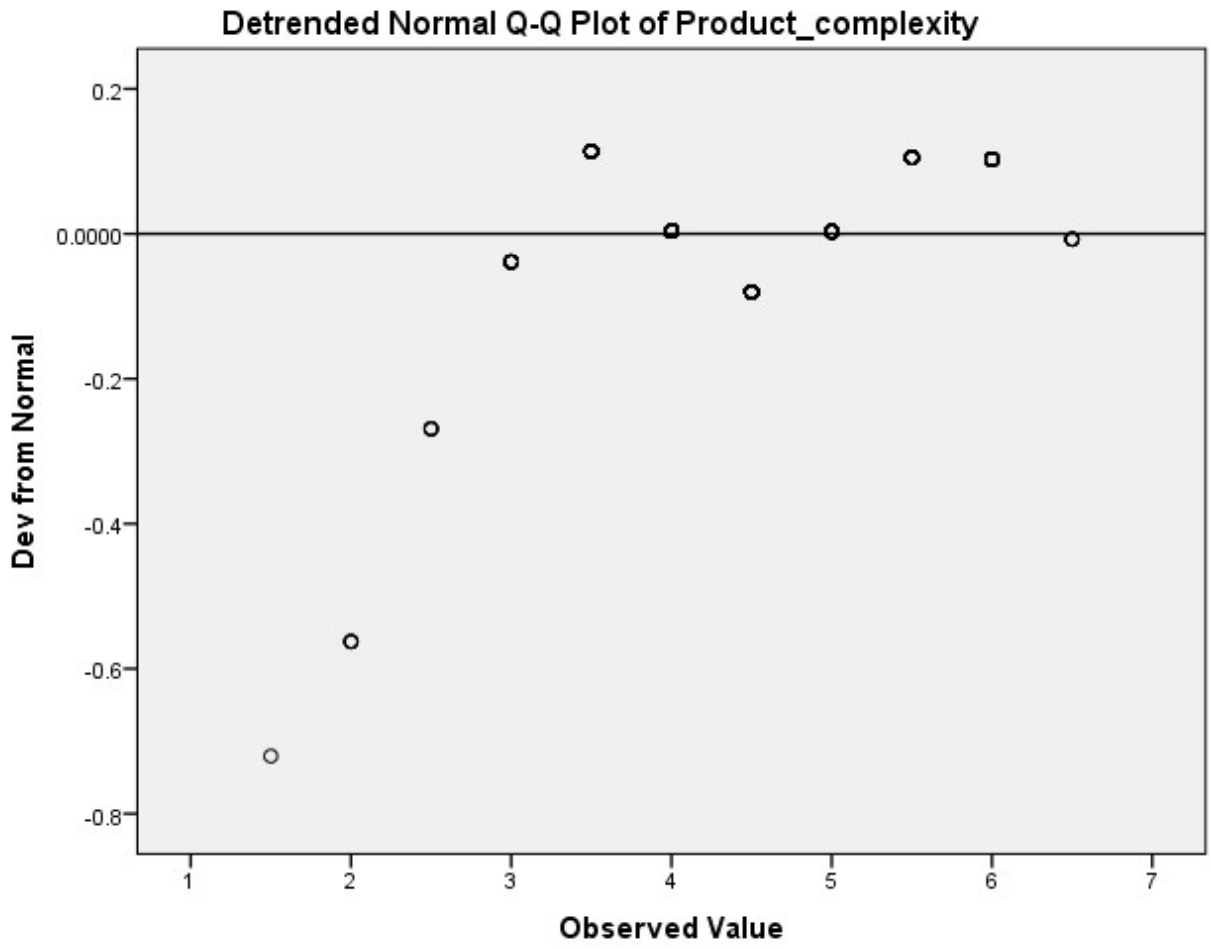

Normal Q-Q Plot of Activity_control
Expected Normal
Observed Value
2
1
0
-1
-2
-3
-4
2
3
4
5
6
7
8

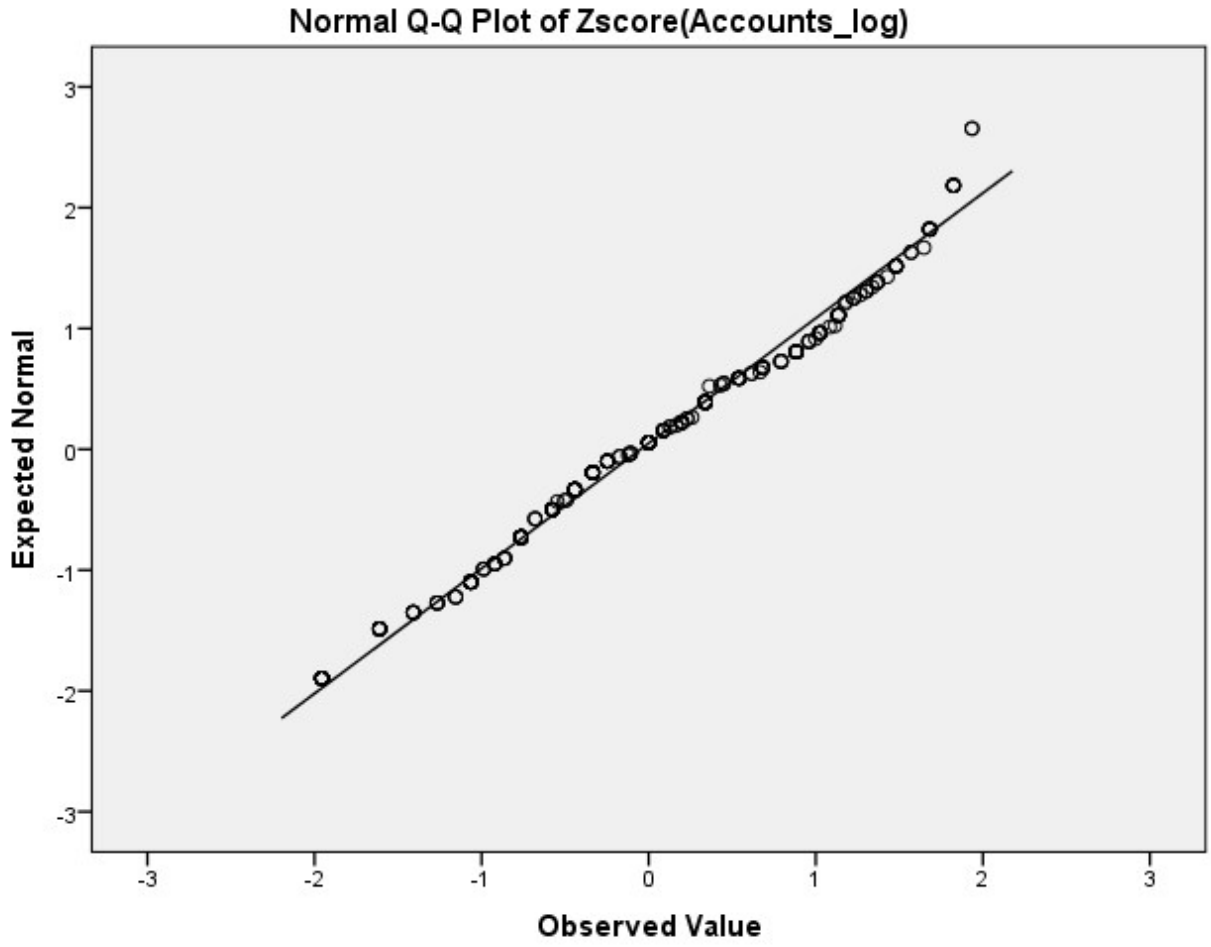

Detrended Normal Q-Q Plot of Activity_control
Dev from Normal
0.25
0.00
-0.25
-0.50
-0.75
2
3
4
5
6
7
Observed Value

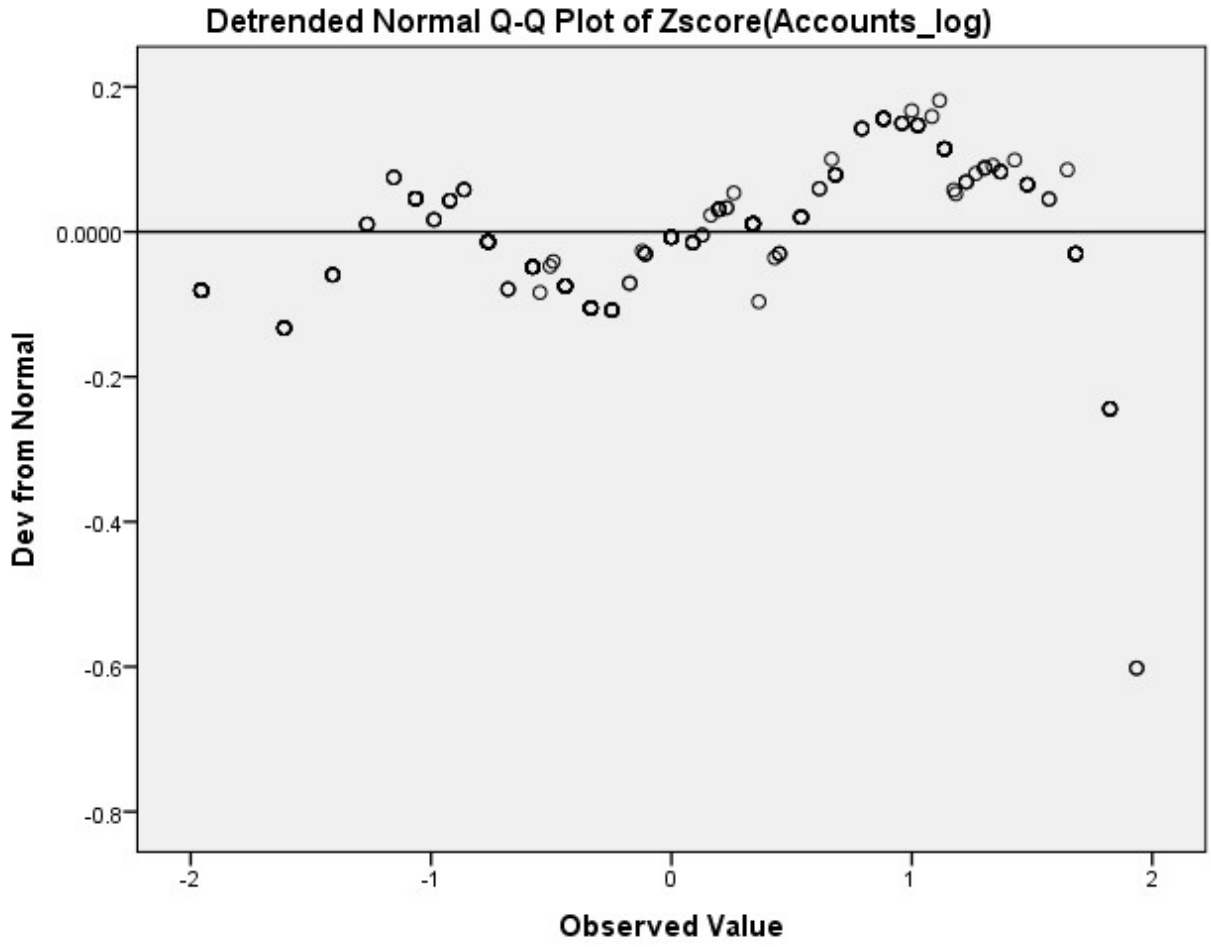

Normal Q-Q Plot of Task_complexity
Expected Normal
Observed Value
4
2
0
-2
2.0
2.5
3.0
3.5
4.0
4.5
5.0

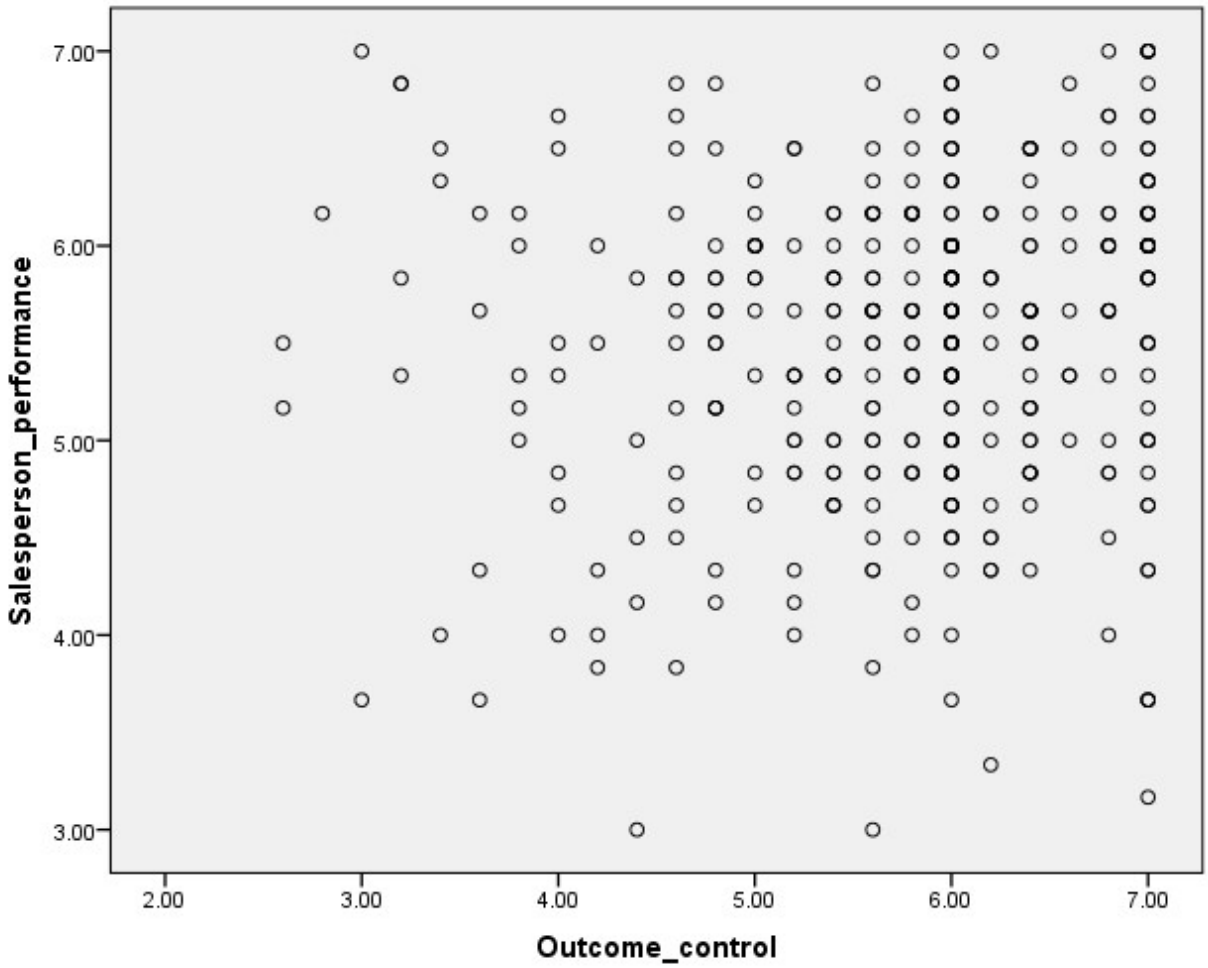

Detrended Normal Q-Q Plot of Task_complexity
Dev from Normal
0.8
0.6
0.4
0.2
0.0
-0.2
2.0
2.5
3.0
3.5
4.0
4.5
5.0
Observed Value

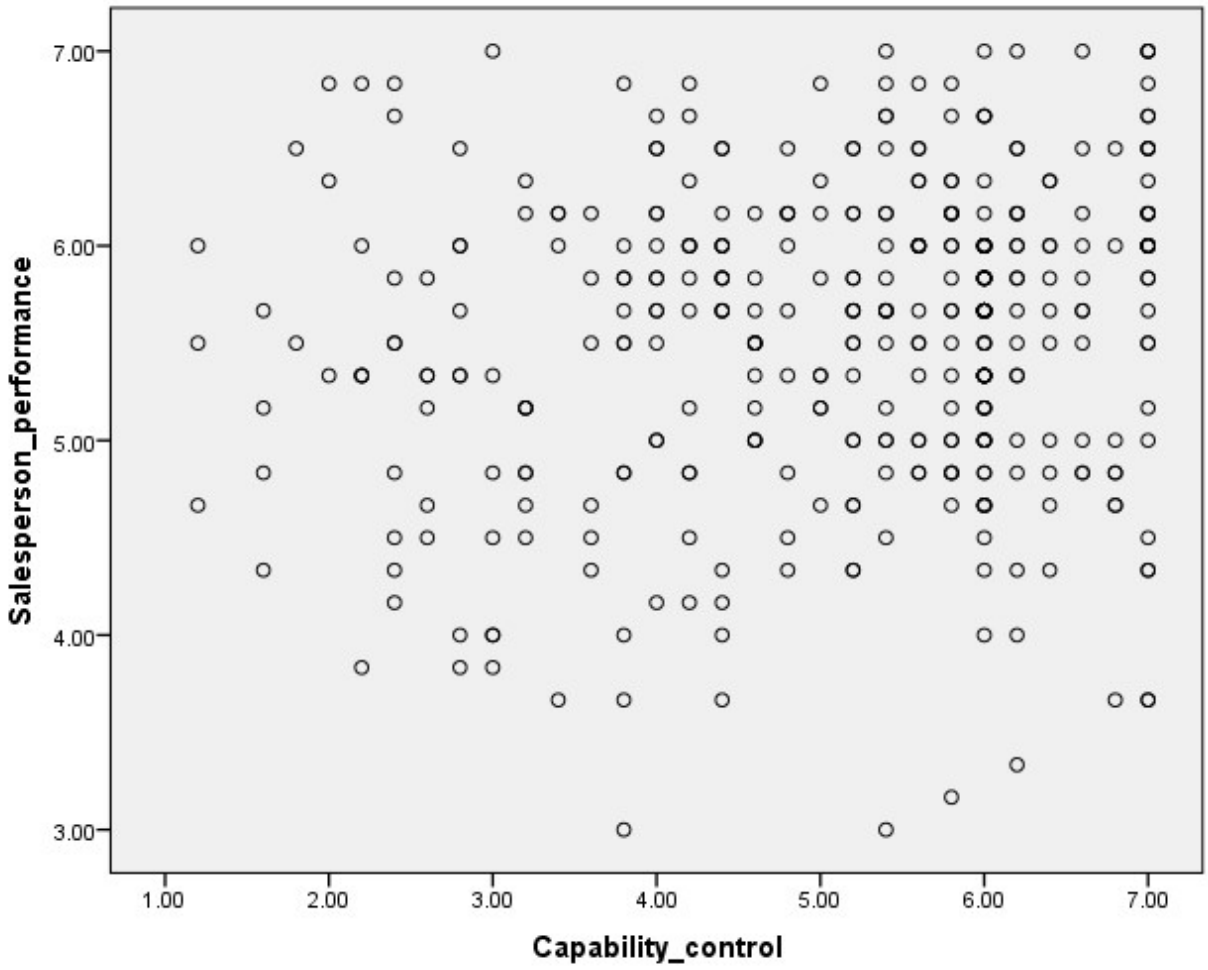

Normal Q-Q Plot of Product_complexity
Expected Normal
2
0
-2
-4
1
2
3
4
5
6
7
Observed Value

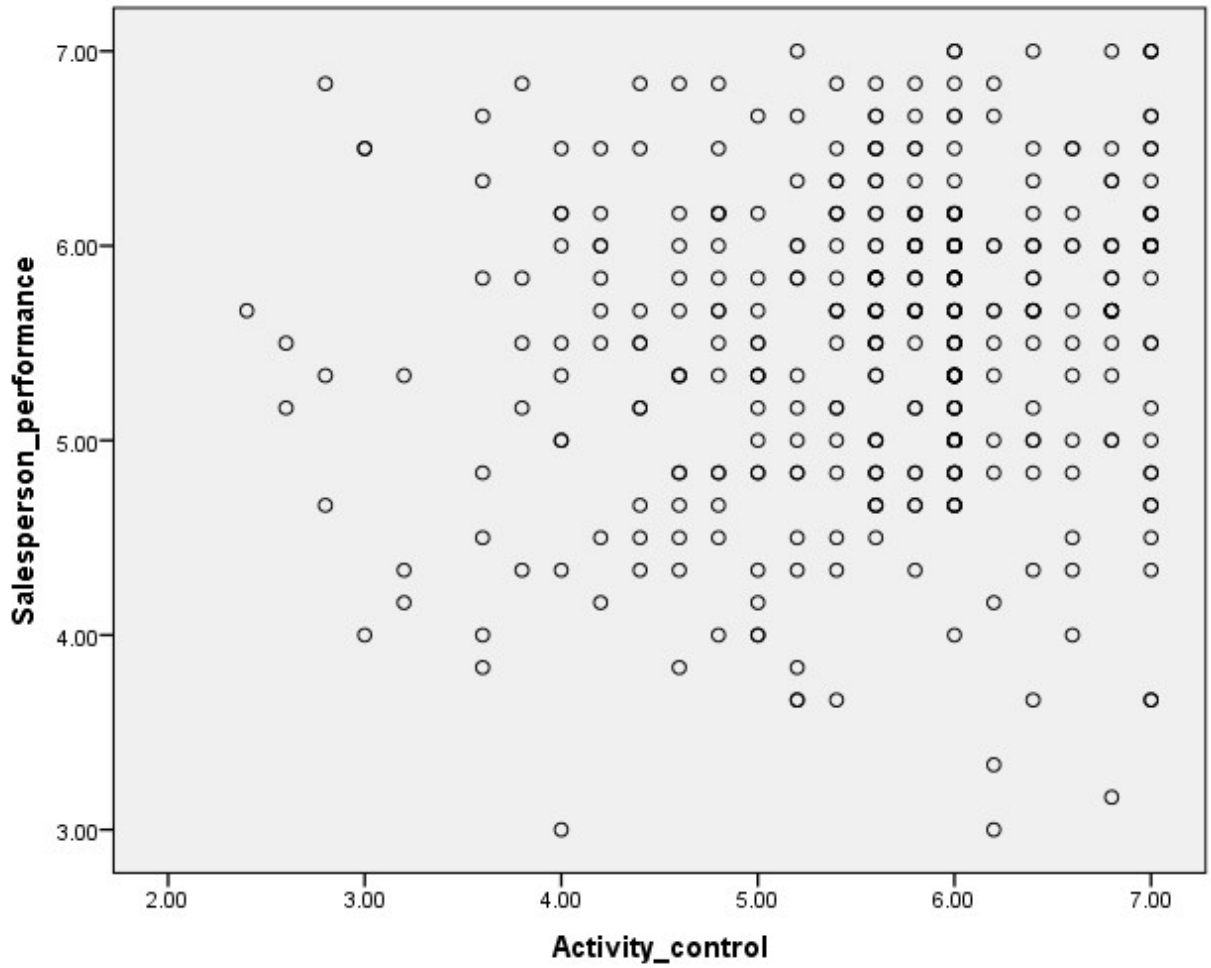

Detrended Normal Q-Q Plot of Product_complexity
Dev from Normal
0.2
0.0000
-0.2
-0.4
-0.6
-0.8
1
2
3
4
5
6
7
Observed Value

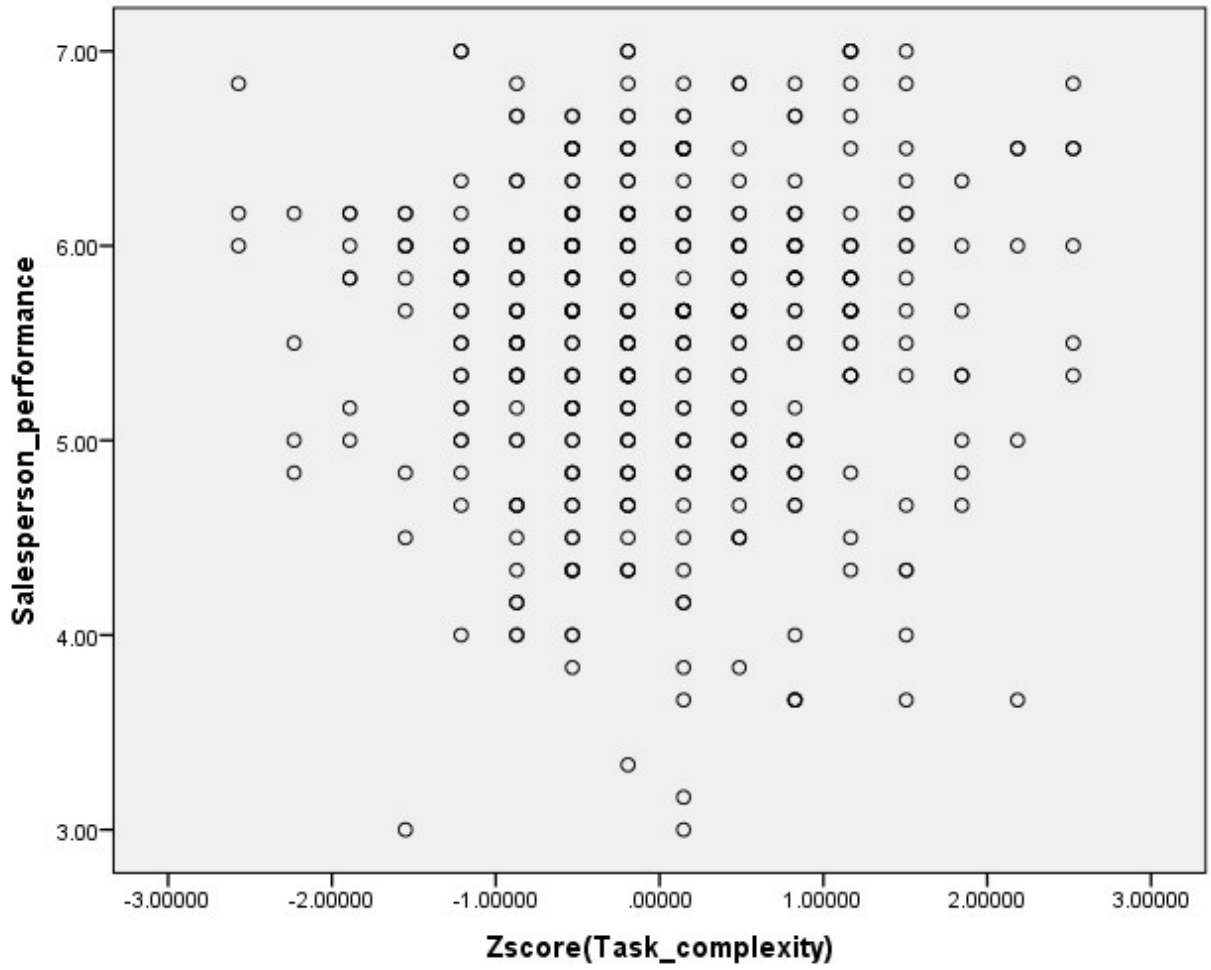

Normal Q-Q Plot of Zscore(Accounts_log)
Expected Normal
Observed Value
3
2
1
0
-1
-2
-3
-3
-2
-1
0
1
2
3

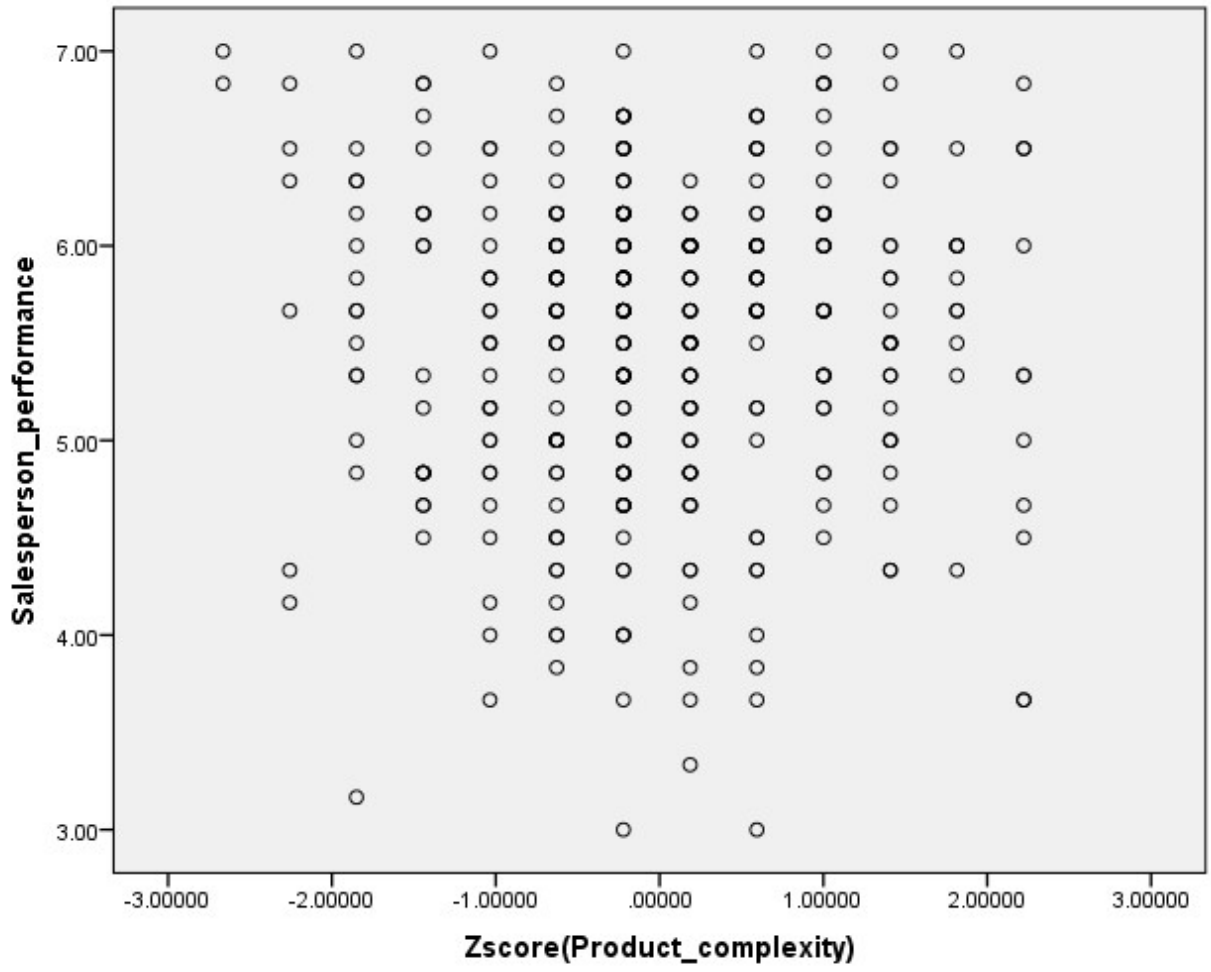

Detrended Normal Q-Q Plot of Zscore(Accounts_log)
Dev from Normal
0.2
0.0000
-0.2
-0.4
-0.6
-0.8
-2
-1
0
1
2
Observed Value

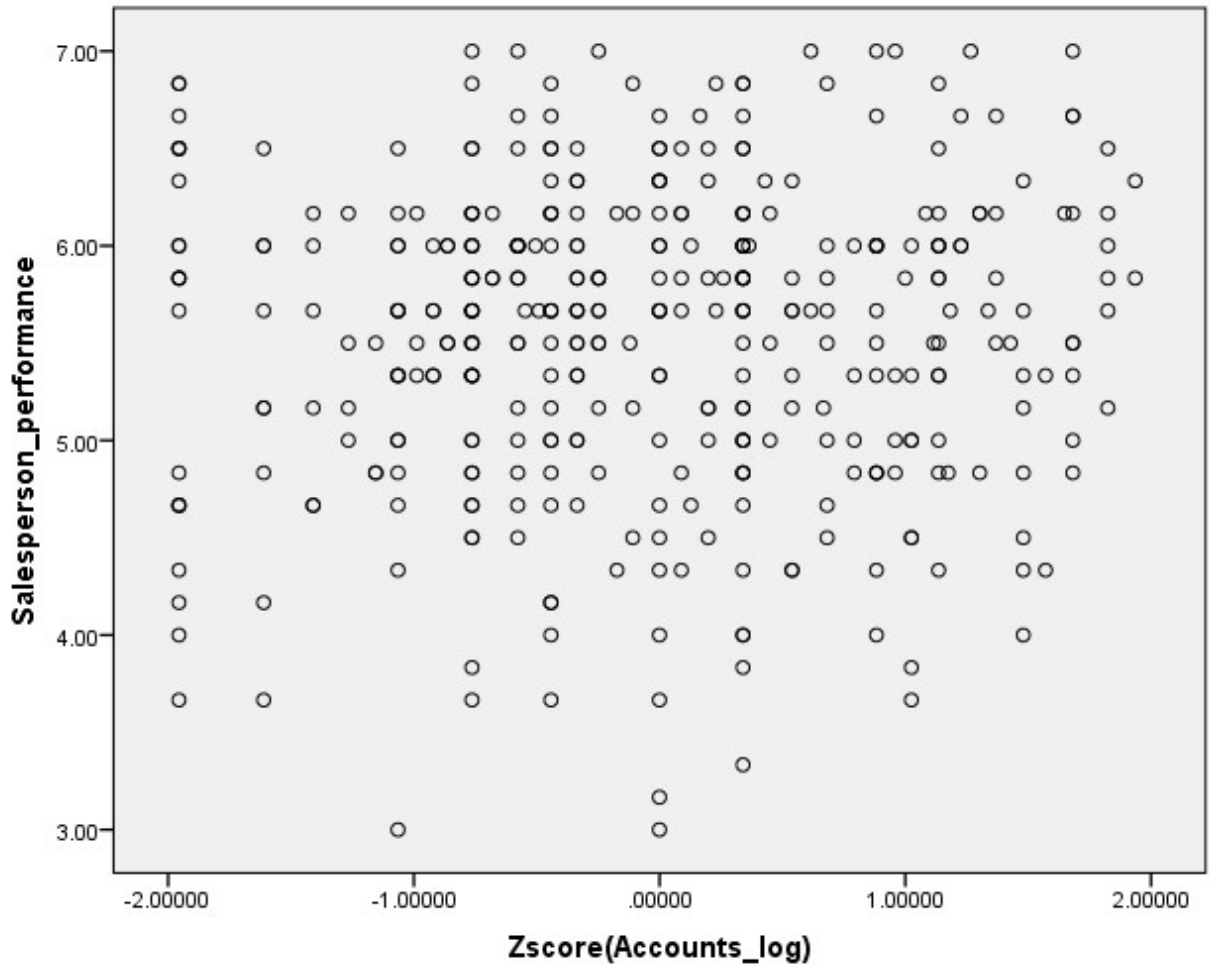

Salesperson_performance
7.00
6.00
5.00
4.00
3.00
2.00
3.00
4.00
5.00
6.00
7.00
Outcome_control


Salesperson_performance
7.00
6.00
5.00
4.00
3.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
Capability_control


Salesperson_performance
7.00
6.00
5.00
4.00
3.00
2.00
3.00
4.00
5.00
6.00
7.00
Activity_control


Salesperson_performance
7.00
6.00
5.00
4.00
3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
3.00000
Zscore(Task_complexity)


Salesperson_performance
7.00
6.00
5.00
4.00
3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
3.00000
Zscore(Product_complexity)



New Regression 1

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.517	.041		135.758	.000		
	Zscore(Outcome_control)	.109	.048	.117	2.286	.023	1.000	1.000
2	(Constant)	5.430	.055		99.088	.000		
	Zscore(Outcome_control)	.112	.048	.120	2.322	.021	.972	1.029
	Zscore(Task_complexity)	.012	.045	.015	.268	.789	.834	1.199
	Zscore (Product_complexity)	-.001	.044	-.001	-.025	.980	.848	1.180
	Zscore(Accounts_log)	.046	.043	.056	1.066	.287	.950	1.053
	TC_New	.063	.032	.109	1.965	.050	.843	1.187
	PC_New	.027	.032	.047	.851	.395	.853	1.173

a. Dependent Variable: Salesperson_performance

Collinearity Diagnostics [a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions						
				(Constant)	Zscore (Outcome_control)	Zscore (Task_complexity)	Zscore (Product_complexity)	Zscore (Accounts_log)	TC_New	PC_New
1	1	1.099	1.000	.45	.45					
	2	.901	1.104	.55	.55					
2	1	2.218	1.000	.07	.00	.01	.00	.01	.08	.08
	2	1.383	1.266	.02	.09	.21	.25	.03	.00	.00
	3	1.073	1.438	.00	.32	.07	.07	.39	.00	.00
	4	.873	1.594	.01	.50	.07	.02	.47	.00	.00
	5	.682	1.803	.00	.07	.45	.49	.04	.05	.07
	6	.394	2.372	.02	.00	.12	.16	.05	.71	.46
	7	.377	2.425	.87	.02	.07	.00	.00	.15	.38

a. Dependent Variable: Salesperson_performance

Casewise Diagnostics[a]

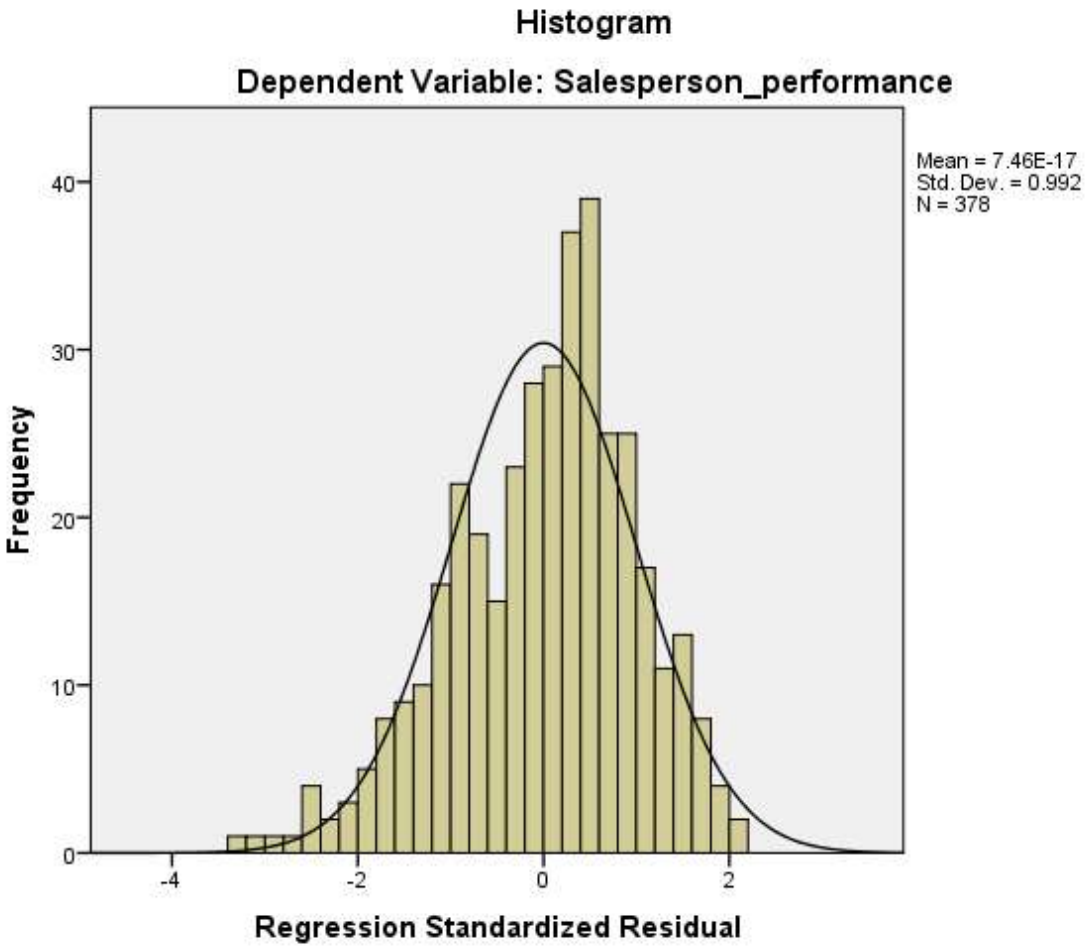
Case Number	Std. Residual	Salesperson_performance	Predicted Value	Residual
194	-3.180	3.17	5.6595	-2.49284
320	-3.203	3.00	5.5107	-2.51069

a. Dependent Variable: Salesperson_performance

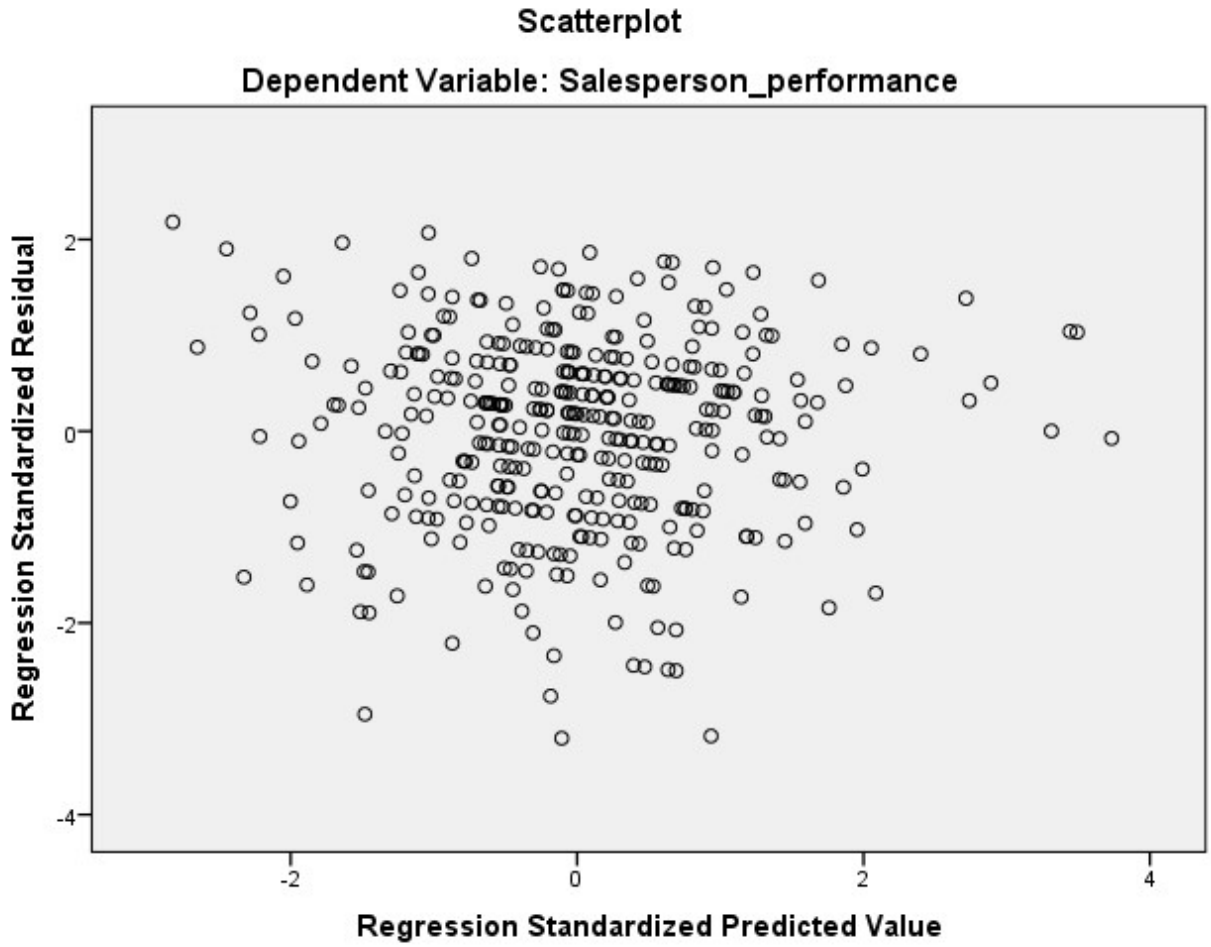
Residuals Statistics[a]

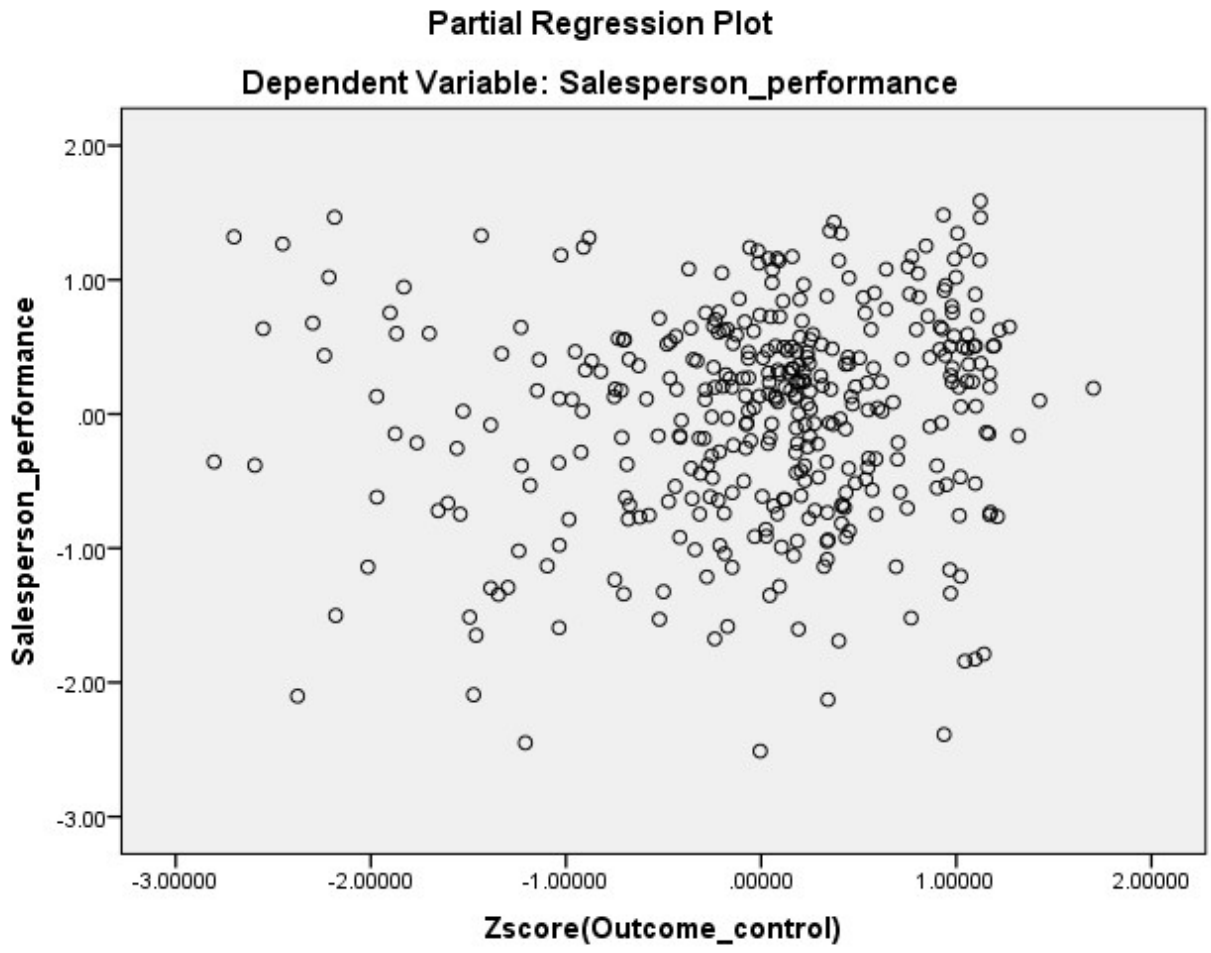
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5.1230	6.0588	5.5260	.14274	378
Residual	-2.51069	1.71030	.00000	.77764	378
Std. Predicted Value	-2.823	3.733	.000	1.000	378
Std. Residual	-3.203	2.182	.000	.992	378

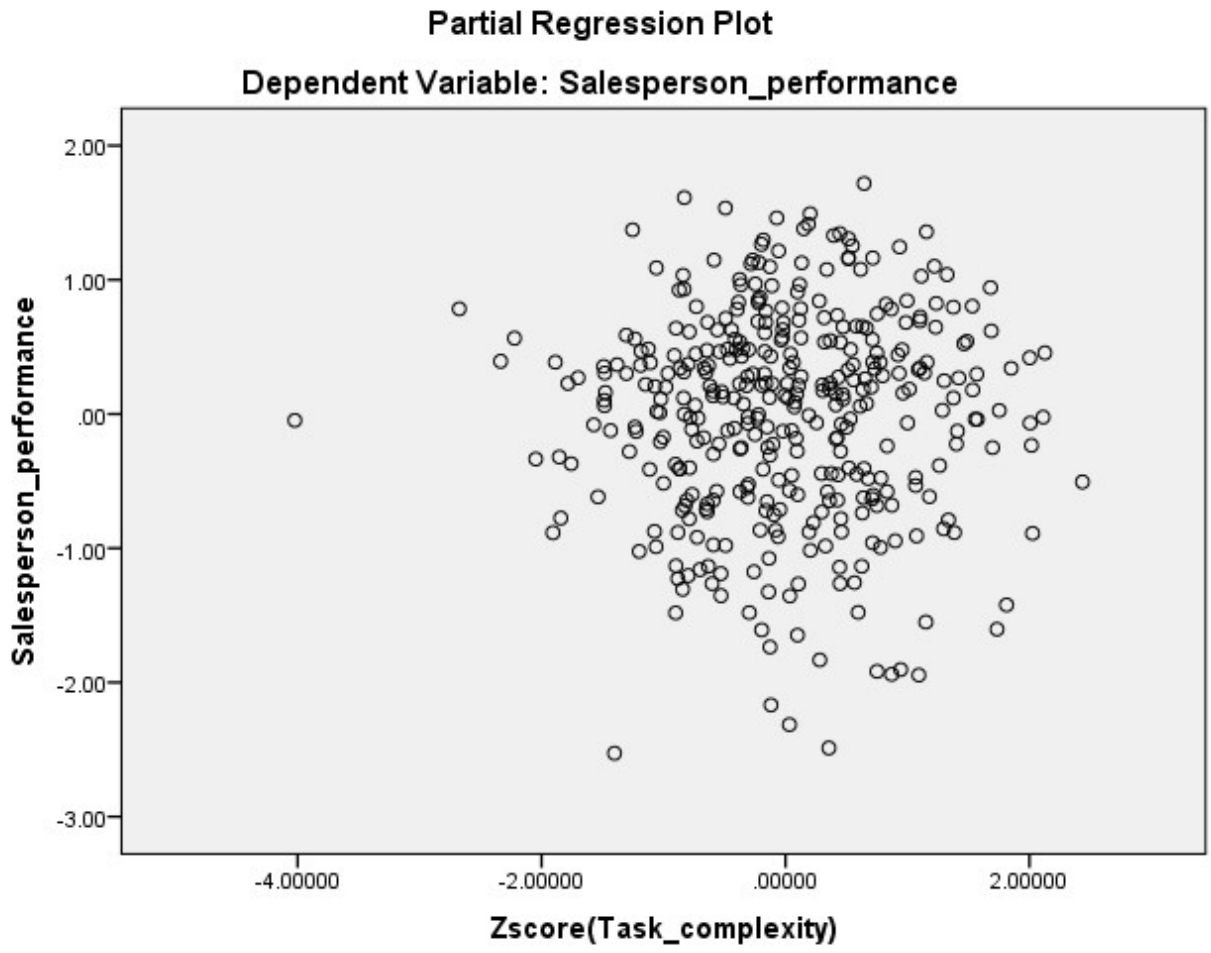
a. Dependent Variable: Salesperson_performance

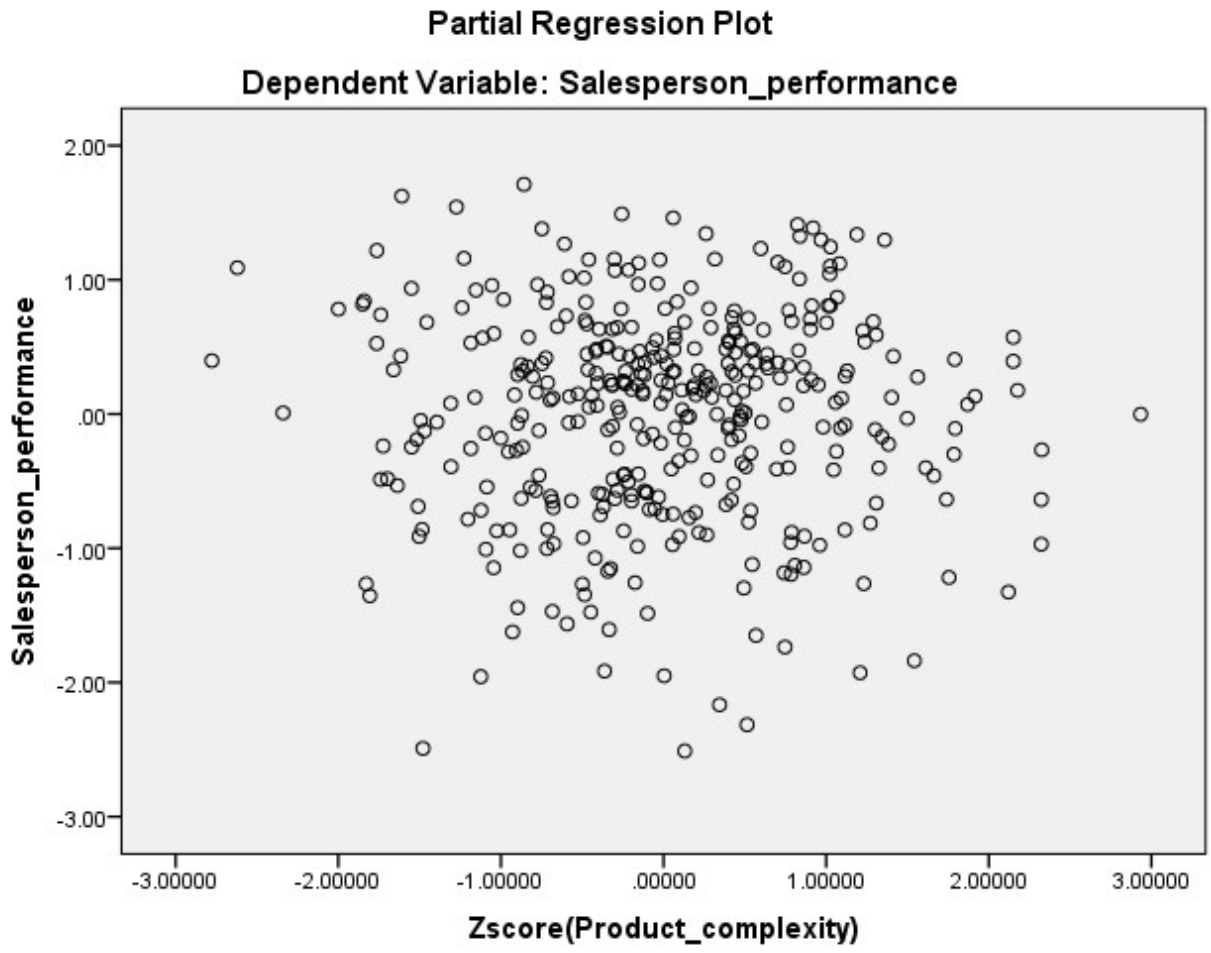

Histogram
Dependent Variable: Salesperson_performance
Mean = 7.46E-17
Std. Dev. = 0.992
N = 378
Frequency
40
30
20
10
0
-4
-2
0
2
Regression Standardized Residual

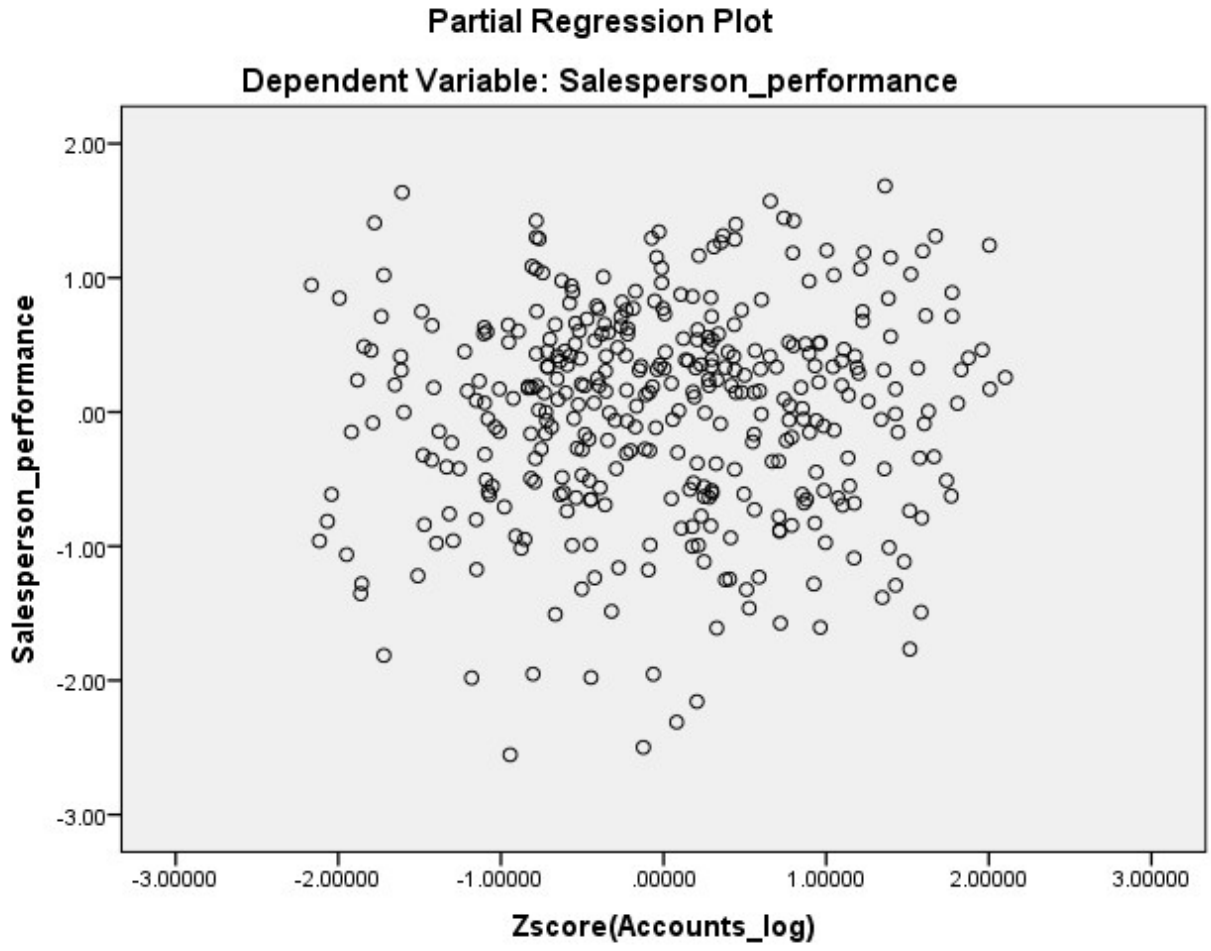

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Salesperson_performance
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0

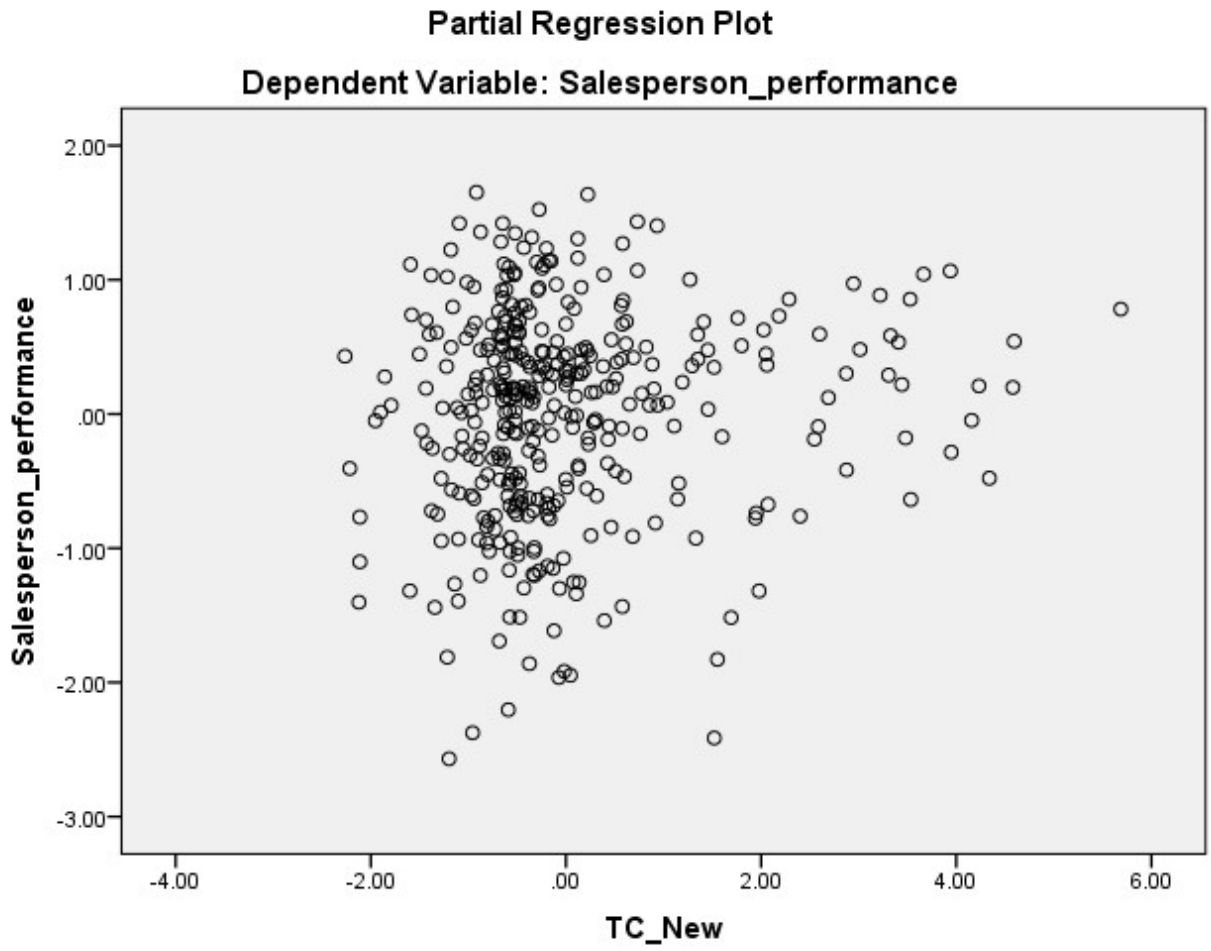

Scatterplot
Dependent Variable: Salesperson_performance
Regression Standardized Residual
2
0
-2
-4
-2
0
2
4
Regression Standardized Predicted Value

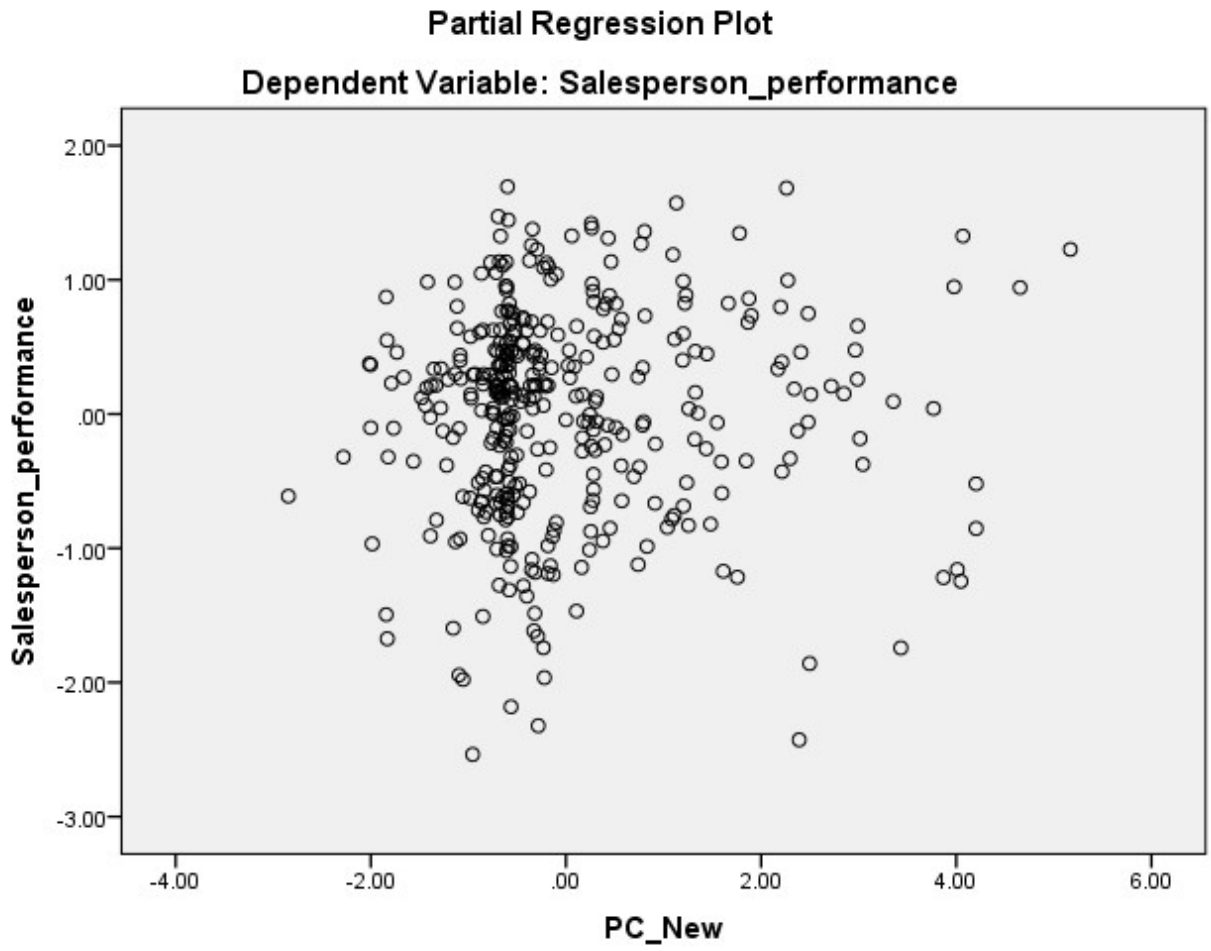

Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
Zscore(Outcome_control)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-4.00000
-2.00000
.00000
2.00000
Zscore(Task_complexity)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
3.00000
Zscore(Product_complexity)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
3.00000
Zscore(Accounts_log)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-4.00
-2.00
.00
2.00
4.00
6.00
TC_New


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-4.00
-2.00
.00
2.00
4.00
6.00
PC_New

New Regression 2

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.518	.040		136.437	.000		
	Zscore (Capability_control)	.113	.043	.135	2.648	.008	1.000	1.000
2	(Constant)	5.425	.055		99.202	.000		
	Zscore (Capability control)	.123	.044	.148	2.835	.005	.955	1.047
	Zscore(Task_complexity)	.014	.045	.018	.322	.748	.834	1.198
	Zscore (Product_complexity)	.003	.044	.004	.077	.939	.844	1.185
	Zscore(Accounts_log)	.042	.043	.052	.987	.324	.948	1.055
	TC_New	.065	.032	.113	2.031	.043	.841	1.188
	PC_New	.031	.032	.054	.980	.328	.850	1.176

a. Dependent Variable: Salesperson_performance

Collinearity Diagnostics [a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions						
				(Constant)	Zscore (Capability_control)	Zscore (Task_complexity)	Zscore (Product_complexity)	Zscore (Accounts_log)	TC_New	PC_New
1	1	1.071	1.000	.46	.46					
	2	.929	1.073	.54	.54					
2	1	2.219	1.000	.07	.00	.01	.01	.01	.08	.08
	2	1.410	1.255	.03	.11	.19	.22	.03	.00	.00
	3	1.057	1.449	.00	.26	.08	.09	.44	.00	.00
	4	.861	1.606	.00	.54	.09	.01	.43	.00	.00
	5	.685	1.799	.00	.06	.44	.50	.04	.05	.07
	6	.394	2.373	.04	.00	.11	.16	.05	.74	.43
	7	.374	2.437	.85	.03	.08	.00	.00	.13	.41

a. Dependent Variable: Salesperson_performance

Casewise Diagnostics[a]

Case Number	Std. Residual	Salesperson_performance	Predicted Value	Residual
194	-3.108	3.17	5.5943	-2.42766
320	-3.267	3.00	5.5519	-2.55190
394	-3.003	3.00	5.3460	-2.34601

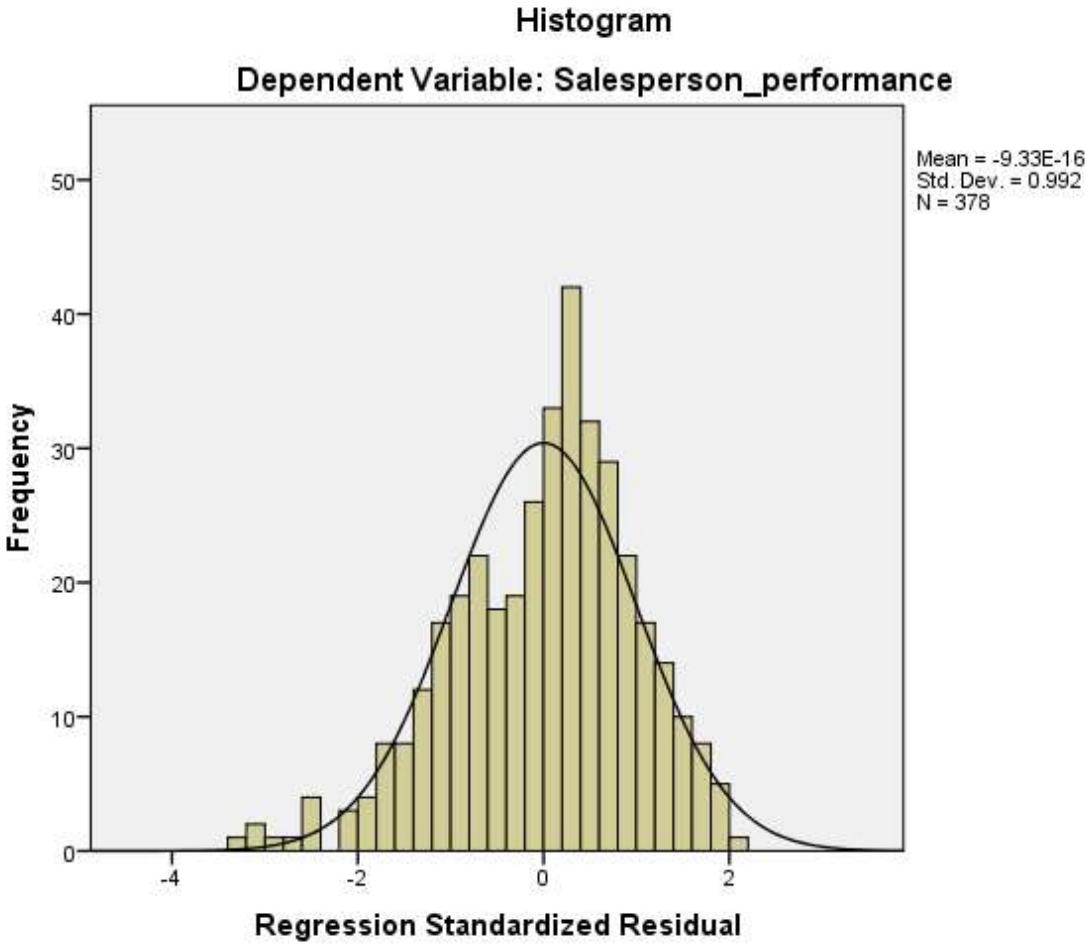
a. Dependent Variable: Salesperson_performance

Residuals Statistics[a]

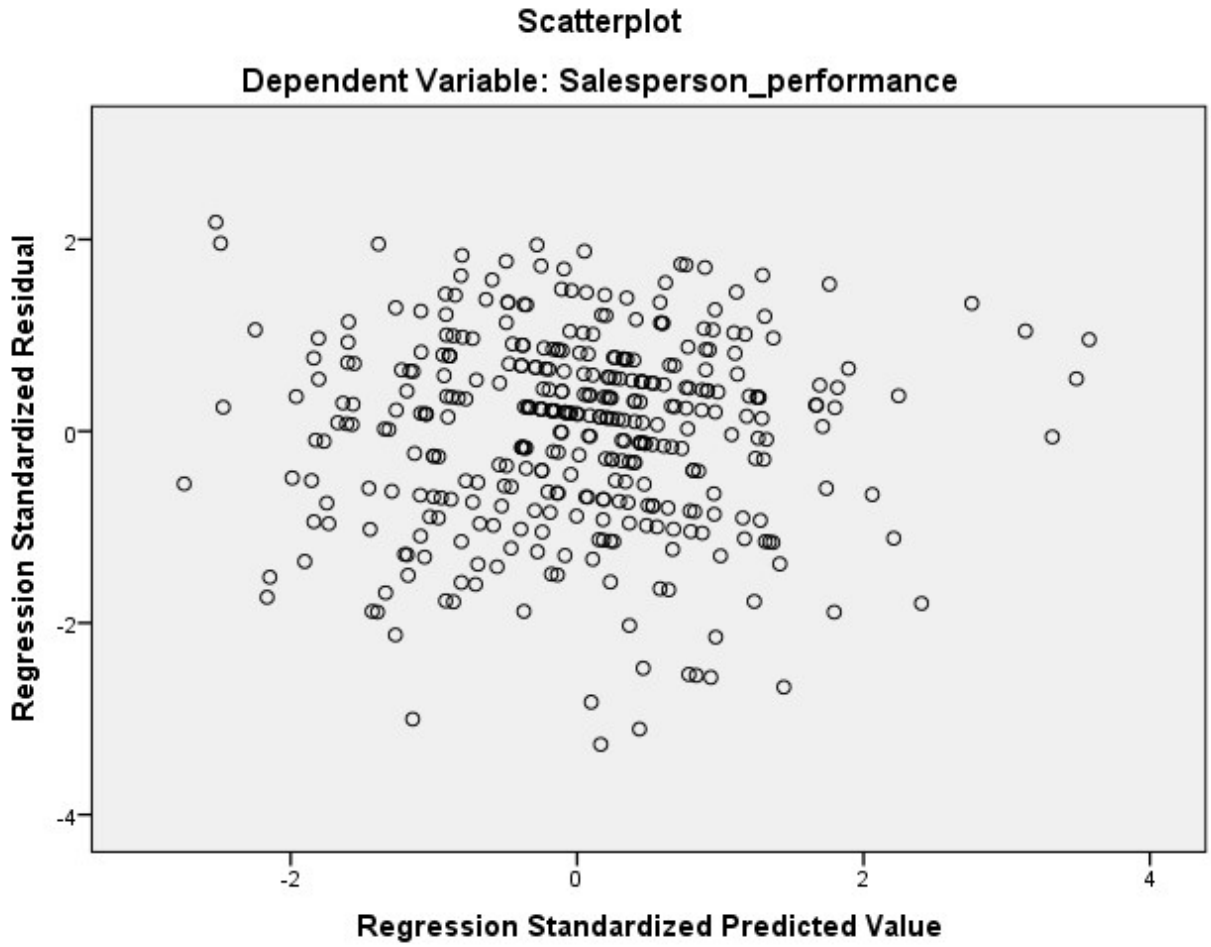
	Minimum	Maximum	Mean	Std. Deviation	N

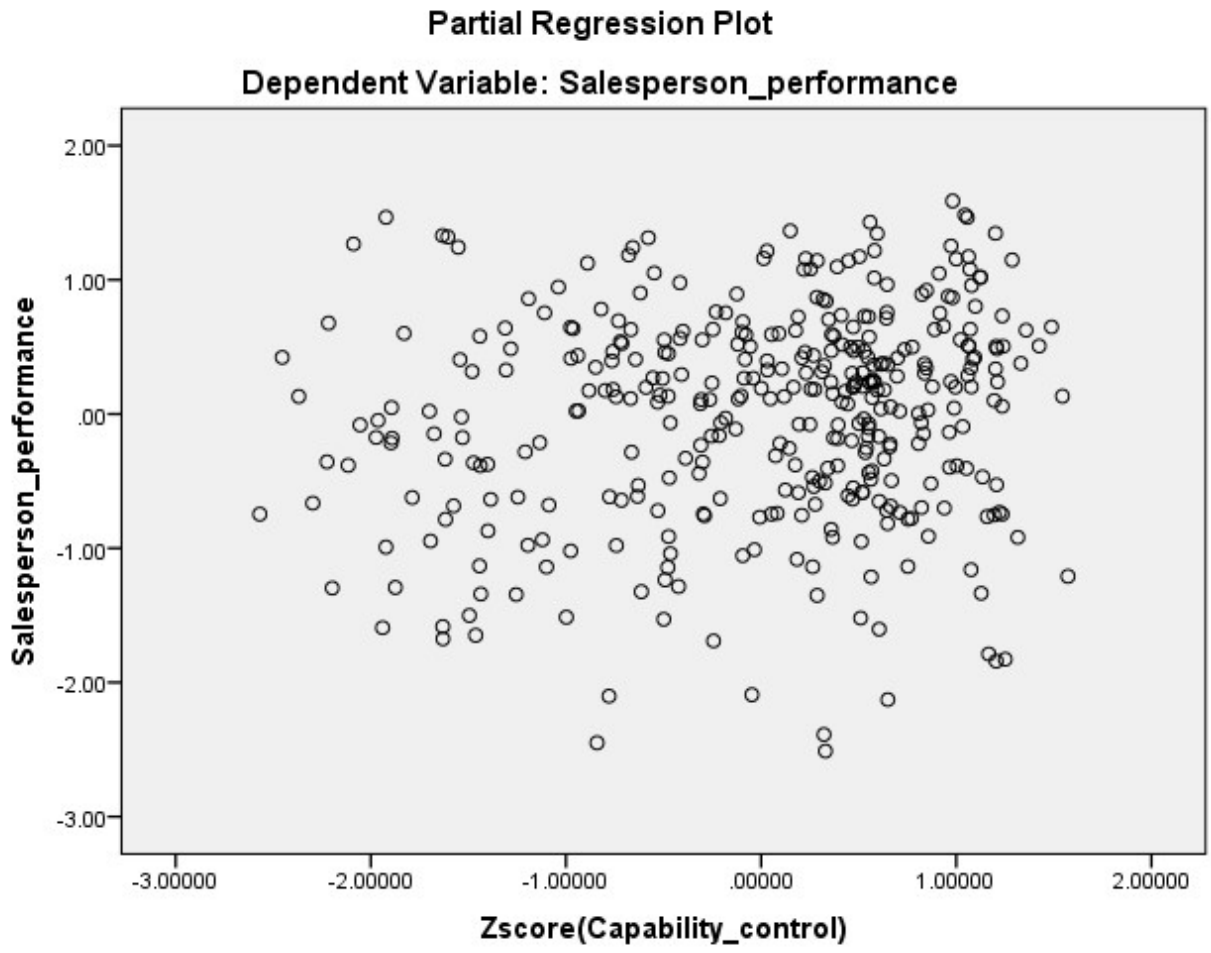
Predicted Value	5.0958	6.0868	5.5260	.15683	378
Residual	-2.55190	1.70293	.00000	.77492	378
Std. Predicted Value	-2.743	3.576	.000	1.000	378
Std. Residual	-3.267	2.180	.000	.992	378

a. Dependent Variable: Salesperson_performance




Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Salesperson_performance
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: Salesperson_performance
Regression Standardized Residual
Regression Standardized Predicted Value
2
0
-2
-4
-2
0
2
4


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
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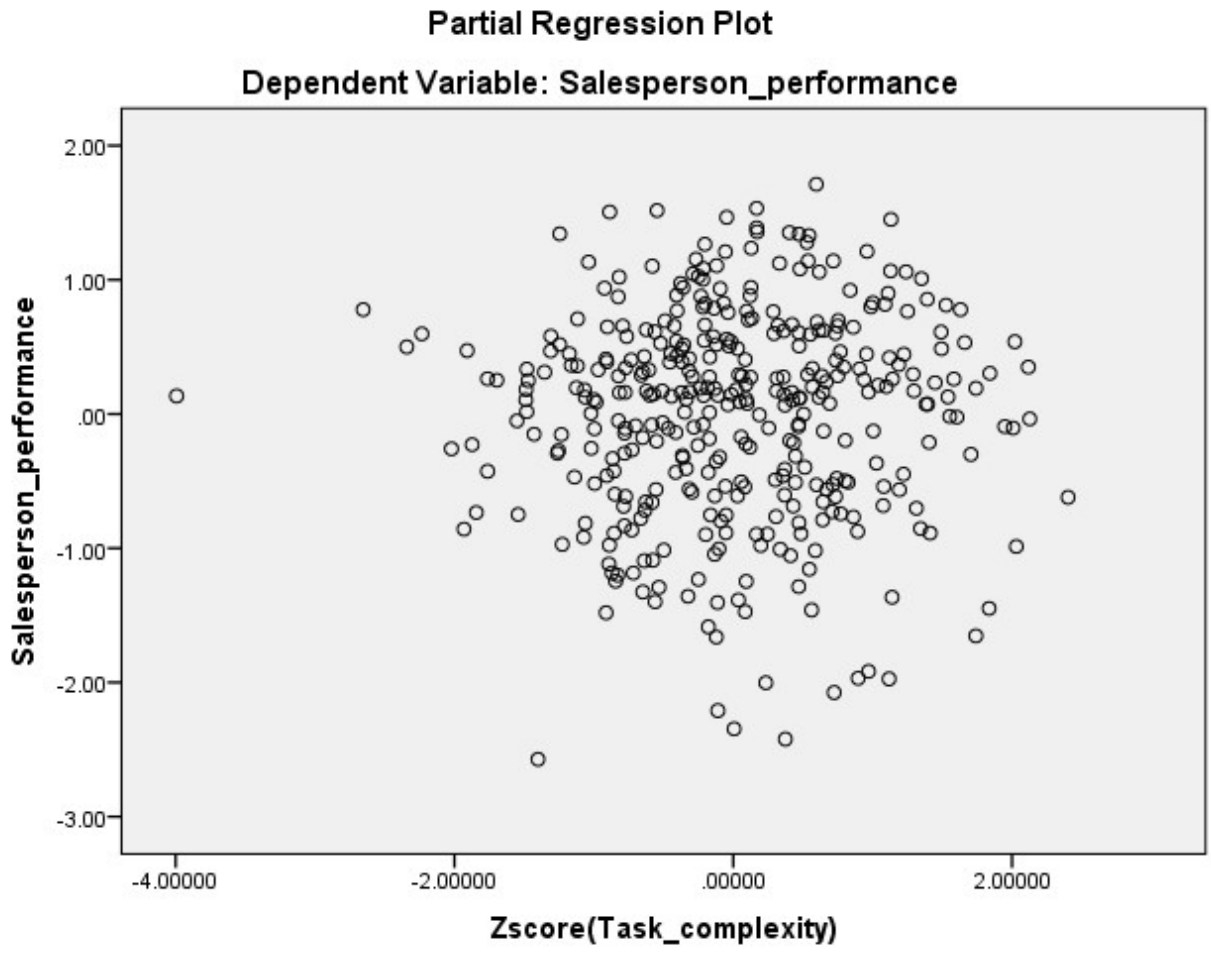
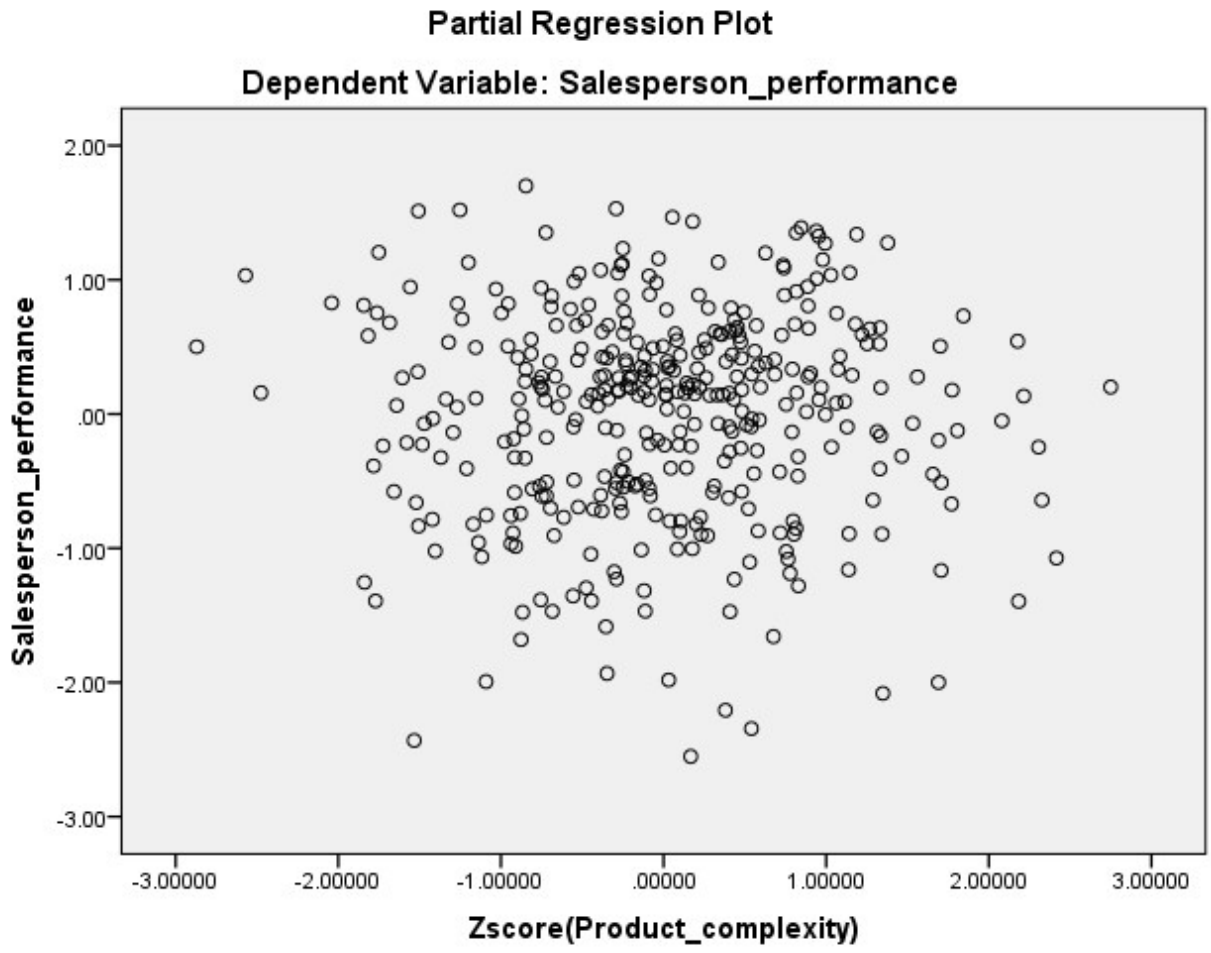
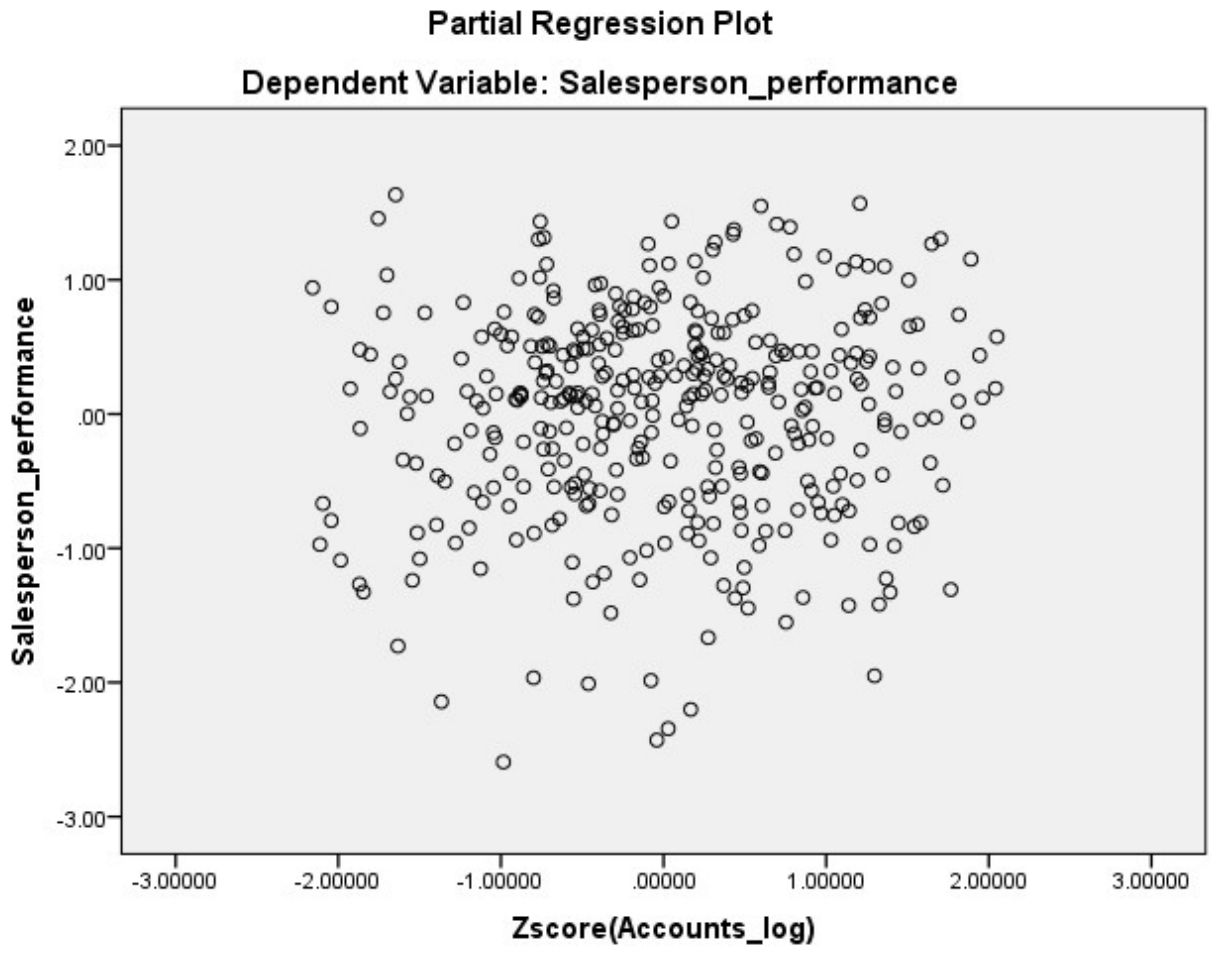
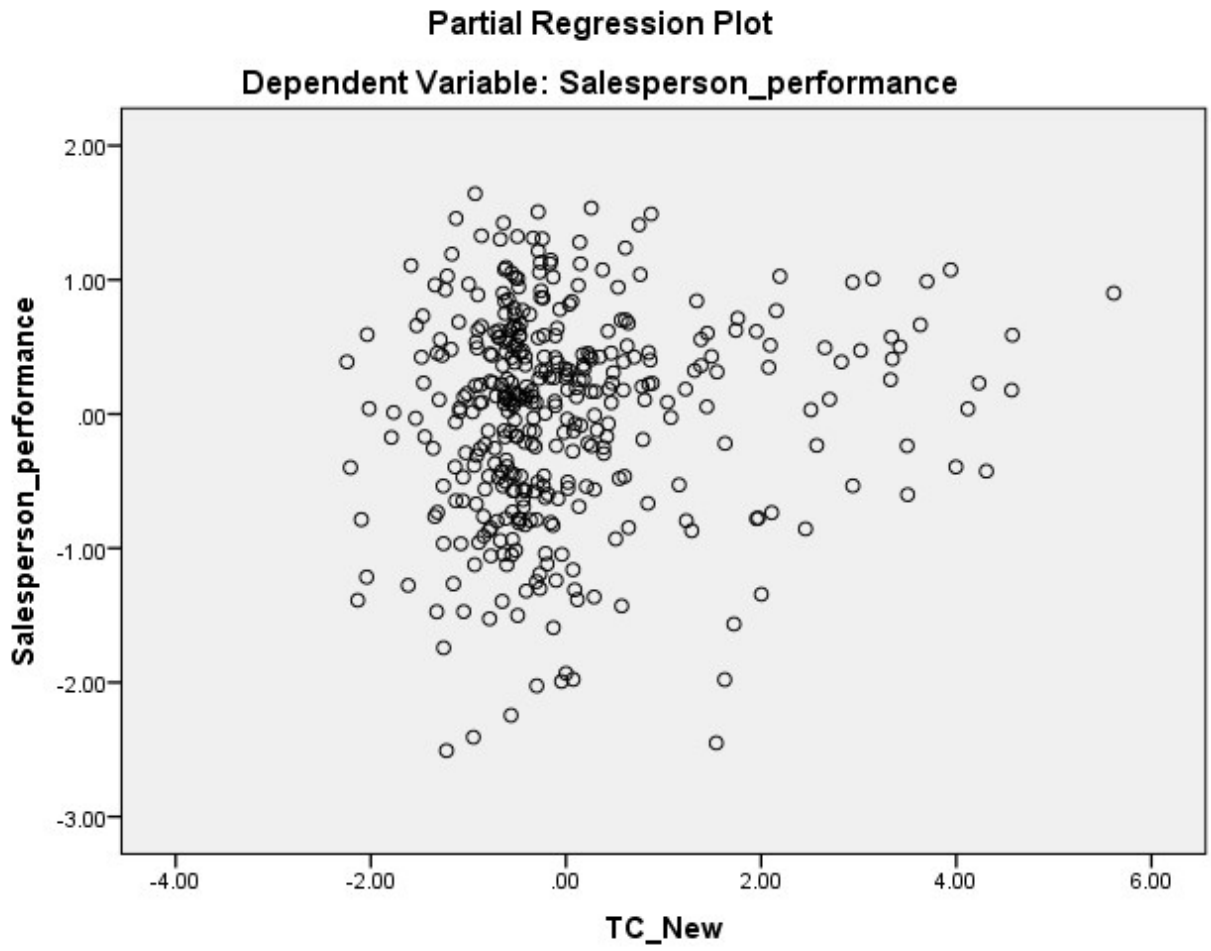
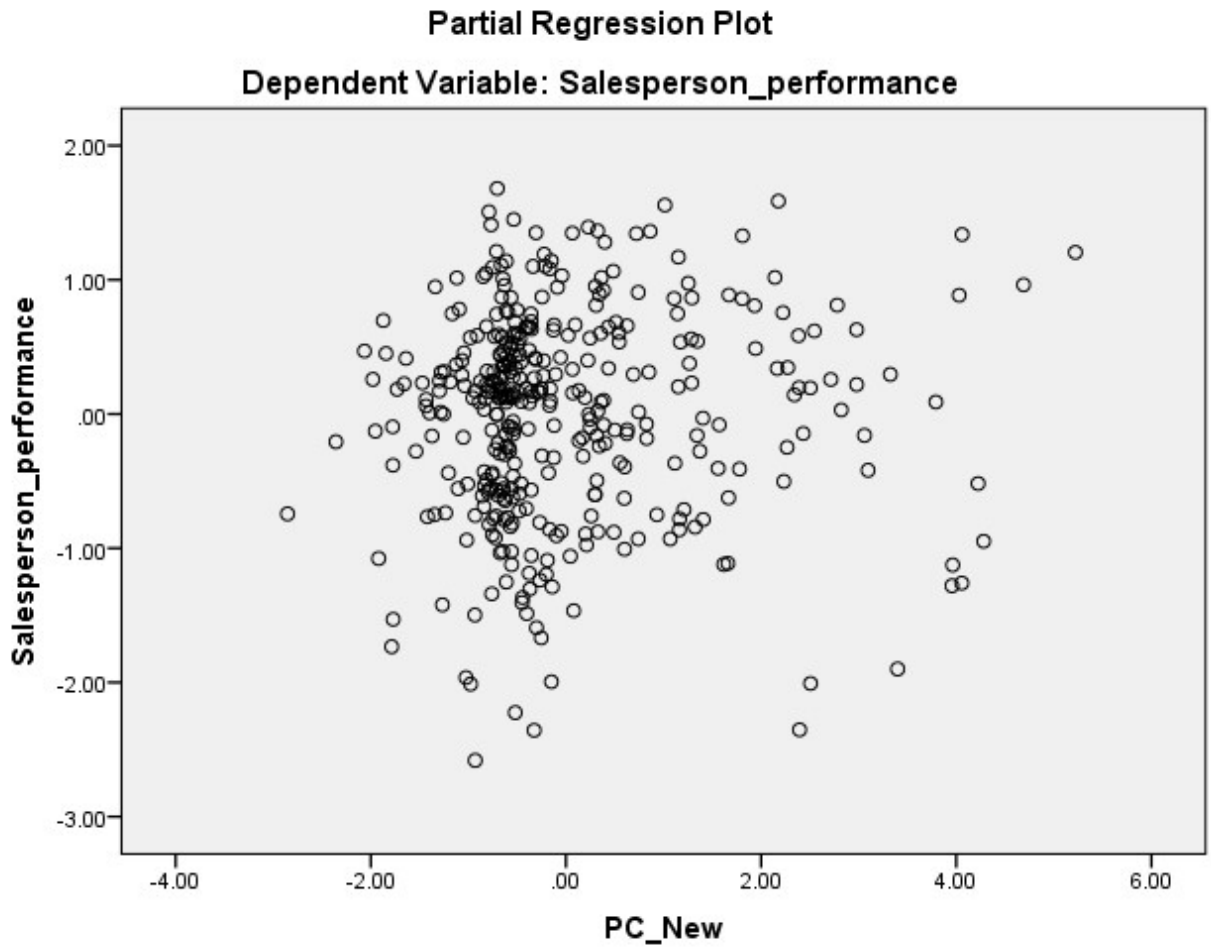
-1.00000
.00000
1.00000
2.00000
Zscore(Capability_control)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-4.00000
-2.00000
.00000
2.00000
Zscore(Task_complexity)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
3.00000
Zscore(Product_complexity)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
3.00000
Zscore(Accounts_log)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-4.00
-2.00
.00
2.00
4.00
6.00
TC_New



New Regression 3

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.515	.041		135.718	.000		
	Zscore(Activity_control)	.116	.047	.127	2.479	.014	1.000	1.000
2	(Constant)	5.424	.055		98.896	.000		
	Zscore(Activity_control)	.125	.047	.137	2.642	.009	.963	1.038
	Zscore(Task_complexity)	.016	.045	.020	.367	.714	.834	1.199
	Zscore (Product_complexity)	.000	.044	.000	-.008	.993	.848	1.179
	Zscore(Accounts_log)	.045	.043	.055	1.060	.290	.952	1.050
	TC_New	.067	.032	.116	2.089	.037	.838	1.193
	PC_New	.026	.032	.045	.822	.411	.853	1.173

a. Dependent Variable: Salesperson_performance

Collinearity Diagnostics [a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions						
				(Constant)	Zscore (Activity_control)	Zscore (Task_complexity)	Zscore (Product_complexity)	Zscore (Accounts_log)	TC_New	PC_New
1	1	1.110	1.000	.45	.45					
	2	.890	1.116	.55	.55					
2	1	2.217	1.000	.07	.00	.01	.00	.01	.08	.08
	2	1.412	1.253	.02	.12	.20	.22	.03	.00	.00
	3	1.055	1.450	.00	.25	.07	.10	.44	.00	.00
	4	.863	1.603	.01	.54	.08	.00	.43	.01	.00
	5	.686	1.798	.00	.05	.45	.52	.04	.05	.07
	6	.393	2.374	.00	.00	.14	.15	.04	.61	.59
	7	.375	2.433	.89	.03	.04	.00	.01	.25	.26

a. Dependent Variable: Salesperson_performance

Casewise Diagnostics[a]

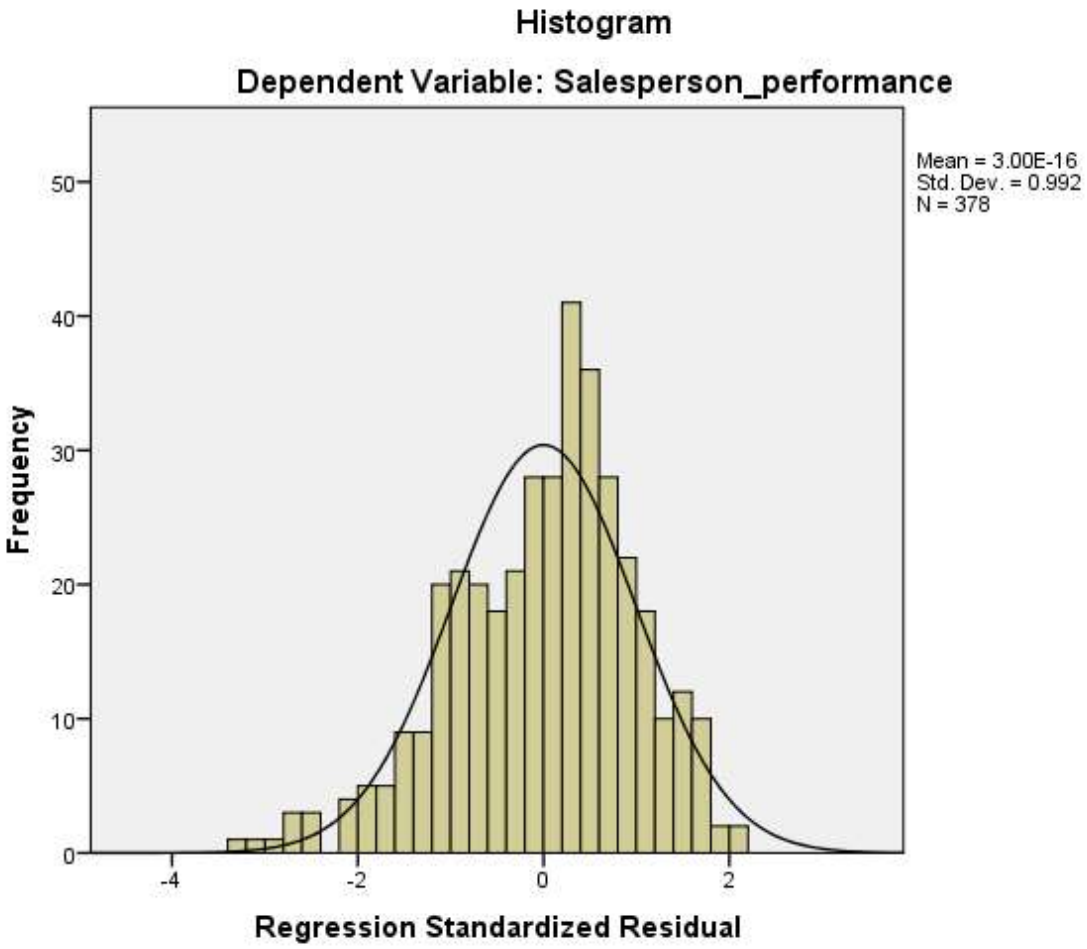
Case Number	Std. Residual	Salesperson_performance	Predicted Value	Residual
194	-3.191	3.17	5.6627	-2.49600
320	-3.317	3.00	5.5951	-2.59509

a. Dependent Variable: Salesperson_performance

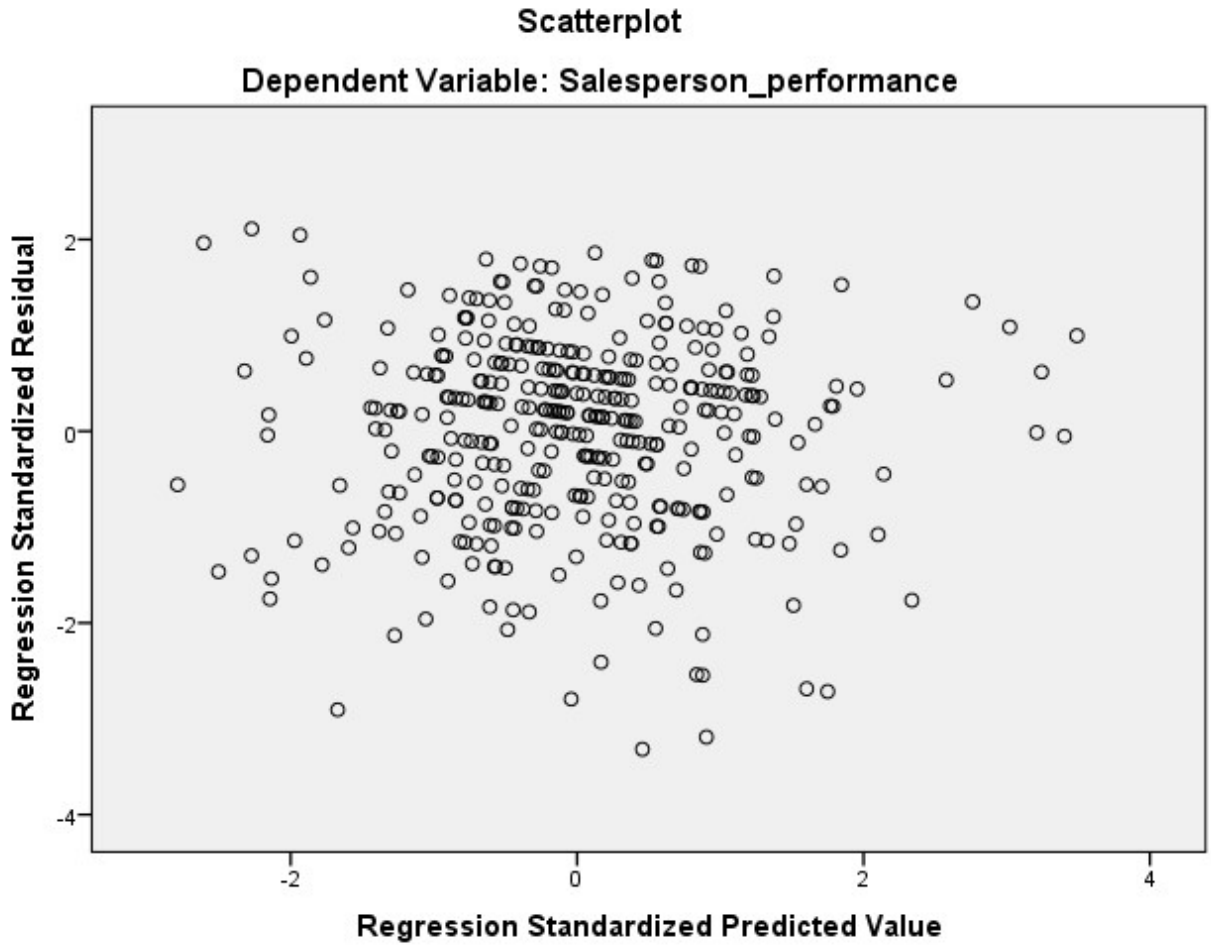
Residuals Statistics[a]

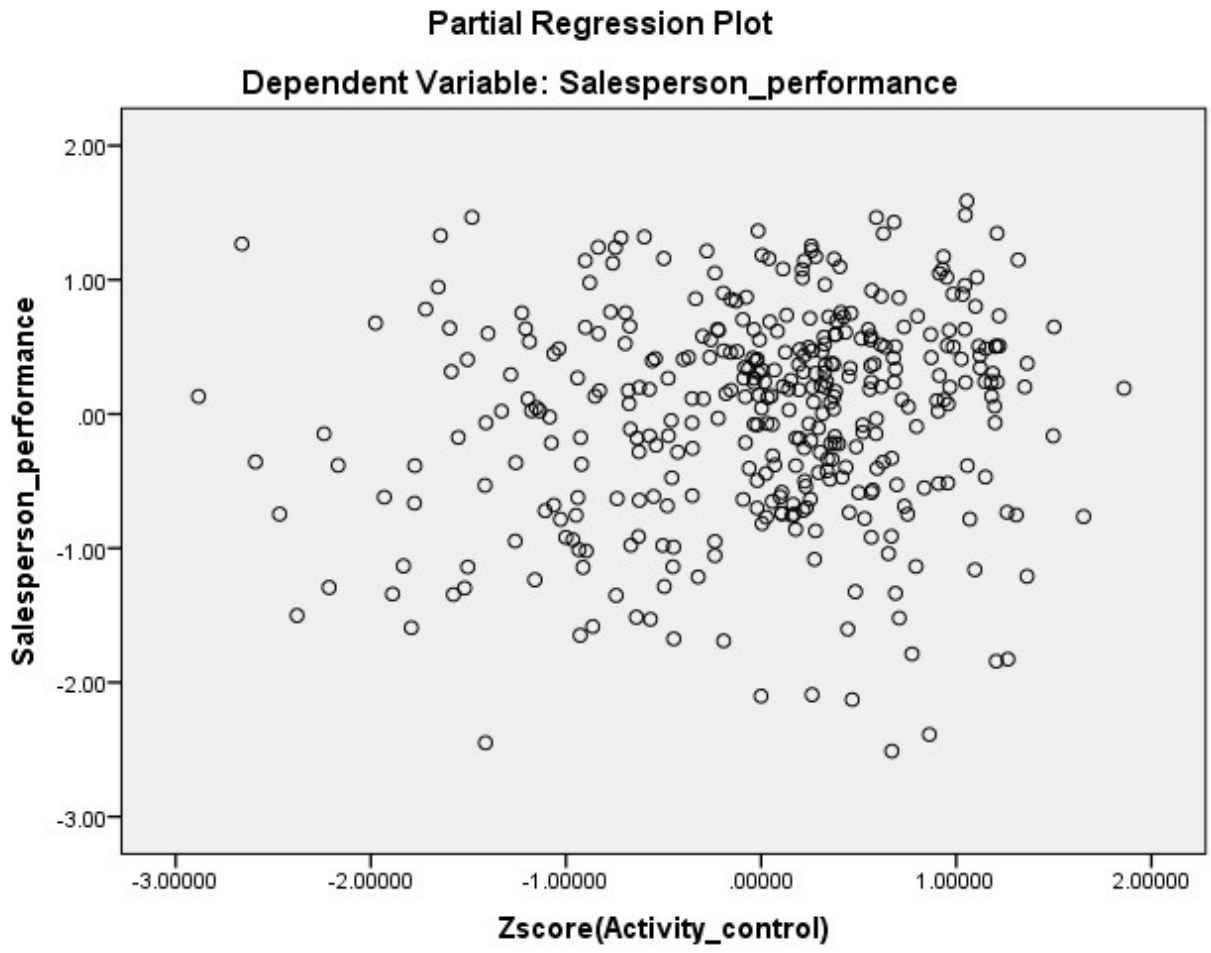
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	5.1038	6.0543	5.5260	.15137	378
Residual	-2.59509	1.65125	.00000	.77600	378
Std. Predicted Value	-2.789	3.490	.000	1.000	378
Std. Residual	-3.317	2.111	.000	.992	378

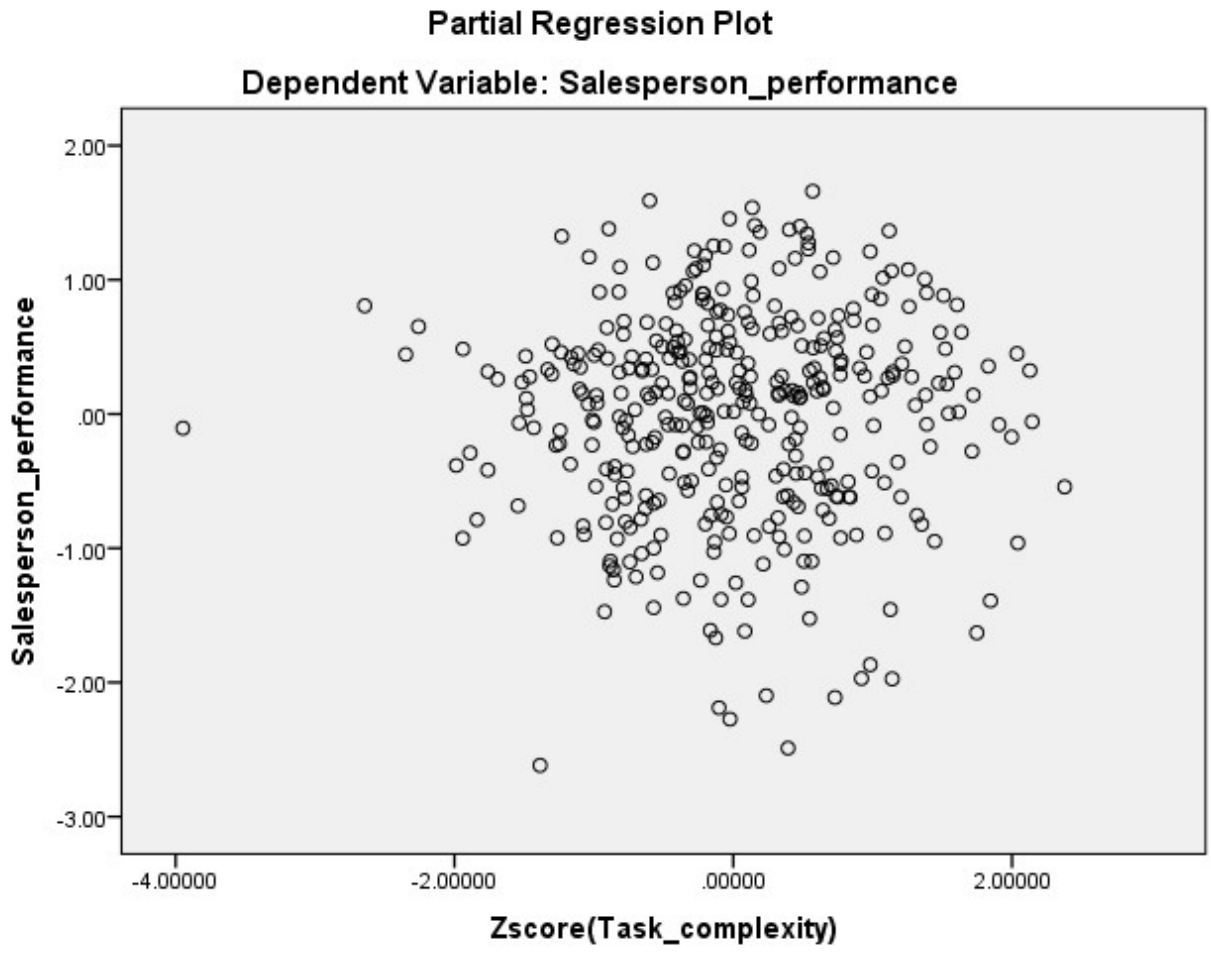
a. Dependent Variable: Salesperson_performance

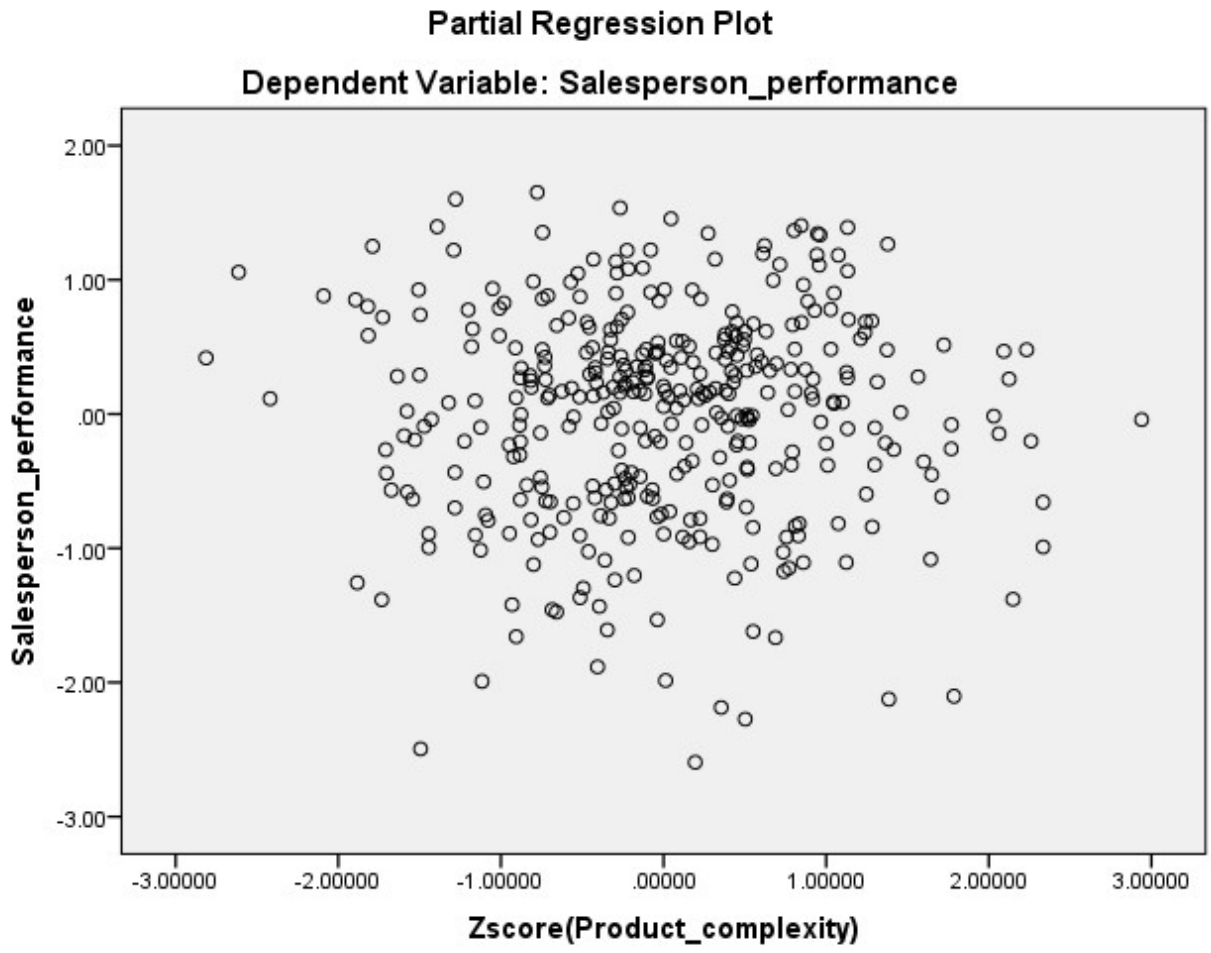

Histogram
Dependent Variable: Salesperson_performance
Mean = 3.00E-16
Std. Dev. = 0.992
N = 378
Frequency
50
40
30
20
10
0
-4
-2
0
2
Regression Standardized Residual

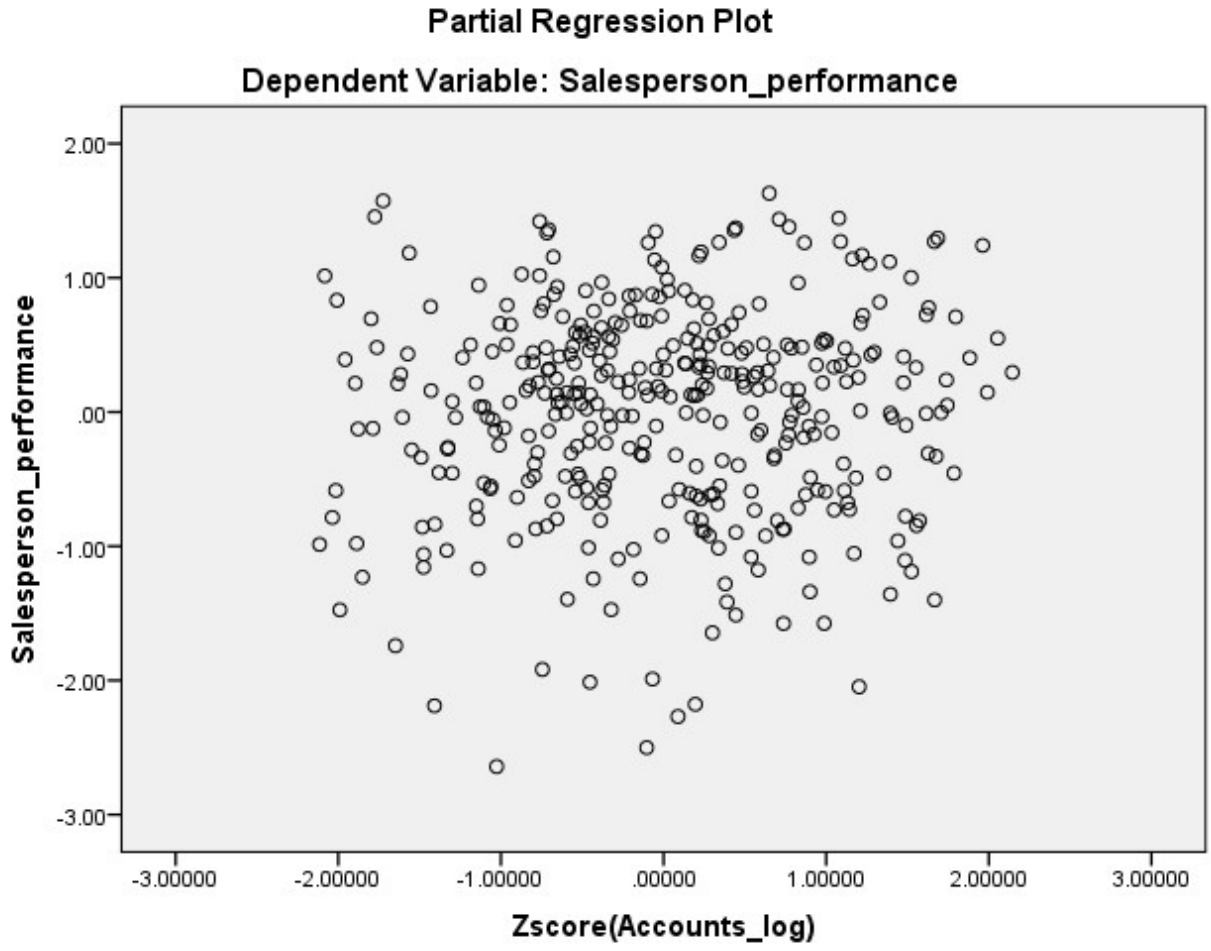

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Salesperson_performance
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0

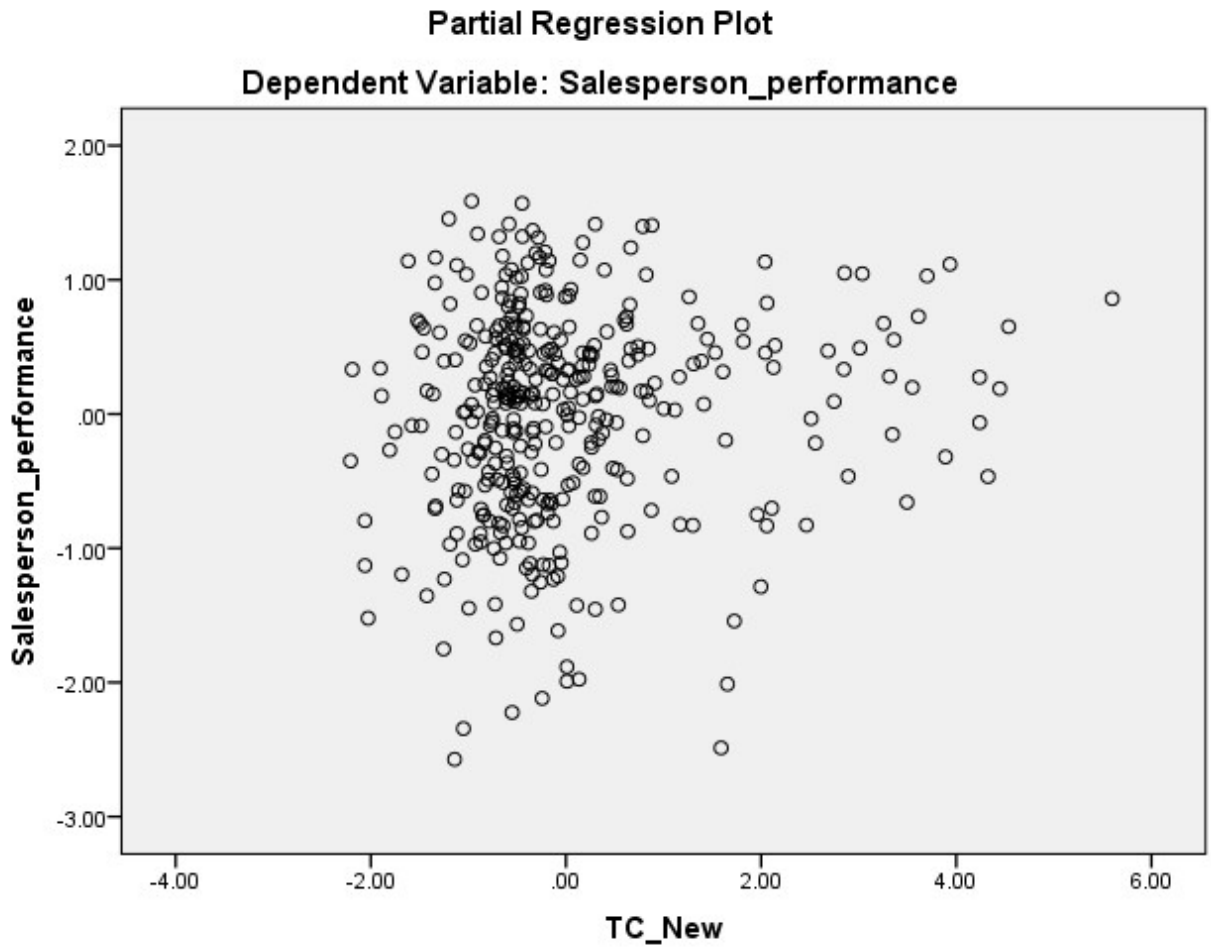

Scatterplot
Dependent Variable: Salesperson_performance
Regression Standardized Residual
Regression Standardized Predicted Value
2
0
-2
-4
-2
0
2
4

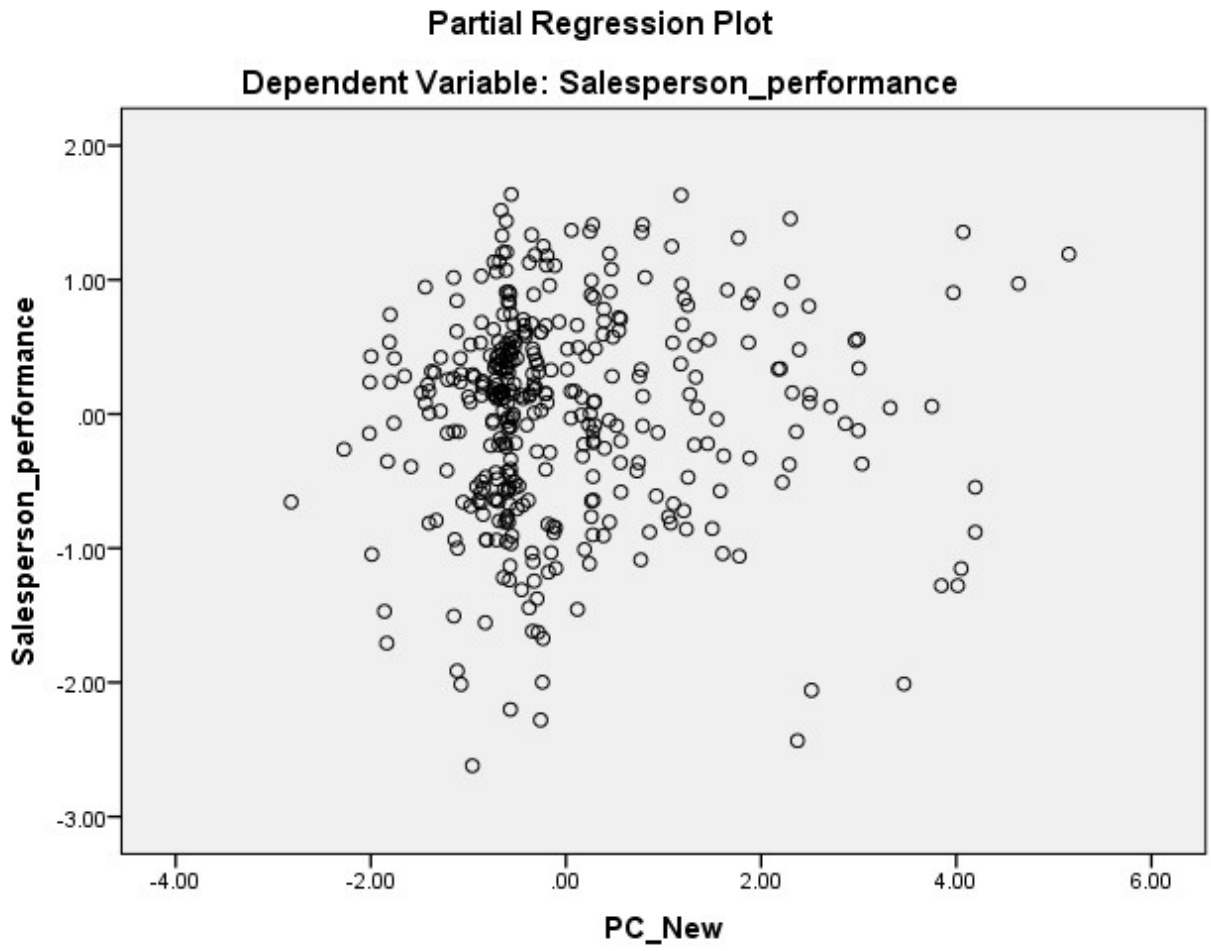

Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
Zscore(Activity_control)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-4.00000
-2.00000
.00000
2.00000
Zscore(Task_complexity)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
3.00000
Zscore(Product_complexity)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-3.00000
-2.00000
-1.00000
.00000
1.00000
2.00000
3.00000
Zscore(Accounts_log)


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-4.00
-2.00
.00
2.00
4.00
6.00
TC_New


Partial Regression Plot
Dependent Variable: Salesperson_performance
Salesperson_performance
2.00
1.00
.00
-1.00
-2.00
-3.00
-4.00
-2.00
.00
2.00
4.00
6.00
PC_New