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IMPACT OF CUSTOMER CROWDING ON FRONTLINE SERVICE EMPLOYEES: THEORETICAL AND EMPIRICAL IMPLICATIONS

BY

ANITA HODGE WHTING

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of
Doctor of Philosophy
in the Robinson College of Business
of
Georgia State University

GEORGIA STATE UNIVERSITY
ROBINSON COLLEGE OF BUSINESS
2005

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ACCEPTANCE

This dissertation was prepared under the direction of the candidate's Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Business Administration in the Robinson College of Business of Georgia State University.

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ABSTRACT

IMPACT OF CUSTOMER CROWDING
ON FRONTLINE SERVICE EMPLOYEES:
THEORETICAL AND EMPIRICAL IMPLICATIONS

By

Anita Hodge Whiting

May 6, 2005

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This study investigates the impact of crowding on frontline service employees. In particular, this study examines how customer crowding affects frontline service employees' stress, emotions, job performance, and displayed emotions. This study pioneers a new avenue by investigating employee (as opposed to consumer) reactions to customer crowding and addressing the gap in the literature on employees' interaction with the physical environment.

The underlying theoretical framework of the study is rooted in Lazarus's (1966; 1991) model that links appraisal, emotional response, and coping in a sequential process. Applying theory to the context issue of customer crowding, the major constructs for this study are determined as: (1) the stressor (customer crowding), (2) appraisal, (3) emotions, (4) coping, and (5) service quality outcomes. The four major areas investigated in this study are: (1) stress levels of FSE due to customer crowding,

(2) their emotions in the crowded service environment, (3) coping strategies they use under these circumstances, and (4) effects of such coping strategies on job performance and displayed emotions.

A laboratory experiment is conducted with 200 frontline service employees where human density (a precursor to crowding) is manipulated via scenarios and videos. Analyzing the data via ANOVA, simple regression, and multiple regression, the results showed: (1) a positive relationship between crowding and stress, (2) an inverse relationship between positive emotions and stress, (3) a positive relationship between stress and negative emotions, (4) a negative impact of escape and confrontive coping strategies on service quality outcomes, and (5) a positive impact of distancing and social support on service quality outcomes.

The contributions of the study are that: (1) it pioneers a new research avenue which opens avenues for future research, (2) it goes beyond the traditional Stimulus-Organism-Response approach to person-environment interaction and expands the domain of inquiry by incorporating the Lazarus transactional theory in the study of person-environment interaction, and (3) it provides a number of managerial implications regarding design of servicescapes to reduce the experience of crowding and training of frontline service employees on successful coping strategies.

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Chapter 1

INTRODUCTION

General Problem Area

Frontline service employees (FSE) are a critical component of the service experience (Singh 2000). An interface between the company and the customer, FSE play a very important role in the customer's evaluation of service quality (Hartline and Ferrell 1996). Research has shown that responses of frontline employees influence customer evaluations and satisfaction (Bitner 1990). If FSE attitudes and behaviors are less than expected, they can result in negative customer evaluations and, ultimately affect patronage (Bowen and Schneider 1985).

Research on the causes of performance deficiency and negative attitudes among the FSE is limited (Singh 2000; Babin and Boles 1996). Most service employee research has focused on employee outcomes such as job satisfaction, service quality, job performance and productivity (Hartline and Ferrell 1996; Schneider and Bowen 1985; Babin and Boles 1998; Singh 2000), but with an emphasis on the internal determinants of these outcomes. Marketing literature has, for the most part, neglected the external (or environmental) factors that may affect FSE performance (Eroglu and Whiting 2004). One environmental variable that is emerging as a significant factor which affects FSE performance is customer density and its resultant crowding experience (Eroglu and Whiting 2004). The topic continues to gain increased attention from practitioners as more and more companies downsize and reduce the number of their FSE and then demand more from their workforce (Oldham 2003). Among the

many implications that these developments have, there are two which are very relevant for the purposes of this research: 1) the remaining service employees now have to face longer lines of customers and (2) they are likely to deal with more irate customers who have had to wait longer in lines (Dickinson 2004). Hence, the underlying processes of how customer crowding affects FSE has become a critical issue. The negative effects of customer crowding on FSE have potential implications on employee attitudes and behaviors, degradations in service quality and, ultimately, customer satisfaction.

Both environmental psychology and marketing literature have demonstrated that crowding affects individuals, mostly by being detrimental to their physical and psychological well-being. There are many studies showing crowding's negative outcomes such as aggression (Regoeczi 2003), social withdrawal (Evans, Rhee, Forbes, Allen, and Lepore 2000) and anxiety (Zeedyk-Ryan and Smith 1983). In the marketing literature, crowding within a retail or service environment has been found to affect shopper satisfaction (Machleit, Eroglu, and Mantel 2000), stress and tension (Langer and Saegert 1977), and time spent in the store (Harrell, Hutt, and Anderson 1980).

The underlying premise of this study is that the employee perspective on crowding is an important, but understudied, area for marketing theory and practice. Given its likely effects on FSE's cognitive and behavioral responses, customer crowding can play a critical role in shaping FSE performance during the service encounter. To date, the crowding research in marketing has focused entirely on its impact on *customer* cognitions and behaviors. The present study pioneers a new research avenue by

addressing this gap in the literature and responding to Bitner's (1992) call for attention to *employee*'s interaction with the physical environment.

The theoretical framework for the study is Lazarus' (Lazarus 1966; Lazarus and Folkman 1984; Lazarus 1991) model that links appraisal, emotional response, and coping in a sequential process. The framework is transactional in its approach and thus very appropriate for the phenomenon that is under study. The fundamental proposition of this model is that it is the interaction of the *person and the environment* that creates a felt stress for the individual, who first appraises the situation and then takes certain actions to cope with it. Having faced a stressful environmental condition, the individual goes through a cognitive appraisal, "a process through which the person evaluates whether a particular encounter with the environment is relevant to his or her well-being, and if so, in what ways" (Folkman, Lazarus, Dunkel-Schetter, DeLongis and Gruen 1986, p. 992). Hence, depending on the situational and personal factors, an event may be appraised as being stressful to one person and not to another, where a stressful event is one which exceeds an individual's psychological resources (Lazarus and Launier 1978). One outcome of the appraisal process is emotive reactions whose nature and intensity are related to the appraisal of the event eliciting the emotional response (Folkman and Lazarus 1985). If the environmental situation is appraised as being stressful, the individual generates potential coping strategies (both cognitive and behavioral activities) that may be used to manage the stressful situation (Folkman and Lazarus 1985).

In the context of the present study, the Lazarus framework will be used to explain how crowding affects FSE. The proposed model contends that, when faced with customer density, the FSE will first appraise the extent for which they experience crowding and then whether or not they experience stress. If, indeed, the situation is evaluated as being stressful, a battery of emotional reactions will ensue, the quality and intensity of which are directly tied to the appraisal process. The appraisal and emotional outcome will then result in the generation of potential coping strategies that may be employed to manage the stressful situation. The Lazarus model (Lazarus and Folkman 1984) and particularly its extension to attitude theory by Bagozzi (1992) have been used in marketing, mostly in the organizational behavior literature. Schmidt and Allscheid (1995) applied Bagozzi's (1992) framework to illustrate how employees' appraisal of the climate ultimately leads to service intentions and customer satisfaction. Babakus, Yavas, Karatepe, and Avci (2003) also used it to explain the link between employees' appraisal of management commitment to service quality and service recovery performance. However, none of the previous applications have examined a *physical environmental variable* (such as customer density) as a potentially stress-inducing variable that might ultimately affect service employee emotions and behaviors.

Purpose of Study

The purpose of this research is to investigate the impact of crowding on FSE. Specifically, the study seeks to examine how *customer density affects FSE's emotions, the types of coping strategies that are generated when customer density yields the experience of crowding and the impact of this stress on FSE performance and displayed emotions (*both of which are shown to influence service quality).

Plan of Study

In the following sections, we first begin with a literature review of the relevant research on FSE. Next, the concepts of density and crowding are defined and explained. Various crowding theories are discussed to illustrate how and why density affects individuals and, in particular, its probable influences on the FSE. Next, we introduce the proposed model for the study, which is grounded in the cognitive appraisal model of Lazarus and his colleagues. The model and its hypothesized relationships are presented and relevant literature is discussed as the justification for these hypotheses. Finally, the last section describes the methodology by discussing the sampling plan, the experimental design, the measures, and experimental manipulations that will be used to test the hypotheses.

Chapter 2

LITERATURE REVIEW

Frontline Service Employees (FSE)

FSE are critical to any service organization; they are a source of differentiation and competitive advantage for the company (Pfeffer 1994). They play a boundary-spanning role between the company and the customer (Schneider 1980; Singh 1993). In addition to being and providing the service, FSE are the organization, the brand, and the marketer to the customer (Zeithaml and Bitner 2003). For some customers, FSE are the only face of the organization that the customer sees (Hartline, Maxham, and McKee 2000), and, thus, greatly impact the customer's image of the service organization (McShaster 2002).

As such, FSE's attitudes and behaviors influence service quality and customer satisfaction (Zeithaml and Bitner 2003; Hartline and Ferrell 1996; Bowen and Schneider 1985). According to Bitner (1994), "customer satisfaction is often influenced by the quality of the interpersonal interaction between the customer and the contact employee" (p.50). Within the service encounter, employees should be viewed as performers rather than workers because their behavioral performance influences the customer's perceived service quality (Yoon and Suh 2003). Customers evaluate a service based on the specialized skills, techniques, and experiences with the customer contact employee that they interact with (Paulin, Ferguson, Payaud 2000). Most importantly, the attitudes and actions of FSE influence the customer's perceived level of service and satisfaction with the encounter (Bowen and Schneider 1985; Bitner 1990) and this effect can either be

positive or negative. Thus, the burden for how a customer perceives a service lies in the hands of the frontline service employees (Hoffman and Ingram 1992).

In addition to influencing customers' satisfaction with a current service transaction, FSE also affect the company's future relationship with the customers (Yoon and Suh 2003), their decision to remain loyal or to switch to another company (Parasuraman, Zeithaml, and Berry 1985; Schneider and Bowen 1993), and future intentions (Boulding, Kalva, Staelin, and Zeithaml 1993) thus impacting the company's financial performance (Rust and Zahorik 1995). Heskett et al's (1994) Service Profit Chain models the relationship between employees' service-oriented behaviors, customer satisfaction, customer loyalty, customer retention, and ultimate revenue growth.

Despite the importance of FSE, there is little theoretical understanding within marketing on the outcomes and service behaviors of contact employees (Fisk, Brown, and Bitner 1993). Bitner (1994) has stressed the importance of examining the service encounter from the employee's perspective. Research within marketing has largely focused on the customer's experience while neglecting the employee and his/her experience. According to Willey (1994), it is to a firm's competitive advantage to achieve strategic unity between its internal and external constituents. Internal marketing supporters have argued that in order for businesses to provide quality service to their external customers, companies must focus on the service they provide to the internal customer (the employee) (Groonos 1983). Employees will not provide better service than they receive. Thus, it is important for organizations to understand factors

that affect the employee's perspective and performance (Babin and Boles 1998) so that they can ensure that the attitudes and behaviors of frontline service employees are conducive to delivering quality service (Hartline and Ferrell 1996).

One aspect of the service encounter that affects employees is the *physical environment* in which the employees operate and function. Research on environmental impact on consumers is replete with examples of various atmospheric variables affecting shopper behavior such as time spent in store, pace in store, feelings, store image, merchandise evaluation, satisfaction and sales (see Turley and Milliman 2000 for a review). However, despite a research call by Bitner (1992), marketing literature has largely ignored the potential influence of the physical environment on *employee* behaviors and cognitions. This is surprising given that employees spend extended periods of time within the service setting and that the effects observed on customers (whose stay in the setting is much shorter) can be expected to be even stronger in the case of employees.

Although marketing research on employee reaction to the physical service environment is scant, there is evidence that employees are affected by the setting (Baker, Berry, and Parasuraman 1988). Research in organizational behavior, which has paid more research attention to the topic, has shown that employee satisfaction, productivity, and motivation are all affected by the physical work setting (Becker 1981; Davis 1984). In addition to cognitive and behavioral effects, studies have also found evidence of physical influences, such as heightened diastolic blood pressure levels in a noisy factory (Matthew, Cottington, Talbout, Kuller, and Diegel 1987) and decrements in

mental health and job satisfaction due to poor air quality, noise, ergonomic conditions and lack of privacy (Klitzman and Stellman 1989). Among the many potential environmental stressors, the environmental psychology literature identifies crowding due to high human density as one of the more powerful influencers of cognitions and behaviors (Evans and Lepore 1992; Schmidt and Keating 1979; Stockdale 1978).

Density and Crowding

To understand how crowding affects employees, it is important to first define and delineate the construct, particularly as it relates to its sister construct, density. Density is the number of people and/or objects in a given space (Drintewater and Gudjonsson 1989). It plays a central role in the appraisal of crowding and is shown an antecedent of crowding (Eroglu and Machleit 1990; Sundstrom 1978; Baum, Davis, and Aiello 1978). Density is a physical condition of the environment while crowding is a response or appraisal of the environment and is considered an antecedent of crowding (Eroglu and Machleit 1990; Stokols 1978; Sundstrom 1978). Crowding occurs when the demand for space exceeds supply during the individual's appraisal of the density condition (Stokols 1972; Eroglu and Harrell 1986). One definition of crowding describes it as an outcome of an appraisal of physical conditions, situational variables, personality characteristics, and coping assets (Stokols and Altman 1987). Research has shown that there is a stress arousal factor associated with crowding (Worchel and Teddie 1976; Altman 1975; Valims and Baum 1973). Crowding causes stress due to the consequences of having to interact with too many people (Sinha and Sinha 1989)

It is important to note that different density levels affect individuals differently in terms of crowding feelings. “In some conditions and for some people, a given level of density will lead to crowding while in other conditions or for other people it may not” (Baum and Paulus 1987, p.534).

Within the context of retail crowding, customers are found to experience crowding due to spatial (e.g., lots of merchandise in a constrained space) and/or human (number of customers) elements of density, termed respectively, as “spatial crowding” and “human crowding” (Machleit, Kellaris, and Eroglu 1994). Given that this study examines employee, rather than customer, behaviors, it is focused exclusively on human crowding. Specifically, we examine the crowding effects that are induced by high customer density due to number of customers waiting to be served within a given space in the service delivery context.

The vast environmental psychology literature on crowding effects has typically found that crowding has detrimental effects on human psychology, behavior and physical health (Evans and Lepore 1992; Baum and Paulus 1987; Stockdale 1978). Crowding can produce a strong negative evaluation of the environment and the situation among all individuals (Schmidt and Keating 1979), and cause a spectrum of undesirable outcomes including psychological distress (Evans, Schroeder, and Lepore 1996; Gomez-Jacionto and Hombrados-Mendieta 2002), social withdrawal (Evans, Rhee, Forbes, Allen, and Lepore 2000), aggression (Regoeczi 2003), role stress (Szilagyi and Holland 1980), hostility, anxiety, and desire for interaction (Zeedyk-Ryan and Smith 1983), and fatigue, irritation, annoyance, and involvement (Aiello, Thompson, and

Brodzinsky 1983). It has also been shown to affect task performance (Heller, Groff, and Solomon 1977; Paulus and Matthew 1980), affect (Bruins and Barber 2000; Langer and Saegert 1977), and job satisfaction (O'Brien and Pembroke 1982).

Specifically in marketing, crowding from a customer perspective has been found to influence emotions (Hui and Bateson 1991), shopping satisfaction (Eroglu and Machleit 1990; Machleit, Eroglu, and Mantel 2000), time spent in the store (Harrell, Hutt, and Anderson 1980), interpersonal behavior (Hui and Bateson 1990), and repatronage intentions (Wakefield and Bladgett 1994).

Theories of Crowding

There are several theoretical bases for understanding the crowding phenomenon. The *stimulus overload theory* of crowding was developed from studies on city life that involved high levels of physical and social stimulation (Wirth 1938; Simmel 1950). Overload is defined as a situation in which the rate and amount of environmental stimuli exceed the capacity to cope with the stimuli (Miligram 1970). This theory assumes that there is an optimal level of stimulation and deviations from this ideal state are undesirable (Altman 1978). High density causes high levels of stimulation that overloads the individual's processing capabilities, thus resulting in the perception or appraisal of crowding and stress. Research on overload models and crowding has been empirically tested in many studies (Saegert 1973; Langer and Saegert 1977; Altman 1975). The major premise of the overload model is that when one's processing ability of environmental stimuli has been exceeded, the perception or appraisal of crowding will result.

The *arousal theory* is very closely related to the overload model (Evans and Lepore 1992). Arousal has a curvilinear effect on performance with low and high levels of arousal leading to negative results and medium arousal leading to positive results (Hebb 1955). This inverted U relationship is also called the Yerkes-Dodson Law. Hebb (1955) argued that there is an optimal level of arousal and people will behave in such a manner as to maintain it. Support for this curvilinear effect has been found in many empirical studies (Broadbent 1971; Hebb 1972). High density creates above-optimal levels of arousal thus causing stress and negative reactions from individuals such as unpleasant feelings and decreased performance on complex tasks (Evans 1978; Paulus, Annis, Seta, Schkade, and Matthews 1976). In addition to arousal directly affecting individuals, it may also be a consequence of overload (Cohen 1978), thus linking the overload and arousal theories (Evans and Lepore 1992). Therefore, individuals in a high density situation may experience both arousal and overload, leading them to appraise the environment as crowded.

The third theory that helps explain the effects of crowding is Zajonc's (1965) *theory of social facilitation*. The basic premise of social facilitation theory is that the presence of others increases arousal. This, then, enhances the tendency to perform stronger dominant responses, the latter being responses with the greatest habit strength. Increasing the number of individuals results in increased feelings of being crowded (Baum and Greenberg 1975), less satisfaction with the environment (Aiello, Epstein, and Karlin 1975; Griffith and Veitch 1971), less liking of and more competitive orientation toward others (Baum and Greenberg 1975; Griffith and Veitch 1971), and greater physiological or psychological symptoms of stress and arousal (D'Atri 1975;

Aiello, Epstein, and Karlin 1975). These studies indicate that as the number of people in a given environment increases, the appraisal for crowding increases. Thus, these studies illustrate the negative effects of large numbers of people within an environment.

The fourth theory of crowding is *adaptation theory* (Helson 1964; Wohlwil 1974). Adaptation theory posits that all individuals seek an optimal level of stimulation from the environment and that individuals with over- and under- stimulation will engage in ways to reduce or increase the amount of environmental stimulation. This optimal level of stimulation is known as the adaptation level and it is based on the individual's previous experiences (Baron 1995). When individuals are not in their adaptation level or preferred range of stimulation, they seek to devise coping mechanisms to minimize the amount of negative effects of the situation. Empirical evidence has been found to support this theory with crowding and coping behaviors (Sundstrom 1975). A second aspect of adaptation theory contends that there are shifts in the adaptation level itself. Without any conscious effort, the individuals over time may shift their tolerance levels so that they get accustomed to dealing with high customer density than before (Baron 1995). Research supporting crowding and shifts in adaptation is limited because of the necessity to study responses at different times (Sundstrom 1978). Adaptation theory helps explain the perception of crowding, the adaptations that are made in response to crowding, and the shifts in responses to crowding.

The fifth theoretical explanation of crowding is *behavioral constraint* that draws from Brehm's (1966) reactance theory that human beings have a basic desire to maintain their behavioral freedom. When an individual's desired actions are restricted

due to excessive amounts of people in an environment, the individual will perceive the environment as crowded. Studies have shown that high density interferes with goal attainment and restricts movement (Evans and Lepore 1992; Stokols 1972; Sundstrom 1975). Another study by Proshansky, Ittelson, Rivlin (1970) observed that crowding was experienced when environmental density lead to frustration of an individual's pursuit of important activities and goals. Any perceived limitation of freedom to perform a behavior will result in an individual's reaction to the setting in a way to restore that freedom. According to Saegert (1978), a person loses behavioral freedom in high density environments in the following ways: (1) through lack of space to move freely, (2) through increased need to coordinate behavior, (3) through the increased number of people with whom coordination is required, and (4) through less complete and accurate knowledge of conditions which in turn reduces awareness of behavioral options.

To sum, at least three conclusions can be reached from the above review of crowding theories that are relevant to this study. First, crowding leads to a stressful experience which results from a high density condition when demand for space exceeds the supply. Second, crowding has physical, psychological and behavioral outcomes, depending on its intensity and duration. Third, to the extent that crowding is experienced, it can interfere with goal achievement and, therefore, indirectly impact all of the physical, psychological and behavioral ramifications related to the success or failure of this endeavor.

Within the context of FSE facing high customer density leading to a crowding experience, all of the above conclusions have important implications. We expect to find

that high levels of customer density will lead to crowding and stress which will then generate a number of emotional and behavioral reactions among the employees, ultimately affecting their performance and service delivery. While we recognize that not all FSE will experience the same level of crowding from a given level of customer density, and that their emotional, cognitive, behavioral and even physical reactions will also vary, we, nevertheless, expect to find significant similar crowding effects across the whole sample.

Proposed Model Overview

Figure 1 presents the specific model employed in this study (Appendix 2.1). The model is based on the work of Lazarus and colleagues (Lazarus 1966, 1991; Lazarus and Folkman 1984; Lazarus and Launier 1978) and utilizes the Appraisal-Emotion-Coping framework that has been developed over two decades. This framework is especially relevant to examining crowding-employee relationships for four critical reasons: 1) it focuses on the person-environment *interaction*, 2) it goes beyond the typical Stimulus-Organism-Response (SOR) approach to explain the *processes* which generate the "outcomes", 3) it is *transactional* in nature, and 4) it helps explain *why* individuals can respond differently to the same environmental stimulus.

The underlying premise of the proposed model is that high customer density resulting in a crowding experience among the FSE, if appraised as stressful, can result in emotional and behavioral responses that might ultimately affect their performance and display of positive emotions. Based on the Lazarus framework, the FSE facing a situation with high customer density will make a cognitive appraisal of the situation as

being stressful, irrelevant or benign. The outcome of the appraisal processes will evoke relevant emotions (negative, neutral or positive) and generate potential coping strategies to create a more manageable environment. In the last stage of the process, coping outcomes are generated to influence employee performance and displayed emotions.

Crowding and Stress

The fundamental proposition of the Lazarus transactional model is that it is the *interaction of the person and environment* that creates a felt stress for the individual. "Stress is not a property of the person or of the environment, but arises when there is conjunction between a particular kind of environment and particular kind of person that leads to a threat appraisal." (Lazarus 1991b, p.3). This view is compatible with the crowding theory, which posits that high density will lead to the state of crowding but that this will differ across individuals. In other words, not all density situations are perceived as crowded for everyone. The Lazarus model brings in an explanation to this distinction. It posits that, upon encountering a new environmental situation, the individual will immediately get involved in cognitive appraisal.

There are two types of appraisals, primary and secondary, that might ensue. Primary appraisal concerns whether there is any personal stake in the encounter, and the individual evaluates the situation as being stressful, benign-positive or irrelevant. Stress occurs when "environmental forces or events called stressors threaten an organism's existence and well being and the organism responds to this threat" (Baum, Singer, and Baum 1981, p.4). A stressful encounter is considered threatening, harmful

or challenging to the individual's well-being. In the environmental psychology literature, there is strong evidence a stress arousal factor is associated with crowding (Worchel and Teddie 1976; Altman 1975; Valims and Baum 1973). In light of the above discussion, we hypothesize that:

H1: There is a positive relationship between the experience of crowding and stress.

Emotions

The Lazarus framework contends that an appraisal of stress in the encounter generates the potential for emotion and proposes that cognitive appraisal is both necessary and sufficient for the formation of emotions. Emotions experienced fall into three categories: positive, neutral, and negative (Izard 1977). However, recent research has shown that emotions can best be categorized in terms of two dimensions, positive and negative (Dolen, Ruyter, Lemmick 2004), the two sets of emotions which constitute the focus of this study. Negative emotions such as anger, anxiety, and sadness occur when individuals appraise a situation as stressful. Positive emotions such as happiness and joy result when situations are appraised as less stressful (Oatley and Johnson-Laird 1987). The intensity of these positive and negative emotions depends upon how stressful the individual appraises the event to be (Folkman and Lazarus 1985). This is in keeping with the crowding literature which posits that the crowding experience results in emotional as well as behavioral and cognitive outcomes (Evans and Lepore 1992; Baum and Paulus 1987; Stockdale 1978). Eroglu and Whiting (2004) have also found evidence to support this contention. Among the FSE of a fast food company and an

airport company, high levels of customer density instigated negative feelings among the service employees. Hence, we propose that:

H2: As stress increases, the FSE will experience stronger negative emotions and weaker positive emotions.

Coping

If indeed the individuals determine that they have a stake in the encountered situation, the theory predicts that they will engage in secondary appraisal in order to generate options to change the conditions perceived as stressful. Hence, this secondary appraisal focuses on the available coping options for altering the harm, threat or challenge so that a more manageable environment is created. Coping mechanisms are the psychological and behavioral moves undertaken to manage the demands of the emotion-evoking situation (Lazarus and Folkman 1984). The emotions then influence the coping process.

Lazarus and Folkman (1984) define coping as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p.141). There are two types of coping responses: problem focused coping and emotion focused coping. Problem focused coping is obtaining information and performing actions in order to change or reduce the problem or situation, such as making a plan of action, trying to find out more about the situation or concentrating on the next step. Emotion focused coping is regulating the emotions to overcome or decrease the impact of the situation. Examples of this are engaging in distracting activities, seeking emotional support, denial

and mental and social disengagement. The predictions of the Lazarus model on coping are in keeping with those of the crowding literature and the Stimulus-Organism-Response models. For example, Zajonc's social facilitation theory (1965) posits that higher number of individuals increase arousal and lead to higher levels of crowding stress while the adaptation level theory (Helson 1964; Wohlwil 1974) of crowding contends that, in such circumstances of undesirably high levels of crowding, individuals will develop coping mechanisms to reduce the amount of stress in the environment. For example, Miligram (1970) contends that one adaptive mechanism invoked by stimulus overload from the environment is that a decrease in the concern for and involvement with others. Note that in both the Lazarus model and crowding literature, coping strategies are deemed essential only if the situation is appraised as stressful and negative. Hence, the theory predicts that those FSE which experience crowding stress will develop both problem focused and emotion focused coping strategies.

While both problem focused and emotion focused coping occur together during stressful encounters (Folkman and Lazarus 1980, 1985; Strutton and Lumpkin 1993). Generally only one type of coping, such as problem focused, predominates within an individual (Parkes 1990). Both problem and emotion focused coping may reduce stress because coping, regardless of the strategy, does usually ameliorate stress. However, the effectiveness of these coping responses depend on the type of coping used. Problem focused coping, which emphasizes on what can be done about the stressor, has been shown to be more effective. For example, Strutton and Lumpkin (1994) found problem focused coping to more favorably associated with higher sales presentation effectiveness. Latack (1986) showed that individuals engaging in problem focused

coping were less likely to report job related anxiety, job dissatisfaction, and to leave the company. Emotion focused coping, which attempts to decrease or eliminate the emotional distress caused by a stressor, has been shown to be less effective (Strutton and Lumpkin 1994). Since emotion focused coping involves avoidance, distancing, or escaping from the stressor (Silver and Wotman 1980), individuals that are disengaged from the stressor may not focus on their performance and the customer they are serving. Thus, this type of coping does little to help solve the stressful situation and is deemed to be less effective.

Job Performance

The last portion of the model proposes relationships between coping strategies and two outcome variables: performance and displayed emotions. Performance and crowding have been extensively researched within psychology. Many early scholars on crowding found poor performance after exposure to high density (e.g., Dooley 1974; Sherrod 1974; Evans 1975). More recent studies have also examined this relationship and found a negative relationship between crowding and task performance (Bruins and Barber 2000; Paulus and Matthews 1980; Langer and Saegert 1977). Complex task performance has also been shown to be negatively affected by crowding (Sinha and Sinha 1989; Sungha and Satsangi 1986). Additional studies on detriments in task performance due to environmental conditions and crowding are many such as effects on job experiences and interpersonal relations (Oldham and Rotchford 1983), job satisfaction (O'Brien 1982), intention to quit (Leather, Pyrgas, and Beale 1998), and job performance (Sundstrom, Town, Rice, Osborn, and Bill 1994).

Unlike past studies of crowding that focused on task performance, this study will emphasize the larger construct of *job* performance which is more relevant to service quality and customer satisfaction. The performance of service employees is a critical component of service quality and customer satisfaction (Bowen and Schneider 1985, Groonos 1983; Bitner 1990). Customers base their perception of service quality on two aspects: (1) the employee's performance during the service interaction and (2) the outcome that they receive from the service (Mangold and Babakus 1991). It is the employee performance aspect that will be assessed in this study. Employee performance is defined as how service is delivered (Singh 2000). The dimensions of this definition include both the functional (core) and relational (soft) aspects of performance (Iacobucci and Ostrom 1993). The functional aspects include items such as quality of work accomplished, frequency of errors, and amount of work completed. The relational aspects include personalized attention, listening to the customer, and explaining features.

Employee performance greatly affects how customers perceive the level of service they receive from the organization (Parasuraman. Zeithaml, and Berry 1985) and their satisfaction with it (Crosby and Evans 1990). According to Hartline and Jones (1996) employee performance may be the most important intrinsic cue in service quality assessments. Studies have shown that friendliness, enthusiasm, and attentiveness of service employees positively affect perceptions of service quality (Hartline and Ferrell 1996; Bowen and Schneider 1985; Rafaeli 1993). Within retail stores, good performance from employees are shown to result in higher perceptions of service quality (Darden and Babin 1994; Sweeney, Johnson, and Armstrong 1992). Poor

employee performance has also been shown to cause negative results such as switching behavior and customer complaints (Keaveney 1995; Lewis 1993). Employee performance plays a critical role in of the service encounter.

Employee performance can be affected by job stressors, such as crowding (Eroglu and Whiting 2004). Several studies have shown that job stressors influence employee performance (e.g., Behrman and Perreault 1984; Singh and Goolsbury 1994). Work stressors have also been found to have a negative influence on service quality (Varca 1999). These appraisals of stress are shown to negatively impact employees. In Varca's (1999) study, he found that lower performers reported higher levels of job stressors and that workers who saw the environment as less stressful were evaluated as more effective by their supervisors. Another study found that stress causes negative affect and lowers positive job appraisals (Babin and Boles 1998). These findings suggest that work stressors cause negative emotions and decrements in job performance. It is likely that these decrements in job performance occur because employees have not been able to develop effective problem focused and emotion focused coping strategies. As discussed previously, problem focused coping is associated with favorable outcomes while emotion focused coping has been shown to be less effective and detrimental to performance. Thus we propose that:

H3a: Higher the use of problem focused coping, higher the FSE's performance.

H3b: Higher the use of emotion focused coping, lower the FSE's performance.

Displayed Emotions

Similarly, individuals are found to elicit reduced helping behavior and more social withdrawal under high density conditions (Evans, Rhee, Forbes, Allen, and Lepore 2000; Regoeczi 2003). The latter has been documented by several indices including less eye contact, greater interpersonal distancing and less initiation of conversation (Baum and Paulus 1987; Sundstrom 1978). Furthermore, such social withdrawal is expected to reduce sensitivity to others' needs (Baum and Paulus 1987). These indices of verbal and non-verbal cues are akin to the construct of displayed emotions in the organizational behavior literature. In contrast to "felt" emotions which we discussed earlier, displayed emotions are those expressed by the employee and stem from organizational rules and norms for appropriate behavior during a service encounter (Pugh 2001). They include both verbal and nonverbal communication such as facial expression, bodily gestures, tone of voice, and language (Matilla and Enz 2002).

Displayed emotions are important because of their impact on the customer (Rafaeli and Sutton 1989). The display of positive emotions has been empirically shown to affect customer positive affect and evaluation of service quality (Pugh 2001). According to Pugh (2001), customers catch the affect of employees through the emotional contagion process. Research on emotional contagion has shown that "exposure to an individual expressing positive or negative emotions can produce a corresponding change in the emotional state of the observer" (Pugh 2001, p.1020). Hochschild (1983) notes that many customers expect good cheer (positive displayed emotions) from service employees such as customers of Nordstrom's (Peters and Austing 1985), Disneyland (Tyler and Nathan 1985), and Delta Air Lines (Hochschild

1983). Both sales and customer loyalty have been shown to increase when employees display good cheer (Ash 1984, Hochschild 1983).

The proposed model focuses on display of *positive* emotions that are defined as presenting "a warm but outward demeanor during transactions with the customer" (Pugh 2001, p.467) such as greeting the customer, smiling, making eye contact, and thanking the customer (Sutton and Rafaeli 1988). Rafaeli and Sutton (1990) emphasize the two components of positive displayed emotions: attending and pleasantness. Attending refers to the act of recognizing and fully assisting as opposed to ignoring the customer. Pleasantness refers to "the degree to which an employee manifests a generally positive attitude or the extent to which the employee's behavior toward a customer encourages friendly interaction" (Rafaeli and Sutton 1990, p.630).

The potential link between crowding and displayed emotions is supported by research evidence. Sutton and Rafaeli (1988) found that store pace is a cause of expressed emotions: clerks in rapidly paced stores with high sales and long lines were less likely to display positive feelings than clerks in slow paced stores. In a replication of this study, the researchers found that busyness is negatively related to cashier's displayed positive emotions (Rafaeli and Sutton 1990) The study provided additional evidence that service employees are less likely to display "good cheer" during busy times rather than slow times.

One interesting feature of displayed emotions is that they are generally governed by norms or rules about what emotions must be expressed during a service encounter (Sutton and Rafaeli 1988). The emotional style of service employees during a service encounter is an integral part of the service itself (Zammuner, Lotto, and Galli 2003; Hochschild 1983). Regardless of the type of emotions they experience, employees are expected and trained to regulate their internal emotions in order to comply with job requirements termed “emotional labor” (Hochschild 1983). According to Sutton and Rafaeli (1988) “there is an imperfect match between the emotions people feel and the emotions people express on the job because employees are often expected to display emotions that are unrelated or even in conflict with their true feelings” (p.462).

Employees must regulate their emotions and expressions in order to be congruent to the display rules or norms (Elkman 1980). However, this may not always be successfully accomplished. Although employees can be taught to express feelings they do not feel, inner emotions do predict emotions that are displayed during a service encounter (Rafaeli and Sutton 1990). A meta analysis by Ambady and Rosenthal (1992) and a study by Elkman (1985) have shown that people often leak their true emotions even attempting to disguise them. These leaks usually occur in channels that are less controllable such as facial cues and vocal expression (Ambady and Rosenthal 1992). It is likely that these leakages occur because individuals have not been able to develop effective problem focused and emotion focused coping strategies. Emotion focused coping has been shown to be less effective and thus leakages of true emotions may occur. With problem focused coping, employees are more in control and thus may

more effectively display the company's preferred emotions. We, therefore, propose the following:

H4a: Higher the use of problem focused coping, the greater the likelihood of FSE to show displayed positive emotions to the consumer.

H4b: Higher the use of emotion focused coping, the lower the likelihood of FSE to show displayed positive emotions to the consumer.

Chapter 3

METHODOLOGY

The previous chapter presented the hypotheses of the study. This chapter discusses the methodology. The chapter is divided into five sections: (1) the exploratory study, (2) study design, (3) development of experimental tools, (4) the pretest, and (5) the experiment.

Exploratory Study

Given the lack of literature on employee responses to crowding in the marketing literature, an exploratory research was conducted with the frontline employees of two different service organizations: a fast-food company and an airport company. The aim of this study was to understand the dynamics of the phenomenon and validate our conceptual model. Specifically, we sought (1) to identify the critical variables in developing the theoretical basis of the proposed study since little prior research has been done on the topic (Desphande 1983; Peter and Olson 1983) and (2) to develop a sense for appropriate methodology and measures.

A total of 40 semi-structured interviews were conducted with the employees of two different service organizations. A convenience sample was used for each service organization. With the fast food company, 15 interviews were conducted at three different restaurants of the chain located in the suburbs of a major city. All of the interviewees were full time employees that held positions that required customer contact. They were asked to first think about a recent situation at work when the restaurant was crowded with many customers waiting in line and were then asked 15

open-ended questions about this situation. Interviews were conducted in the backrooms of the restaurants and each lasted about thirty minutes.

For the second corporation, a total of 25 interviews were conducted with full time employees holding three different positions at one large airport. The same procedure and questions employed in the fast food interviews were used in the airport case. Interviews were conducted at the airport and each lasted about thirty minutes.

The qualitative methodology was very useful for two reasons. The interviews, which were privately conducted, disclosed a great range of emotions and opinions with specific anecdotes allowing us to get a very “naked” and vivid picture of the phenomenon. The findings allowed us to identify a whole range of variables and mechanisms that were then used to identify the relevant theoretical base as well as the method and measures of the proposed study. Appendix 3.3 summarizes the findings of this study.

Study Design

Study hypotheses were tested in a laboratory experiment. An experiment was conducted to determine if crowding influences appraisals, emotions, coping responses, and employee outcomes of frontline service employees (FSE). An experimental design was preferred for this study since it enabled the manipulation of the independent variables and provided control over potential extraneous variables. It also allowed us to use the FSE as subjects without interfering with their job routines.

Respondents were exposed to one of two (high/low density) treatments. Human (customer) density was manipulated via videos and scenarios that simulated a service encounter at an airport. The subjects' crowding levels and other dependent measures were recorded. The simultaneous use of scenarios and videotapes has been successfully employed in crowding literature (Eroglu and Machleit 1990; Hui and Bateson 1991; Bateson and Hui 1992). This method has been shown to be a valid and practical way to explore crowding, particularly in commercial domains where exploration of the crowding phenomenon is particularly difficult without disrupting the customers and employees (Eroglu and Machleit 1990; Hui and Bateson 1991; Bateson and Hui 1992).

Sample

Data was collected from 200 frontline service employees at an airport. The sample was a convenience sample since it consisted of employees who worked at the airport and who were willing to participate in the study in return for an award gift certificate.

Experimental Procedure

The experiment took place in a designated meeting room at the airport. Employee groups of 5-10 were invited at intervals to the experiment site, a conference room near the service area. The experimental procedure involved viewing a video and reading a short scenario both of which were intended to simulate the service environment where subjects normally work and to manipulate a certain level (high or low) of customer density. Subjects were then asked to complete a survey by trying to predict the emotions and behaviors of a coworker working in the situation depicted by

the video and the scenario. They did this by answering a number of survey questions about what the coworker would feel and do in the described situation. The use of projective techniques and hypothetical figures in scenarios is recommended for reducing social desirability effects and problems due to individual differences (Havlena and Holbrook 1986). In their crowding study, Hui and Bateson (1991) found that subjects complained about described situations that would never happen to them and that it was difficult for them to judge their reactions to the situations. The experiment was conducted in sessions of groups of 5-10 subjects at a time, and lasted about 40 minutes. Subjects were debriefed at the end of the session and were given a gift certificate.

Development of Experimental Tools

Videos

Two experimental videos were created to manipulate two different levels of customer density (high and low). The footage for these two videos was recorded on site at the airport by a professional digital media specialist. Security clearance was granted by the company participating in this research project. Footage for the videos was recorded during July 2004 which was a high passenger volume month for this airport. The recorded service area was the space directly in front of where the service employees worked as well as some general spaces near this area in order to give the fullest view of the area and its customer density. Multiple shots of the service area were taken at different times (e.g., 6am, 10am, and etc.) and on different days (e.g., Tuesday and Wednesday).

From the video footage, we selected ten similar background shots of high density and low customer density. The goal of this was to depict the same scenes or service areas but with two different customer density levels. The ten shots for each of the two videos were then arranged in the same order so that respondents seeing either of the two videos would be exposed to the same sequence of background images. The ten shots for each video were then merged together to create a four minute video clip. The two final videos that were created depicted the same service areas but with two different customer density levels.

After developing the two final videos, the next step was to use a procedure from McClelland and Auslander (1978) in which subjects rate the video clips on the extent to which they instigate feelings of crowding. Based on this procedure, thirty three subjects rated one of the two videos on the extent to which the video instigated feelings of crowding. The crowding responses of the high customer density video group were significantly different ($p<.001$) from the low customer density group.

Scenarios

The next step was to create written scenarios. The scenarios were used along with the videotapes to simulate the service encounter context and to manipulate the high and low customer density. During the experiment, respondents were instructed to read the scenario and imagine themselves and their fellow coworkers working in the environment shown on the screen and described in the scenario.

The written scenarios were created with the help of two service employees (see Appendix 3.1). The goal was to simulate a realistic service environment where density

could be high or low. Each of the two scenarios begins with statements about the passenger volume that is predicted for that day. The time frame for the scenario is the beginning of the shift. However, the scenarios also include statements such as looks up occasionally throughout the shift which suggest that the scenario will continue throughout the shift. The two scenarios are identical except for the density variable which is manipulated by two statements in each scenario. The high density statements are “today is a heavy day”, “there are over 100,000 passengers”, “sees the rows and rows of passengers waiting in line”, “the number of passengers waiting in line rapidly increases until the floor can no longer been seen because of all the passengers”, and “sees the unending flow of people grow and grow.” The low density statements are “today is a light day”, “there are only 60,000 passengers”, “sees the number of passengers waiting in line is pretty slim”, “there are only a few passengers in each line”, and “sees a light but steady flow of people in line.”

The two scenarios were then examined by three frontline service employees. Their comments and recommendations were used to refine the two final scenarios (high and low) used in the experiment (Appendix 3.1). The scenarios were tested and validated during the pretest stage which will be discussed later.

Questionnaire

The survey instrument was presented to subjects in a questionnaire booklet (see Appendix 3.2). There were two versions of the questionnaire. One questionnaire contained the high density scenario while the second questionnaire contained the low density scenario. Each questionnaire consisted of instructions, a written scenario, and the scale items and questions. The entire questionnaire was twelve pages long and took respondents about forty minutes to complete.

Most of the items in the questionnaire were developed from existing scales. They were designed to measure customer density, perceived crowding, stress, internal emotions, coping, performance, displayed emotions, and personality.

The following scales and items were used to measure the previously listed constructs. As described previously, **customer density** was manipulated with the videos at two levels, high and low. **Perceived crowding** was assessed by using a scale adapted from Eroglu and Machleit (1990), Webb and Worchel (1993), and Baum and Davis (1976) (Appendix 3.2, p139. items1-7). **Stress** was measured by a scale adapted from Siddiqui and Pondey 2003 and with an open ended question (Appendix 3.2, p.139 items 8-13). **Internal Emotions** were measured via Izard's (1977) Differential Emotions Scale (DES) and via Richins' (1997) scale (Appendix 3.2, p. 144-145, items 1-42). Izard's (1977) scale of emotions has been used successfully in previous crowding research by Machleit, Eroglu, and Mantel (2000). The scale is notable especially because of its inclusion of positive as well as negative emotion types. Richins (1997) scale was also used to measure some additional emotions. **Coping** was

measured with two scales: (1) an adapted version of the Ways of Coping Scale (Folkman, Lazarus, Dunkell-Schetter, and DeLongis 1986) and (2) an adapted version of Latack's (1986) Coping with Job Stress scale (Appendix 3.2, p.145-146, items 1-35). **Job performance** was measured by a modified scale of items from Sundstrom, Town, Rice, Osborn, and Bill (1994) (Appendix 3.2, p. 143, items1-8). **Displayed Emotions** was captured by scale created from Pugh (2001) and Rafaeli and Sutton (1990) (Appendix 3.2, p.141, items 1-7). **Encounter Satisfaction** was measured by a scale from Dolen, Ruyter, and Lemmick (2004) (Appendix 3.2, p.142, items 1-6). **Customer service** was measured by a modified scale of Bell and Mengue (2002) and Liao and Chuang (2004) (Appendix 3.2, p140-141, items 1-16 and p.143, items 1-6)). **Personality** was measured via a scale created by Hurley (1998) (Appendix 3.2, p.147, items 1-8) which has been created specifically for service providers. Finally, relevant demographic, lifestyle and occupational information was also gathered such as gender, year of birth, number of years with company, number of years in current job, what type of environment the individual has lived in for majority of life (e.g., rural, suburban, urban), and ethnic background (Appendix 3.2, p.148, items 1-7). Realism questions were also asked to ensure that the scenario and video were realistic to their work environment (Appendix 3.2, p.148, items 8-10)

Pretest

Two different types of pretests were conducted. An informal pretest and a formal pretest were conducted before the final experiment. The informal pretest which consisted only of the scenario and questionnaire was performed on a very small sample of airport employees in July 2004. The informal pretest helped to make corrections in question wording, content and clarity of scenarios.

The formal pretest was conducted in August 2005 on a sample of forty airport employees. These employees performed the same role and job functions as those who were part of the final survey. The formal pretest included the complete experimental procedure with the video, the scenario, and questionnaire. The purpose of this formal pretest was: (1) to detect flaws in the experimental tools and procedures, (2) to identify items in the questionnaire that were difficult to understand, ambiguous, and/or irrelevant to the employees, (3) to assess the employees' ability to role play when answering the questionnaire, (4) to assess the employees' perception of crowding from the scenarios and videos, and (5) to get feedback on the length the experiment. The last point was particularly important because of the long length of the survey and the possibility of subject fatigue (Sawyer 1975).

The pretest helped to refine the experimental procedures and the survey instrument, particularly with the wording, layout, and sequencing of the survey. For example, the pretest identified that more comprehensive instructions and periodic instructions needed to be given to the employees during the experiment. With the survey, the pretest identified potential respondent fatigue and resulted in reducing the

number of coping items from forty to thirty five items. The location of the emotion and coping items in the survey were changed and some of the wording was changed based on employee responses. In particular, the items measuring stress were simplified because of employee confusion. The layout of the survey was also altered in order to create a smooth and flowing questionnaire. With this layout change, the length of the survey was reduced from thirteen pages to twelve pages. A pamphlet style was adopted and the paper changed to a lighter weight material with different colors for each type of scenario (green for high crowding and yellow for low crowding).

Additional findings from the pretest showed that there were no issues with the employees' ability to role play and answer questions about their fellow employees. A series of validity checks on the pretest data showed that the data was internally consistent. Finally, the pretest data demonstrated that the perception of crowding was significantly different between the high and low groups thus demonstrating that density and crowding had been successfully manipulated.

The pretest was of extremely useful because it helped validate many issues, to calibrate the experimental procedures, and to create a stronger and more reliable survey instrument.

The Experiment

Subjects and Setting

A convenience sample was used in this study. The sample was comprised of frontline service employees at a U.S. airport who were willing to participate in the study in return for refreshments and an award gift certificate. 204 subjects participated in the study. All were frontline service employees who worked at one airport. There were 74 males, 127 females, and 3 respondents who didn't report their gender. There were 96 respondents from the AM shift and 108 respondents from the PM shift. The respondents' ages ranged from 22 to 68 with 40 being the average age.

Groups of employees (approximately about 5-10) were invited at intervals to the experiment site, a conference room near the service area. In order to eliminate any dependencies between successive observations (i.e., subjects), assignments of the observations to the cells of the experimental design were randomized.

Subjects were not told of the purpose of the study until they were finished with the experiment. Subjects who participated in the study were asked not to discuss any details of the survey with other employees until completion of the entire research project.

The experiment site was a conference room located near the service area. The conference room contained: (1) a long rectangle table with 10-15 chairs, (2) a laptop, a multimedia projector, and a screen, and (3) a switch for turning off the lights for the video clip.

Experimental Procedure

Subjects were greeted by the researcher as they walked into the experiment room and were told to help themselves to some refreshments (orange juice and biscuits for the AM shift and pizza and sodas for the PM shift). After the respondents got their refreshments and sat down, the researcher passed out the questionnaire booklet, a pen, and a sandwich gift certificate. The researcher then gave the following announcement.

> Hello. My name is Anita Whiting and I am a PhD student at Georgia State University working on my dissertation. Today I am here asking for your help on the last part of my degree which is my dissertation. Please help me graduate by filling out my survey.
>
> The purpose of my study is to investigate how work environments affect employees. In particular I am looking at how work environments affect employees' thoughts and behaviors. Today, I am here to survey you so that I can better understand the influences of work environments.
>
> Before we begin, there are a couple of statements that I need to make.
>
> 1. I want to make sure everyone knows that I am not a consultant. I am only a college student trying to graduate.
>
> 2. This is not a "Company X" initiated project. This is a school project. I approached "Company X" and asked them if I could survey their employees.
>
> 3. This is not a test of any sort. There are no right or wrong answers.
>
> 4. I want to stress that all responses are completely anonymous and I am only going to look at the overall sum of the data. You are not putting your name on the booklet and I am not keeping a list of employee names.
>
> 5. Please be very honest in your assessments. It is critical that you are completely honest.
>
> 6. In the video, you may see familiar faces or you may see yourself in the video. Please do not focus on yourself or your coworkers but play close attention to the things that are going on in the environment.

7. Last, please do not discuss the video or the survey until I have completed my research project.

Now please look at page one of your pamphlet. Please read the directions silently while I read them aloud.

After the researcher finished reading page one and the scenario on page 2, the four minute video clip was shown to the respondents. After watching the video, the researcher read the instructions on the bottom of page 2. The respondents were then told to proceed to the next page and complete the survey. The researcher stressed the importance of thinking back to the scenario they read and to the video clip they saw when answering the questions. The researcher continued to periodically remind the respondents to think back to the video and to the scenario when completing the questionnaire.

The entire procedure took about 40 minutes. As employees turned in their booklets, the researcher thanked the employees for their help and asked them if they had any questions. The most frequently asked question was when the video clip was taken.

Summary

This chapter presented the methodology of this research project. First, the qualitative study and its importance were discussed. Next, the study design was discussed. Third, the development of the videos, the scenarios, and the questionnaire were presented. Fourth, the pretest and its findings were discussed. Last, the details of the experiment were discussed. The next chapter presents the analysis of the data and findings of the study.

Chapter 4

DATA ANALYSIS AND FINDINGS

Introduction

The preceding chapter discussed the exploratory study, the research design, the pretest, and the final experiment. This chapter presents the analysis of the data. This chapter begins with an examination of the reliabilities of the measures used in this study. Next the chapter discusses the tests of the hypotheses and the findings. Last, a summary of the findings of this study are discussed.

Variables

As discussed in chapter two, there were six constructs in the model: (1) perceived crowding, (2) stress, (3) internal emotions, (4) coping, (5) job performance, and (6) displayed emotions. Each of these variables was measured by multiple items from existing scales. Because multiple items were used, the reliability of the measures in this context must be examined. The following section discusses this procedure.

Reliability of the Variables

According to Churchill (1979), “a measure is reliable to the extent that independent but comparable measures of the same trait or construct of a given object agree” (p.65). In more general terms, reliability refers to the internal consistency of the items and to the predictability and stability of the results. Reliability is a prerequisite for validity and therefore must be assessed before validity. When assessing reliability, a coefficient alpha should be calculated for the items measuring each variable. A high coefficient alpha indicates good reliability. The coefficient alphas will be calculated for each of the six variables.

Before discussing these analyses, it is important to note that the coping measures are formative measures, not reflective measures. With formative measures, the coefficient alphas should not be calculated. Formative measures such as coping do not have high correlations or high reliabilities as is evident in the literature (Folkman et al, 1986, Latack 1986). With the coping measures such as escape/avoidance coping, the statements will not be highly correlated because one individual may strongly use one avoidance coping strategy while hardly ever using another. Many individuals may use avoidance coping but their strategies may be completely different thus causing low reliability. Given that the coping items are formative, the reliabilities are not provided. Table 4.1 presents the coefficient alphas for the other constructs.

Table 4.1 Reliability Coefficients of the Scales

Crowding Scale	**Cronbach's Alpha = 97.7**
1. How crowded would Pat feel by the number of customers in the lobby area?	
2. How confined would Pat feel?	
3. How restricted would Pat feel?	
4. The airport seemed very crowed to Pat.	
5. The airport was too busy.	
6. There were many passengers around the service area.	
7. Pat would feel that there are too many people around the service area.	

Stress Scale	**Cronbach's Alpha = 97.9**
1. Pat would feel tension by the number of passengers around the service area.	
2. The number of passengers around the service area would be a source of distress for Pat.	
3. The number of passengers around the service area would be a source of anxiety for Pat.	
4. Overall, Pat would feel very stressful in the situation described and shown in the video.	

Displayed Emotions	**Cronbach's Alpha = 93.1**
1. Greet every customer with a "hello" or "How are you today?"	
2. Address each customer by his/her nane during the service transaction.	
3. Keep a smiling/pleasant face to every customer during the service transaction.	
4. Keep a steady eye contact with each customer, regardless of customer reciprocation.	
5. Thank or offer polite verbal comment to every customer at the end of the transaction.	
6. Manifest a positive attitude that is encouraging and friendly to every customer.	
7. Converse or chat with every customer on issues not directly relevant to the transaction.	

Job Performance	**Cronbach's Alpha = 93.8**
1. Amount of work accomplished today.	
2. Quality of work accomplished today.	
3. Ability to not make errors today.	
4. Taking responsibility today.	
5. Creativity for today.	
6. Getting along with others today.	
7. Dependability for today.	
8. Overall performance today.	

IZARD EMOTIONS	**Item 1**	**Item 2**	**Item 3 & 4**	**Cronbach's Alpha**
1. Joy	Happy	Delighted	Joyful	**95.80**
2. Sad	Discouraged	Sad	Depressed	**88.80**
3. Interest	Alert	Attentive	Concentrating	**85.00**
4. Anger	Mad	Angry	Irritated	**93.90**
5. Shy	Shy	Ashamed	Bashful	**80.20**
6. Guilt	Guilty	Blameworthy	Regret	**77.70**
7. Disgust	Disgusted	Feeling of distaste	Unpleasant	**91.90**
8. Contempt	Disregard	Scornful	Defiant	**91.60**
9. Surprised	Astonished	Surprised	Amazed	**86.70**
10 Fear	Afraid	Anxious	Threatened & Intimidated	**85.40**

RICHINS EMOTIONS	**Item 1**	**Item 2**	**Item 3**	**Cronbach's Alpha**
1. Shame	Humiliated	Embarrassed		**73.80**
2. Worry	Nervous	Worried	Tense	**89.20**
3. Anger2	Irritated	Frustrated		**94.00**
4. Peacefulness	Peaceful	Calm		**90.40**
5. Contentment	Fulfilled	Contented		**91.30**

In summary, there were no major issues with the coefficient alphas. No items were discarded. Overall, the measures had excellent reliabilities.

Realsim Checks

Realism checks were conducted for the videos and the written scenarios. The following paragraphs discuss these analyses.

Realism checks were conducted for each treatment group. The respondents of both treatments were asked to indicate (1) how realistic the situation was in comparison to their work environment, and (2) to rate the possibility of encountering situations like the one described in the scenario and video. The scale for these two questions ranged from 1 to 9 with 1 representing “Very Much” and 9 representing “Not at All”. The mean score for the realism of the high crowding treatment was 1.60 (1 = Very Much). Approximately 92% of the respondents rated the scenario and video as a 1, 2, or 3 on the realism scale, thus demonstrating that most respondents felt that the crowding scenario was realistic to them. The mean score for the realism of the low crowding treatment was 3.97 on a 1 to 9 scale. Approximately 56% of the respondents rated the question as 1, 2, 3, or 4, on a 9 point scale; thus indicating that the scenario was perceived to be realistic. The low crowding treatment was not rated as highly on the realism scale as the high crowding treatment but it was still rated relatively high (1.60 vs. 3.97).

The second realism question was analyzed next. This question asked respondents to rate the possibility of encountering a situation like the one described in the scenario and video. For the high crowding treatment, the mean score was 1.31 (1 = Very Much and 9 = Not at All). Ninety-eight percent of the respondents rated the scenario as 1, 2, or 3 on this question. Both of these analyses confirm that

the high crowding treatment was possible in their work environment. The mean score for the low crowding treatment was 2.43 (1 = Very Much and 9 = Not at All). Over eighty percent of the respondents rated this question as 1, 2, or 3.

In summary, analyses on the two realism questions showed that both the high crowding and the low crowding treatments were realistic and possible to encounter in their work environment.

Tests of the Hypotheses of Study

As described in Chapter 2, there are four major hypotheses to be evaluated in this study. The statistical techniques used for testing these hypotheses are ANOVA and Regression. Each of these hypotheses will be analyzed and evaluated in the following sections.

Hypothesis 1

The first group of statistical analyses examined crowding and its effects on stress among FSE. **H1 predicted that there is a positive relationship between crowding and stress.** As discussed in Chapter 3, crowding was manipulated and measured. Several statistical tests and analyses were used to test this hypothesis. The first analysis investigates the differences in stress perceptions between the different treatment groups and the second analysis assesses crowding perceptions and their impact on stress.

Prior to the actual testing of this hypothesis, several preliminary tests were conducted. The assumptions for ANOVA were tested on the dependent variable stress. The only significant violation found was unequal variances. However, this finding is not problematic for ANOVA analyses because (1) the sample sizes are large (n=204) and (2) relatively equal (103 vs. 101). The significant differences in variance for stress in the two treatment groups is an interesting finding and provides support for the construct called tolerance of crowding (Machleit, Eroglu, and Mantel 2000). The analysis shows that there is significantly more variance in the high crowding treatment than in the low

crowding treatment ($p < .001$). The standard deviation for the high crowding treatment is 1.5 and the standard deviation for the low crowding treatment is 1.0.; thus, the FSE's variance or range in stress levels is wider in the high crowding treatment than in the low crowding treatment. This finding shows that individuals' stress levels vary a great deal when in the same crowding environment and thus suggests that there may be underlying causes for why high crowding stresses some individuals more than others.

Since the significant differences in the variances were not problematic, ANOVA was used to test hypothesis H1, i.e., existence of significant differences in stress levels among the two *treatments*: (1) high crowding and (2) low crowding. The dependent variable stress was measured by a scale of 1-7 (1 = "Strongly Agree," 7 = "Strongly Disagree"). The mean stress score was 2.72 for high crowding treatment and 6.32 for low crowding treatment. The results of the ANOVA and the mean plots are shown below in Table 4.2 and Exhibit 4.1.

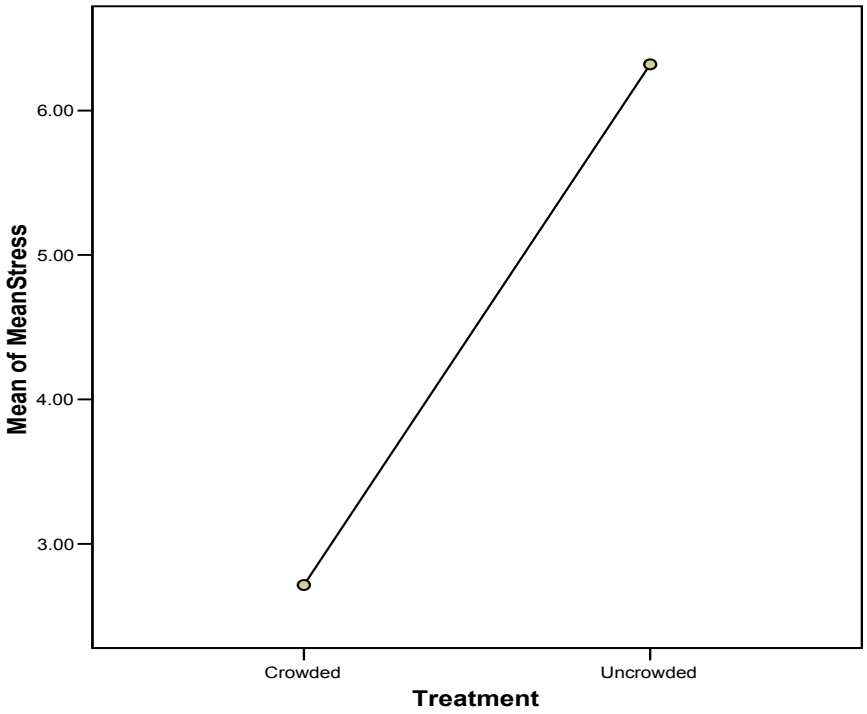
Table 4.2
ANOVA Table of Treatment X Stress

ANOVA

Mean Stress

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	649.801	1	649.801	398.161	.000
Within Groups	323.138	198	1.632		
Total	972.939	199			

Exhibit 4.1
Plot of Stress Scores for Treatments



The ANOVA results demonstrate that stress levels of FSE significantly differ under high (2.71) and low (6.32) crowding ($p<.001$). The difference in the cell means was in the expected direction. The high crowding treatment produced higher levels of stress than the low crowding treatment thus supporting H1.

The next set of analyses also investigated H1, but this time by using crowding *perceptions* instead of treatments. Simple regression analysis was used for this analysis using crowding perceptions as the independent variable and stress was the dependent variable. Crowding perceptions were measured by a scale of 1-7 (1 = “Strongly Agree”, 7 = “Strongly Disagree”). As discussed in the previous analysis, the dependent variable

stress was measured by a scale of 1-7 (1 = “Strongly Agree”, 7= “Strongly Disagree”). Before the results were analyzed, the appropriateness of the regression model was analyzed via examination of the residual errors. Scatter plots and histograms (Appendix 4.1A) of the predicted values versus residuals demonstrated that there were no model violations. The error terms of the regression analysis were found to be normally and independently distributed. Therefore, a simple regression analysis was conducted to test the relationship between crowding and stress. The mean score for crowding perceptions was the independent variable and the mean stress score was the dependent variable (Table 4.3).

Table 4.3
Regression Table for Crowding Perceptions and Stress

Model Summary[b]

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	.911[a]	.830	.830	.90943	.830	955.195	1	195	.000	2.006

a. Predictors: (Constant), Mean Crowding

b. Dependent Variable: Mean Stress

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	790.008	1	790.008	955.195	.000[a]
	Residual	161.278	195	.827		
	Total	951.286	196			

a. Predictors: (Constant), Mean Crowding

b. Dependent Variable: Mean Stress

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.074	.129		8.301	.000
	Mean Crowding	.848	.027	.911	30.906	.000

a. Dependent Variable: Mean Stress

From the tables above, the adjusted R^2 score is .830. This statistic illustrates that crowding perceptions explain 83 percent of the variance in the measurement of stress. When discussing variance explained, it is important to note that none of the constructs measured including stress were perfectly reliable. Therefore the variance explained by the predictor variables refers to variance explained in the measurement of the construct

and not the underlying construct. This phrase will be used throughout the data analysis section.

Referring to the table above, the standardized beta coefficient is .911 and it is significantly different from zero ($p<.001$). The positive value of .911 illustrates that crowding has a positive relationship with stress. The standardized beta coefficients of .911 illustrates that crowding has a large and positive relationship with stress. Both the ANOVA with the treatment as the independent variable and the regression analysis with crowding perceptions as the independent variable found that as crowding increases, stress increases. Therefore H1 is supported.

Hypothesis 2

The next set of statistical analyses will examine stress and its effects on FSE's emotions. H2 predicted that **as stress increases, the FSE will experience (a) stronger negative emotions and (b) weaker positive emotions**. There were four positive emotions and nine negative emotions measured. Stress is regressed on each of the positive and negative emotions separately via simple regression analysis.

Positive Emotions

H2b predicted that there is a negative relationship between stress and positive emotions. H2b stated that **as stress increases, the FSE will experience weaker positive emotions** (joy, interest, peacefulness, and content).

Before the regression analyses were conducted, each of these emotions were tested for the assumptions of regression (Appendices 4.1B, 4.1C, and 4.1D). No significant departures from these assumptions were found.

Joy. H2 predicted that as stress increased the FSE will experience weaker joy emotions. This relationship was evaluated using simple regression with mean stress as the independent variable and mean joy as the dependent variable. The results of the regression are shown on Table 4.4.

Table 4.4
Regression Table for Stress and Joy

Model Summary[b]

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	.674[a]	.454	.451	1.31451	.454	161.123	1	194	.000	1.983

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Joy

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	278.413	1	278.413	161.123	.000[a]
	Residual	335.222	194	1.728		
	Total	613.634	195			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Joy

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.027	.217		27.825	.000
	Mean Stress	-.544	.043	-.674	-12.693	.000

a. Dependent Variable: Mean Joy

From the tables above, the adjusted R^2 score is .451. This statistic demonstrates that stress explains 45.1 percent of the variance in the measurement of joy. The standardized beta coefficient is -.674 and it is significantly different from zero ($p<.001$). The negative value of -.674 illustrates that stress has a negative relationship with joy. This finding demonstrates that as stress increases, joy decreases. Thus, for the positive emotion of joy, H2B is supported.

Interest. H2 predicted that as stress increased the FSE will experience weaker interest. The results of the regression are shown below in Table 4.5.

Table 4.5
Regression Table for Stress and Interest

Model Summary[b]

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	.346[a]	.120	.115	1.17568	.120	26.611	1	196	.000	2.136

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: MeanInterest

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.782	1	36.782	26.611	.000[a]
	Residual	270.915	196	1.382		
	Total	307.697	197			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: MeanInterest

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.470	.192		18.036	.000
	Mean Stress	-.196	.038	-.346	-5.159	.000

a. Dependent Variable: MeanInterest

From the tables above, the adjusted R^2 score is .11. Unlike the large amount of variance explained in the joy emotion, stress explains only 11.5 percent of the variance in the measurement of interest. The regression equation is significant ($p<.001$) demonstrating that R is significantly different from zero. The standardized beta coefficient is -.346 and it is significantly different from zero ($p<.001$). The negative value

of -.346 illustrates that stress has a negative relationship with joy. The beta coefficient for interest is not as large as joy, but the negative value of -.346 does demonstrate that as stress increases, interest decreases. Thus, for the positive emotion of interest, H2B is supported.

Peacefulness. H2 predicted that as stress increased, the FSE will feel less peaceful. The results of the regression are shown below in Table 4.6.

Table 4.6
Regression Table for Stress and Peacefulness

Model Summary[b]

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	.716[a]	.513	.511	1.39266	.513	207.677	1	197	.000	1.889

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Peacefulness

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	402.789	1	402.789	207.677	.000[a]
	Residual	382.081	197	1.939		
	Total	784.869	198			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Peacefulness

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.852	.226		30.339	.000
	Mean Stress	-.646	.045	-.716	-14.411	.000

a. Dependent Variable: Mean Peacefulness

The adjusted R^2 score is .511. Stress explains 51.1 percent of the variance in the measurement of peacefulness. The regression equation is significant ($p<.001$) demonstrating that R is significantly different from zero. The standardized beta coefficient is -.716 and it is significantly different from zero ($p<.001$). The large negative value of -.716 illustrates that stress has a strong negative relationship with peacefulness. The standardized beta coefficient for peacefulness is larger than the other positive emotions of joy and interest. This analysis also supports H2b in that as stress increases, peacefulness decreases.

Content. H2 predicted that as stress increased the FSE will experience weaker content emotions. The results of the regression are shown on Table 4.7.

Table 4.7
Regression Table for Stress and Content

Model Summary[b]

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	.578[a]	.334	.331	1.55727	.334	99.502	1	198	.000	1.999

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: MeanContent

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	241.300	1	241.300	99.502	.000[a]
	Residual	480.168	198	2.425		
	Total	721.469	199			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: MeanContent

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.187	.251		24.652	.000
	Mean Stress	-.498	.050	-.578	-9.975	.000

a. Dependent Variable: MeanContent

The adjusted R^2 score is .331; therefore, stress explains 33.1 percent of the variance in the measurement of content. The regression equation is significant ($p<.001$) demonstrating that R is significantly different from zero. The standardized beta coefficient is -.578 and it is significantly different from zero ($p<.001$). The large negative value of -.578 illustrates that stress has a strong negative relationship with content. This analysis demonstrates that as stress increases, content emotions decrease and thus H2b is supported.

In summary, all four positive emotions were found to have a negative relationship with stress and thus H2b was supported. Because all these analyses were simple regression equations with the same predictor, their standardized beta coefficients can be compared. This comparison of beta coefficients demonstrates that stress has the largest impact on peacefulness (-.718), followed by joy (-.674), and content (-.578). Interest (-.346) was also negatively impacted but the relationship is not as strong. Comparing the variances explained by stress shows that stress explains 51.1 percent of the variance in peacefulness, 45.1 percent in joy, 33.1 percent in content, and 11 percent of the variance in content. This comparison shows that stress explains a great deal of the variance in peacefulness, joy, and content. While stress does explain some of the variance in interest, there may be other factors that contribute to its prediction. Again, H2 was strongly supported with stress having a negative or inverse relationship with each of the four positive emotions.

Negative Emotions

Unlike positive emotions and its negative relationship with stress, H2 predicted that there is a positive relationship between negative emotions and stress. H2 stated that **as stress increases, the FSE will experience stronger negative emotions**. The ten negative emotions are sad, anger, guilt, disgust, contempt, fear, shame, worry, shy, and anger2. (Anger2 is a scale from Richins 1997 while anger is a scale from Izard 1977.) Each of the ten negative emotions are analyzed using simple regression.

Before the regression analyses were conducted, each of these emotions were tested for the assumptions of regression (Appendices 4.1F, 4.1G, 4.1H, 4.1I, 4.1J, 4.1K, 4.1L, 4.1M, 4.1N, 4.1O). No significant departures from these assumptions were found.

Sad. H2 predicted that as stress increased the FSE will experience stronger feelings of sadness. This relationship was evaluated using regression with mean stress as the independent variable and mean sad as the dependent variable. The results of the regression are shown below in Table 4.8.

Table 4.8
Regression Table for Stress and Sad Emotions

Model Summary[b]

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	.680[a]	.462	.459	1.25819	.462	168.174	1	196	.000	1.954

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Sad

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	266.226	1	266.226	168.174	.000[a]
	Residual	310.276	196	1.583		
	Total	576.501	197			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Sad

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.476	.204		12.124	.000
	Mean Stress	.526	.041	.680	12.968	.000

a. Dependent Variable: Mean Sad

The adjusted R^2 score is .459; therefore, stress explains 45.9 percent of the variance in the measurement of sad emotions. The regression equation is significant ($p<.001$) demonstrating that R is significantly different from zero. The standardized beta coefficient is .680 and it is significantly different from zero ($p<.001$). The large positive value of .680 illustrates that stress has a strong positive relationship with sad emotions. This analysis supports H2 b since as stress increases, sad emotions also increases.

Anger. H2 predicted that as stress increased the FSE will experience stronger anger emotions. The results of the regression are shown below in Table 4.9.

Table 4.9
Regression Table for Stress and Anger

Model Summary[b]

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	.695[a]	.484	.481	1.23732	.484	182.584	1	195	.000	1.789

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Anger

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	279.528	1	279.528	182.584	.000[a]
	Residual	298.537	195	1.531		
	Total	578.065	196			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Anger

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.887	.200		14.407	.000
	Mean Stress	.538	.040	.695	13.512	.000

a. Dependent Variable: Mean Anger

The adjusted R^2 score is .481; therefore, stress explains 48.1 percent of the variance in the measurement of anger emotions. The regression equation is significant ($p<.001$) demonstrating that R is significantly different from zero. The standardized beta coefficient is .695 and it is significantly different from zero ($p<.001$). The large positive value of .695 illustrates that stress has a strong positive relationship with anger

emotions. This analysis also supports H2 b since as stress increases, anger emotions increase.

Guilt. H2 predicted that as stress increased the FSE will experience stronger guilt emotions. The results of the regression are shown below in Table 4.10.

Table 4.10
Regression Table for Stress and Guilt

Model Summary[b]

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	.404[a]	.163	.159	1.16110	.163	38.191	1	196	.000	2.135

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Guilt

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51.487	1	51.487	38.191	.000[a]
	Residual	264.239	196	1.348		
	Total	315.727	197			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Guilt

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.748	.187		25.356	.000
	Mean Stress	.230	.037	.404	6.180	.000

a. Dependent Variable: Mean Guilt

The adjusted R^2 score is .159; therefore, stress explains only 15.9 percent of the variance in the measurement of guilt emotions. The regression equation is significant

(p<.001) demonstrating that R is significantly different from zero. The standardized beta coefficient is .404 and it is significantly different from zero (p<.001). The positive value of .404 illustrates that stress has a positive relationship with guilt emotions. However, this relationship with stress is not as large as compared to sad and anger emotions. This analysis does support H2 b since as stress increases, guilt emotions increase.

Disgust. H2 predicted that as stress increased the FSE will experience stronger disgust emotions. This relationship was evaluated using regression with mean stress as the independent variable and mean disgust as the dependent variable. The results of the regression are shown in Table 4.11.

Table 4.11
Regression Table for Stress and Disgust

Model Summary[b]

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	.723[a]	.523	.520	1.20992	.523	214.746	1	196	.000	1.694

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Disgust

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	314.370	1	314.370	214.746	.000[a]
	Residual	286.927	196	1.464		
	Total	601.297	197			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Disgust

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.945	.196		14.997	.000
	Mean Stress	.570	.039	.723	14.654	.000

a. Dependent Variable: Mean Disgust

The adjusted R^2 score is .52 which is larger than the other three emotions. Stress explains 52 percent of the variance in the measurement of disgust. The regression equation is significant ($p<.001$) demonstrating that R is significantly different from zero. The standardized beta coefficient is .723 and it is significantly different from zero ($p<.001$). The large positive value of .723 illustrates that stress has a large positive relationship with disgust emotions. This analysis also supports H2 b since as stress increases, disgust emotions increase.

Contempt**.** H2 predicted that as stress increased the FSE will experience stronger contempt emotions. The results of the regression are shown below in Table 4.12.

Table 4.12
Regression Table for Stress and Contempt

Model Summary[b]

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	.605[a]	.366	.363	1.11318	.366	111.533	1	193	.000	2.020

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Contempt

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	138.207	1	138.207	111.533	.000[a]
	Residual	239.158	193	1.239		
	Total	377.365	194			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Contempt

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.120	.182		22.614	.000
	Mean Stress	.381	.036	.605	10.561	.000

a. Dependent Variable: Mean Contempt

The adjusted R^2 score is .363; thus, stress explains 36.3 percent of the variance in the measurement of contempt emotions. The regression equation is significant ($p<.001$) demonstrating that R is significantly different from zero. The standardized beta coefficient is .605 and it is significantly different from zero ($p<.001$). The large positive value of .605 illustrates that stress has a large positive relationship with contempt emotions. This analysis also supports H2 b since as stress increases, contempt emotions increase.

Fear. H2 predicted that as stress increased the FSE will experience stronger fear emotions. The results of the regression are shown below in Table 4.13.

Table 4.13
Regression Table for Stress and Fear

Model Summary[b]

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	.649[a]	.421	.418	1.17326	.421	141.735	1	195	.000	1.736

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Fear

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	195.104	1	195.104	141.735	.000[a]
	Residual	268.425	195	1.377		
	Total	463.529	196			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Fear

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.326	.190		17.494	.000
	Mean Stress	.450	.038	.649	11.905	.000

a. Dependent Variable: Mean Fear

The adjusted R^2 score is 0.418; thus, stress explains 41.8 percent of the variance in the measurement of fear. The regression equation is significant ($p<.001$) demonstrating that R is significantly different from zero. The standardized beta coefficient is .649 and it is significantly different from zero ($p<.001$). The large positive value of .649 illustrates that stress has a large positive relationship with fear emotions. This analysis also supports H2 b since as stress increases, fear emotions increase.

Shame. H2 predicted that as stress increased the FSE will experience stronger shame emotions. The results of the regression are shown below in Table 4.14.

Table 4.14
Regression Table for Stress and Shame

Model Summary[b]

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	.490[a]	.240	.236	1.13490	.240	62.292	1	197	.000	2.042

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Shame

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80.232	1	80.232	62.292	.000[a]
	Residual	253.735	197	1.288		
	Total	333.967	198			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Shame

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.737	.183		25.824	.000
	Mean Stress	.288	.036	.490	7.893	.000

a. Dependent Variable: Mean Shame

The adjusted R^2 score is .236 which is lower than most of the other negative emotions. Stress explains only 23.6 percent of the variance in the measurement of shame emotions. The regression equation is significant ($p<.001$) demonstrating that R is significantly different from zero. The standardized beta coefficient is .490 and it is

significantly different from zero (p<.001). The positive value of .490 illustrates that stress has a positive relationship with shame emotions. This analysis also supports H2 b since as stress increases, shame emotions increase.

Worry. H2 predicted that as stress increased the FSE will experience stronger worry emotions. The results of the regression are shown in Table 4.15.

Table 4.15
Regression Table for Stress and Worry

Model Summary[b]

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	.696[a]	.485	.482	1.35362	.485	186.159	1	198	.000	1.822

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Worry

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	341.096	1	341.096	186.159	.000[a]
	Residual	362.793	198	1.832		
	Total	703.888	199			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Worry

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.327	.218		10.666	.000
	Mean Stress	.592	.043	.696	13.644	.000

a. Dependent Variable: Mean Worry

The adjusted R^2 score is .482; thus stress explains 48.2 percent of the variance in the measurement of worry. The regression equation is significant (p<.001) demonstrating that R is significantly different from zero. The standardized beta

coefficient is .696 and it is significantly different from zero (p<.001). The positive value of .696 illustrates that stress has a positive relationship with shame emotions. This analysis also supports H2 b since as stress increases, worry emotions increase.

Shy**.** H2 predicted that as stress increased the FSE will experience stronger shy emotions. The results of the regression are shown below in Table 4.16.

Table 4.16
Regression Table for Stress and Shy Emotions

Model Summary[b]

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	.297[a]	.088	.083	1.13182	.088	18.922	1	196	.000	1.778

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Shy

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.240	1	24.240	18.922	.000[a]
	Residual	251.079	196	1.281		
	Total	275.318	197			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Shy

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.260	.183		28.734	.000
	Mean Stress	.158	.036	.297	4.350	.000

a. Dependent Variable: Mean Shy

The adjusted R^2 score is .083 which is the lowest of all the negative emotions. Stress explains only 8.3 percent of the variance in the measurement of shy emotions. The regression equation is significant ($p<.001$) demonstrating that R is significantly different from zero. The standardized beta coefficient is .297 and it is significantly different from zero ($p<.001$). This standardized beta coefficient is the lowest of the negative emotions. Despite the lower value, .297 illustrates that stress does have a positive relationship with shy emotions. This analysis also supports H2 b because as stress increases, shy emotions increase.

Anger2**.** Anger 2 is a measure from Richins 1997. H2 predicted that as stress increased the FSE will experience stronger anger emotions. The results of the regression are shown in Table 4.17.

Table 4.17
Regression Table for Stress and Anger2

Model Summary[b]

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	.752[a]	.565	.563	1.42297	.565	254.835	1	196	.000	1.544

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Anger2

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	516.004	1	516.004	254.835	.000[a]
	Residual	396.871	196	2.025		
	Total	912.875	197			

a. Predictors: (Constant), Mean Stress

b. Dependent Variable: Mean Anger2

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.457	.230		6.343	.000
	Mean Stress	.733	.046	.752	15.964	.000

a. Dependent Variable: Mean Anger2

The adjusted R^2 score is .562 which is the largest R^2 score of the negative emotions. Stress explains 56.2 percent of the variance in the measurement of anger 2 emotions. The regression equation is significant ($p<.001$) demonstrating that R is significantly different from zero. The standardized beta coefficient is .752 and it is significantly different from zero ($p<.001$). The positive value of .752 illustrates that stress has a large positive relationship with anger 2 emotions. This analysis also supports H2 b since as stress increases, anger2 emotions increase.

Summary

In summary, all ten negative emotions were found to have a positive relationship with stress. Thus H2a was supported. For the ten individual emotions, all of these analyses were conducted using simple regression with the same predictor. Because the emotion variables have the same predictor, their standardized beta coefficients can be compared. The table below provides a summary of the beta coefficients for each emotion and the adjusted R^2 for each emotion.

Table 4.18
Table for Standardized Beta Coefficient and Adjust R^2 for Emotions

Emotions	Standardized Beta Coefficient		Emotions	Adjusted R^2
Anger2	.752		Anger2	56.2
Disgust	.723		Disgust	52.0
Worry	.696		Worry	48.2
Anger	.695		Anger	48.1
Sad	.680		Sad	45.9
Fear	.649		Fear	41.8
Contempt	.605		Contempt	36.3
Shame	.490		Shame	23.6
Guilt	.404		Guilt	15.9
Shy	.297		Shy	8.3

The table demonstrates that stress had the largest impact on anger2, disgust, worry, anger, sad, fear, and contempt. Stress had the least impact on shy followed by guilt and shame. Comparing the variances explained by stress shows that stress explains the most variance in anger2, followed by disgust, worry, anger, sadness, fear, and contempt. Stress didn't explain as much of the variance in shy, guilt, and shame and there may be other factors that contribute to their prediction. Again, H2 was strongly supported. Stress had a positive relationship with each of the ten negative emotions.

Hypothesis 3

The third group of statistical analyses will examine problem and emotion focused coping and its effects on FSE's performance. Job performance was measured with eight items ranging from amount of work, quality of work, creativity, ability to reduce errors and etc. H3a predicted **the higher the use of problem focused coping, the higher the FSE's performance**. H3b predicted **the higher the use of emotion focused coping, the lower the FSE's performance**. When analyzing coping it is important to remember that it was measured using two distinct coping scales: WAYS of Coping scale from Folkman et al, (1986) and Coping with Job Stress from Latack (1986). These two scales are very different scales and, thus, will be analyzed separately. It is important to note that the Latack scale has two coping dimensions: control (problem focused coping) and avoidance (emotion focused coping) while the Folkman et al, scale has three types of problem focused coping strategies and three types of emotion focused coping. The Folkman problem focused coping strategies are (1) planful, (2) self-control, and (3) confrontive and the Folkman emotion focused coping strategies are (1) escape, (2), distancing, and (3) social.

For the following analyses on the Latack and the Folkman scales, it is important to note that the correlations and the regression equations will be calculated separately for each crowding condition. These separate analyses are due to the significant differences in job performance in the two crowding conditions ($p<.001$) and the significant differences in coping strategies among the two treatment groups. This format

will be used for throughout the analysis of H3. We now analyze these two scales separately.

Latack. Our modified Latack 1986 scale consisted of ten items. There were six items that represented problem focusing coping (also called control) and there were four items that represented emotion focused coping (also called avoidance). For this analysis, the problem focused coping items were summed together to create a variable called Latack Problem Focused Coping, and the same was done for emotion focused coping items to create a variable called Latack Emotion Focused Coping.

The first set of analyses investigated the correlations among the two coping strategies and job performance. The following is a table of the correlations of job performance and the two coping strategies in the low and high crowding treatments. These correlations are below in Table 4.19.

Table 4.19
Correlations of Latack Coping Strategies & Job Performance

Performance	Emotion Focused Coping	Problem Focused Coping
Low Crowding	-.049	.450**
High Crowding	.049	.631**

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

Analysis of the simple correlations demonstrated that in both low and high crowding conditions, only problem focused coping had a significant positive correlation with job performance. The next set of analyses investigates whether the correlations are

significantly different for the two treatment conditions. For this analysis, the correlations presented in the Table 4.19 are converted using the Fisher z transformation of the Pearson correlation coefficient. The Z values for the two treatments are then subtracted and the total is divided by the difference of the variance of the two Z values. From this analysis, it is determined that there are significant differences in the correlations of problem focused coping ($z^*=1.82$, $p=.03$) among the two crowding conditions.

The last set of analyses for the Latack scale is the computation of two separate regression equations for high and low crowding. Latack Problem Focused Coping and Latack Emotion Focused Coping were the predictor variables and job performance was the dependent variable These two separate regression equations will assess the impact of problem and emotion focused coping on job performance under low crowding and high crowding conditions respectively. H3a predicted that higher the use of problem focused coping, will lead to higher FSE's performance and H3b predicted that higher use of emotion focused coping, will result in lower FSE's performance. The results of the two regression analyses are shown in Table 4.20.

Table 4.20
Regression Table for Latack Coping and Job Performance

Low Crowding Treatment

Model Summary[b,c]

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	.489[a]	.240	.224	.88292	.240	15.274	2	97	.000	2.078

a. Predictors: (Constant), Coping Lattack Problem, LatackEmotion

b. Dependent Variable: Mean Job Performance

c. Treatment = Uncrowded

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.813	2	11.907	15.274	.000[a]
	Residual	75.615	97	.780		
	Total	99.429	99			

a. Predictors: (Constant), Coping Lattack Problem, LatackEmotion

b. Dependent Variable: Mean Job Performance

c. Treatment = Uncrowded

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.571	.318		4.947	.000
	LatackEmotion	-.190	.087	-.203	-2.182	.032
	Coping Lattack Problem	.460	.084	.513	5.504	.000

a. Dependent Variable: Mean Job Performance

b. Treatment = Uncrowded

Table 4.20 (continued)
Regression Table for Latack Coping and Job Performance

High Crowding Treatment

Model Summary[b,c]

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	.633[a]	.401	.388	.99736	.401	31.081	2	93	.000	1.713

a. Predictors: (Constant), Coping Lattack Problem, LatackEmotion
b. Dependent Variable: Mean Job Performance
c. Treatment = Crowded

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	61.834	2	30.917	31.081	.000[a]
	Residual	92.509	93	.995		
	Total	154.343	95			

a. Predictors: (Constant), Coping Lattack Problem, LatackEmotion
b. Dependent Variable: Mean Job Performance
c. Treatment = Crowded

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.399	.399		3.503	.001
	LatackEmotion	-.134	.106	-.104	-1.260	.211
	Coping Lattack Problem	.835	.106	.649	7.861	.000

a. Dependent Variable: Mean Job Performance
b. Treatment = Crowded

The results of the two separate regression analyses show different results. In the low crowding treatment, the adjusted R^2 is 0.224 and thus problem and emotion focused coping explain 22.4 percent of the variance in the measurement of job performance in the low crowding treatment. However, in the high crowding treatment, the adjusted R^2 is

0.388 with problem and emotion focused coping explaining 38.8 percent of the variance in the measurement of job performance.

Examination of the standardized beta coefficients displays conflicting results. The standardized beta coefficients for the high crowding treatment are -.104 for emotion focused coping and .649 for problem focused coping. However, the standardized beta coefficient for emotion focused coping is not significant. This finding demonstrates that emotion focused coping does not have a significant impact on job performance. Thus H3b is not supported in the high crowding condition. As predicted, the beta coefficient for problem focused coping is significant ($p<.001$) and positive; thus problem focused coping does have a positive impact on job performance in a high crowding environment. Thus, H3a is supported.

Examination of the standardized beta coefficients in the low crowding treatment show differing results. In the low crowding treatment, the coefficients for emotion and problem focused coping are -.203 and .513 respectively. Unlike the high crowding treatment, both of these variables are significant at the .00 and .03 levels respectively. These values demonstrate that emotion focused coping has a negative impact on job performance and that problem focused coping has a positive impact on job performance and thus support H3a and H3b for a low crowding condition.

The previous set of analyses provided both some predicted results and a surprising result. As expected in H3a, problem focused coping was found to have a

positive impact on job performance in both high and low crowding treatments. The surprising result was that emotion focused coping was only found to have negative influence in the low crowding treatment and no effect in the high crowding treatment.

Folkman. The second set of analyses will repeat the testing of H3a and H3b hypotheses by using the Folkman et al, coping scale. The Folkman scale consisted of twenty-five items, twelve that represented problem focusing coping and thirteen items representing emotion focused coping. Unlike the Latack scale, the Folkman scale has three types of emotion focused coping and three types of problem focused coping. The three emotion focused coping strategies are (1) escape/avoidance, (2) distancing, and (3) social; and the three problem focused coping strategies are (1) self control, (2) planful, and (3) confrontive.

The first step in this analysis is to 1) investigate the sample size when using many predictor variables and (2) analyze the correlation matrix for multicollinearity. Because there are six predictor variables, it important to look at the sample size in order to ensure that the results are generalizable. The preferred ratio is 15 to 20 respondents for each independent variable. In this case, for each regression equation there are 104 respondents in each treatment and thus the ratio is 17 respondents for each independent variable. Therefore, this analysis meets the necessary sample size requirements.

Next, we focus on the correlations between the six coping strategies (Table 4.21).

Table 4.21 Correlation Matrix of Folkman Coping Strategies

	Emotion Focused Coping			Problem Focused Coping		
Coping Items	Escape	Social	Distance	Self Control	Planful	Confront
Escape	1	-.124	.000	.104	-.120	.385**
Social	-.124	1	.167*	.182**	.482**	.074
Distance	.000	.167*	1	.333**	.360**	.062
Self Control	.104	.182**	.333**	1	.547**	-.071
Planful	-.120	.424**	.360**	.547**	1	-.163*
Confront	.385**	.074	.062	-.071	-.163*	1

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

Analysis of the correlation matrix shows significant correlation at the .01 levels for the following variables: (1) self control and planful (.547), (2) planful and social (.424), (3) confrontive and escape (.385), (4) planful and distance (.360), (5) self control and distance (.333), and (6) self control and social (.182). Significant correlation was detected at the .05 level for the following variables: (1) self control and social (.182), (2) distance and social (.167), and (3) confront and planful (-.163). The correlation matrix clearly identifies that many of the coping items are significantly correlated.

Due to the multicolinearity among the coping items, the next analysis is a correlation matrix of the coping strategies for each of the crowding conditions. These

matrices will help identify if multicollinearity is more problematic for one condition versus the other. Below are the correlation matrices for the high and low crowding conditions.

Table 4.22 Correlation Matrix of Folkman Coping Strategies for Low Crowding

	Emotion Focused Coping			Problem Focused Coping		
Coping Items	Escape	Social	Distance	Self Control	Planful	Confront
Escape	1	.022	.081	.155	-.073	.319**
Social	.022	1	.308**	.282**	.587**	.078
Distance	.081	.308**	1	.326**	.351**	.252*
Self Control	.155	.282**	.326**	1	.581**	.042
Planful	-.073	.587**	.351**	.581**	1	-.130
Confront	.319**	.078	.252*	.042	-.130	1

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

Table 4.23 Correlation Matrix of Folkman Coping Strategies for High Crowding

	Emotion Focused Coping			Problem Focused Coping		
Coping Items	Escape	Social	Distance	Self Control	Planful	Confront
Escape	1	-.145	-.216*	-.178	-.275**	.434**
Social	-.145	1	.043	.112	.245*	.113
Distance	-.206*	.043	1	.330**	.369**	-.141
Self Control	-.178	.112	.330**	1	.498**	-.286**
Planful	-.275**	.245	.369**	.498**	1	-.216*
Confront	.434**	.113	-.141	-.286**	-.216*	1

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

Analysis of the correlation matrices for the different crowding conditions shows that multicolinearity is prevalent in both conditions. Mulitcolinearity among the coping strategies may cause problems when interpreting the effects of each coping strategy on job performance because the effects of the coping strategies may be confounded. Multicollinearity may also cause inaccurate regression coefficients.

The last multicollinearity test that was conducted was a variance inflation factor (VIF) test. This analysis calculates the degree to which each independent variable is explained by the other independent variables. A common cutoff value is 10. The VIF test did not produce any numbers above 3 and thus demonstrated a tolerable level of multicollinearity.

After investigating the correlation among the coping items, the next set of analyses investigated the correlations among the coping strategies and job performance. The following is a table of the correlations of job performance and the six coping strategies in the low and high crowding treatments.

Table 4.24
Correlations of Folkman Coping Strategies & Job Performance in Low Crowding

	Emotion Focused Coping			Problem Focused Coping		
Correlations	Escape	Distance	Social	Planful	Self Control	Confront
Performance	-.350**	.045	.215*	.272**	.078	-.101

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

Table 4.25
Correlations of Folkman Coping Strategies & Job Performance in High Crowding

	Emotion Focused Coping			Problem Solving Coping		
Correlations	Escape	Distance	Social	Planful	Self Control	Confront
Performance	-.468**	.413**	.205*	.378**	.365**	-.409**

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

Analysis of the simple correlations demonstrated that in low crowding conditions, the escape strategy has a significant negative correlation with job performance while both planful and social coping have a significant positive correlation with job performance. Analysis of the correlations in the high crowding condition demonstrates that escape and confrontive coping have a significant negative relationship with job performance. Social, planful, and distance coping all have a significant positive relationship with job performance.

The next set of analyses investigates whether the coping correlations with job performance are significantly different for the two treatment conditions. For this analysis, the correlations presented in the Table 4.24 and 4.25 are converted using the Fisher z transformation of the Pearson correlation coefficient. The Z values for the two treatments are then subtracted and the total is divided by the difference of the variance of the two Z values. From this analysis, it is determined that there are significant differences in the correlations of self control ($z^*=-2.14$, $p=.016$), distancing ($z^*=2.77$, $p=.002$), and confrontive ($z^*=2.34$, $p=.009$).

For the last sets of analyses, all six coping strategies are regressed on job performance. This multiple regression analysis will investigate the hypothesized relationships of the three emotion focused coping strategies and the three problem focused coping strategies on job performance. Two separate regression equations for high and low crowding will be computed. These two equations will assess the impact of problem and emotion focused coping on job performance under low crowding and high crowding conditions respectively. H3a predicted that the higher the use of problem focused coping, the higher the FSE's performance and H3b predicted that the higher the use of emotion focused coping, the lower the FSE's performance. Because of the three different coping strategies under both emotion focused and problem focused coping, the following hypotheses are developed for these analyses.

H3a1 – Higher the use of planful coping, the higher the job performance.

H3a2 – Higher the use of self control coping, the higher the job performance.

H3a3 – Higher the use of confrontive coping, the higher the job performance.

H3b1 – Higher the use of escape coping, the lower the job performance.

H3b2 – Higher the use of distancing coping, the lower the job performance.

H3b3 – Higher the use of social coping, the lower the job performance.

The following regression analyses will show which coping strategies are beneficial or harmful to job performance. Most importantly these analyses will show which coping strategies are most beneficial in the high crowding scenario. The results of the regression analysis are in Table 4.26.

Table 4.26
Regression Table for Folkman Coping and Job Performance

Low Crowding Treatment

Model Summary[b,c]

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	.432[a]	.187	.134	.91814	.187	3.521	6	92	.004	2.020

a. Predictors: (Constant), Coping Confrontive, Coping Self Control, Coping Social, Coping Escape Folk, Coping Distancing, Coping Planful Problem Solving

b. Dependent Variable: Mean Job Performance

c. Treatment = Uncrowded

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.811	6	2.969	3.521	.004[a]
	Residual	77.555	92	.843		
	Total	95.366	98			

a. Predictors: (Constant), Coping Confrontive, Coping Self Control, Coping Social, Coping Escape Folk, Coping Distancing, Coping Planful Problem Solving

b. Dependent Variable: Mean Job Performance

c. Treatment = Uncrowded

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.977	.599		4.968	.000
	Coping Escape Folk	-.311	.090	-.354	-3.478	.001
	Coping Distancing	-.032	.102	-.034	-.318	.751
	Coping Social	.083	.085	.116	.971	.334
	Coping Planful Problem Solving	.145	.119	.179	1.216	.227
	Coping Self Control	.007	.085	.010	.085	.932
	Coping Confrontive	.040	.081	.052	.493	.623

a. Dependent Variable: Mean Job Performance

b. Treatment = Uncrowded

Table 4.26 (continued)
Regression Table for Folkman Coping and Job Performance

High Crowding Treatment

Model Summary[b,c]

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	.665[a]	.442	.403	.97577	.442	11.354	6	86	.000	1.902

a. Predictors: (Constant), Coping Confrontive, Coping Social, Coping Distancing, Coping Self Control, Coping Escape Folk, Coping Planful Problem Solving

b. Dependent Variable: Mean Job Performance

c. Treatment = Crowded

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.865	6	10.811	11.354	.000[a]
	Residual	81.883	86	.952		
	Total	146.747	92			

a. Predictors: (Constant), Coping Confrontive, Coping Social, Coping Distancing, Coping Self Control, Coping Escape Folk, Coping Planful Problem Solving

b. Dependent Variable: Mean Job Performance

c. Treatment = Crowded

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.160	.753		4.197	.000
	Coping Escape Folk	-.280	.105	-.254	-2.673	.009
	Coping Distancing	.368	.110	.297	3.332	.001
	Coping Social	.166	.088	.163	1.890	.062
	Coping Planful Problem Solving	.092	.117	.078	.785	.435
	Coping Self Control	.064	.125	.050	.513	.609
	Coping Confrontive	-.237	.087	-.262	-2.724	.008

a. Dependent Variable: Mean Job Performance

b. Treatment = Crowded

The two separate regression analyses show different results. In the low crowding treatment, the adjusted R^2 is only 0.134; thus, the six coping strategies only explain 13.4 percent of the variance in the measurement of job performance in a low crowding scenario. However, in the high crowding treatment the adjusted R^2 is 0.403 explaining 40.3 percent of the variance in the measurement of job performance. These statistics show that problem and emotion focused coping strategies explain much more of the variance in job performance under high crowding conditions.

Examination of the standardized beta coefficients displays conflicting results. In the low crowding condition, the only standardized beta coefficient that is significant is escape which is an emotion focused coping strategy (.354; $p<.001$). This negative value shows that the escape strategy has a negative impact on job performance in a low crowding treatment. Therefore, the only hypothesis that was supported in the low crowding treatment was H3b1.

For the high crowding treatment, the significant coping strategies were escape, distancing, social, and confrontive. Their standardized beta coefficients were -.254 ($p=.009$), .297 ($p=.001$), .163 ($p=.062$), and -.262 ($p=.008$) respectively. The problem focused coping strategies of planful coping and self control coping did not have significant coefficients, and therefore support for H3a1 and H3a2 was not found. For H3a3, confrontive coping, also a type of problem focused coping, was predicted to increase job performance. However, the negative coefficient value for confrontive coping shows that confrontive coping had a negative impact on job performance. Thus,

H3a3 was not supported. For the escape coping strategy (emotion focused), the significant negative standardized coefficient value shows that it has a negative impact on job performance and thus H3b1 is supported. For H3b2, the standardized coefficient value for distancing was positive and significant, thus showing that distancing has a positive impact on job performance in the high crowding treatment. However, this finding is contrary to H3b2 and thus H3b2 is not supported. For H3b3, the standardized coefficient value for social support was positive thus showing that social support has a positive impact on job performance. However, this finding is contrary to H3b3 and thus H3b3 is not supported.

In summary, the only hypothesis that was supported was H3b1 for both high and low crowding conditions. H3b1 predicted that the problem focused strategy of escape would have a negative impact on job performance. In the low crowding conditions, none of the other five coping variables were found to have a significant impact on job performance. In the high crowding condition, the problem focused strategies of planful and self control coping were not found to significantly affect job performance and the emotion focused coping strategies of distancing and social support were found to have a positive impact on job performance instead of the predicted negative relationship with job performance.

Summary

In summary, both the Latack and the Folkman coping scales were analyzed for their impact on job performance. For these analyses, each treatment group was analyzed separately. These analyses consisted of (1) correlations of coping strategies with job performance for each treatment group, (2) testing of significant differences of correlations among treatment groups, and (3) multiple regression equations for each treatment group. These analyses investigated H3a which predicted that higher use of problem focused coping would result in higher the FSE performance and H3b which predicted that higher use of emotion focused coping would lower the FSE performance.

For the Latack scale, the correlation analysis found that problem focused coping was positively correlated with job performance in both the low and high crowding condition. Analysis of the correlations among treatments found that there were significant differences in the correlations for problem focused and job performance among the treatment groups. The multiple regression equation found support for H3a (problem focused coping) and H3b (emotion focused coping) in the low crowding treatment but in the high crowding treatment only H3a (problem focused coping) was supported.

For the Folkman scale, the correlation analysis found that planful and social coping were positively correlated with job performance while escape was negatively correlated with job performance in the low crowding condition. For the high crowding condition, escape and confrontive were found to have a negative correlation with job

performance while social, planful, and distancing coping were found to have a positive correlation with job performance. Analysis of the correlations among treatments identified that there were significant differences in self control, distancing, and confrontive coping among the treatment groups. The multiple regression equations only found support for H3b1 in the high and low crowding condition. H3b1 predicted that the problem focused strategy of escape would have a negative impact on job performance. For the low crowding condition, none of the other coping variables had a significant impact on job performance. For the high crowding condition, the problem focused strategies of planful and self control coping were not found to significantly affect job performance and the emotion focused coping strategies of distancing and social support were found to have a positive impact on job performance instead of the predicted negative relationship with job performance.

Hypothesis 4

The fourth group of statistical analyses will examine problem and emotion focused coping and its effects on FSE's displayed emotions. Displayed emotions are not true emotions but those emotions dictated or required by the organization. H4a predicted that **higher the use of problem focused coping, the greater the likelihood of FSE to display positive emotions to the consumer**. H4b predicted that **higher the use of emotion focused coping, the lower the likelihood of FSE to display positive emotions to the consumer**. The WAYS of Coping scale from Folkman et al, 1986 and the Coping with Job Stress from Latack 1986 will be individually assessed on displayed emotions.

For the following analyses on the Latack and the Folkman scales, it is important to note that the correlations and the regression equations will be calculated separately for each crowding condition. These separate analyses are due to the significant differences in displayed emotions in the two crowding conditions ($p<.001$) and the significant differences in coping strategies among the two treatment groups. This format will be used for throughout the analysis of H4. We now analyze these two scales separately.

Latack. The modified Latack 1986 scale consisted of ten items. There were six items that represented problem focusing coping (also called control) and there were four items that represented emotion focused coping (also called avoidance). For this analysis, the problem focused and emotion focused coping items were summed together to create Latack Problem Focused Coping and Latack Emotion Focused Coping variables, respectively.

The first set of analyses investigated the correlations among the two coping strategies and displayed emotions. The following is a table of the correlations of displayed emotions and the two coping strategies in the low and high crowding treatments. These correlations are below in Table 4.27.

Table 4.27
Correlations of Latack Coping Strategies & Displayed Emotions

Displayed Emotions	Emotion Focused Coping	Problem Focused Coping
Low Crowding	.024	.324**
High Crowding	.027	.576**

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

Analysis of the simple correlations demonstrated that in both low and high crowding conditions, only problem focused coping had a significant positive correlation with displayed emotions performance. The next set of analyses investigates whether the correlations are significantly different for the two treatment conditions. For this analysis, the correlations presented in the Table 4.27 are converted using the Fisher z transformation of the Pearson correlation coefficient. The Z values for the two

treatments are then subtracted and the total is divided by the difference of the variance of the two Z values. From this analysis, it is determined that there are significant differences in the correlations of problem focused coping ($z^*=2.25$, $p=.01$) among the two crowding conditions.

The last set of analyses for the Latack scale is the computation of two separate regression equations for high and low crowding. Latack Problem Focused Coping and Latack Emotion Focused Coping were the predictor variables and displayed emotions was the dependent variable. These two separate regression equations will assess the impact of problem and emotion focused coping on displayed emotions under low crowding and high crowding conditions respectively. H4a predicted that higher the use of problem focused coping, the greater the likelihood of FSE to display positive emotions to the consumer. H4b predicted that higher the use of emotion focused coping, the lower the likelihood of FSE to display positive emotions to the consumer. The results of the two regression analyses are shown in Table 4.28.

Table 4.28
Regression Table for Latack Coping and Displayed Emotions

Low Crowding Treatment

Model Summary[b,c]

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	.331[a]	.109	.091	.86298	.109	5.958	2	97	.004	2.150

a. Predictors: (Constant), Coping Lattack Problem, LatackEmotion

b. Dependent Variable: Mean Displayed Emotions

c. Treatment = Uncrowded

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.874	2	4.437	5.958	.004[a]
	Residual	72.240	97	.745		
	Total	81.113	99			

a. Predictors: (Constant), Coping Lattack Problem, LatackEmotion

b. Dependent Variable: Mean Displayed Emotions

c. Treatment = Uncrowded

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.647	.310		5.307	.000
	LatackEmotion	-.060	.085	-.071	-.707	.481
	Coping Lattack Problem	.280	.082	.346	3.431	.001

a. Dependent Variable: Mean Displayed Emotions

b. Treatment = Uncrowded

Table 4.28(continued)
Regression Table for Folkman Coping and Displayed Emotions

High Crowding Treatment

Model Summary[b,c]

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	.585[a]	.343	.329	1.12427	.343	24.483	2	94	.000	2.323

a. Predictors: (Constant), Coping Lattack Problem, LatackEmotion

b. Dependent Variable: Mean Displayed Emotions

c. Treatment = Crowded

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	61.893	2	30.947	24.483	.000[a]
	Residual	118.815	94	1.264		
	Total	180.709	96			

a. Predictors: (Constant), Coping Lattack Problem, LatackEmotion

b. Dependent Variable: Mean Displayed Emotions

c. Treatment = Crowded

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.805	.444		4.063	.000
	LatackEmotion	-.166	.120	-.120	-1.389	.168
	Coping Lattack Problem	.827	.118	.603	6.990	.000

a. Dependent Variable: Mean Displayed Emotions

b. Treatment = Crowded

The results of the two separate regression analyses show some different and yet some similar results. In the low crowding treatment, the adjusted R^2 is .091 and thus

problem and emotion focused coping only explain 9.1 percent of the variance in the measurement of displayed emotions. However, in the high crowding treatment, the adjusted R^2 is 0.329. Thus, problem and emotion focused coping explains 32.9 percent of the variance in the measurement of displayed emotions. These statistics show that problem and emotion focused coping explain more variance in displayed emotions under high crowding conditions.

Examination of the standardized beta coefficients displays similar results for the high and low crowding equations. The standardized beta coefficients for the high crowding treatment are -.120 for emotion focused coping and .603 for problem focused coping. However, the standardized beta coefficient for emotion focused coping is not significant. This finding demonstrates that emotion focused coping does not have a significant impact on displayed emotions. Thus H4b is not supported. As predicted the positive beta coefficient for problem focused coping is significant ($p<.001$) and thus problem focused coping does have a positive impact on displayed emotions in a high crowding environment. Thus, H4a is supported.

Examination of the standardized beta coefficients in the low crowding treatment shows similar results but the coefficient values are not as large. In the low crowding treatment, the standardized beta coefficients for emotion and problem focused coping are -.071 and .346 respectively. Similar to the high crowding treatment, only problem focused coping is significant at the .00 level and thus H4a is supported. The standardized beta coefficient for emotion focused coping is not significant and thus H4b

is not supported. These standardized beta coefficients for both treatment groups show that problem focused coping does have a significant and positive relationship on displayed emotions and thus H4a is supported in both treatments. However, emotion focused coping was not shown to have a significant impact on displayed emotions in neither the high or low crowding treatments which is contrary to H4b. Thus H4b was not supported

The previous set of analyses provided both some predicted results and some surprising results. As predicted in H4a, problem focused coping was found to have a positive impact on displayed emotions in both high and low crowding treatments. The surprising result was that emotion focused coping was not found to have a negative influence or even a significant relationship with displayed emotions in either of the two treatments.

Folkman. The second set of analyses focuses on the Folkman et al, coping scale. The Folkman et al, scale consisted of twenty five items. There were twelve items that represented problem focusing coping and there were thirteen items that represented emotion focused coping. Unlike the Latack scale, the Folkman scale has three types of emotion focused coping and three types of problem focused coping. The three emotion focused coping strategies are (1) escape/avoidance, (2) distancing, and (3) social; and the three problem focused coping strategies are (1) self control, (2) planful, and (3) confrontive.

The first set of analyses investigates the correlations among the coping strategies and displayed emotions. The following is a table of the correlations of displayed emotions and the six coping strategies in the low and high crowding conditions.

Table 4.29
Correlations of Folkman Coping Strategies & Displayed Emotions in Low Crowding

	Emotion Focused Coping			Problem Focused Coping		
Correlations	Escape	Distance	Social	Planful	Self Control	Confront
Displayed Emotions	-.324**	.025	.186	.203**	-.032	-.065

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

Table 4.30
Correlations of Folkman Coping Strategies & Displayed Emotions in High Crowding

	Emotion Focused Coping			Problem Solving Coping		
Correlations	Escape	Distance	Social	Planful	Self Control	Confront
Displayed Emotions	-.448**	.472**	.058	.458**	.407**	-.394**

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

Analysis of the simple correlations demonstrated that in low crowding conditions, the escape strategy has a significant negative correlation with job performance while planful coping had a significant positive correlation with displayed emotions. Analysis of the correlations in the high crowding condition demonstrates that escape and confrontive coping have a significant negative relationship with displayed emotions. Self control, planful, and distance coping all have a significant positive relationship with displayed emotions.

The next set of analyses investigates whether the coping correlations with displayed emotions are significantly different for the two treatment conditions. For this analysis, the correlations presented in the Table 4.29 and 4.30 are converted using the Fisher z transformation of the Pearson correlation coefficient. The Z values for the two treatments are then subtracted and the total is divided by the difference of the variance of the two Z values. From this analysis, it is determined that there are significant differences in the correlations of self control ($z^*=-3.26$, $p=.000$), planful ($z^*=2.03$, $p=.02$), distancing ($z^*=3.43$, $p=.000$), and confrontive ($z^*=2.47$, $p=.007$).

For the last set of analyses, all six coping strategies will be regressed on displayed emotions. This multiple regression analysis will investigate the hypothesized relationships of the three emotion focused coping strategies and the three problem focused coping strategies on job performance. Two separate regression equations for high and low crowding will be computed. These two equations will assess the impact of problem and emotion focused coping on job performance while in a high crowding condition and while in a low crowding condition. H4a predicted that the higher the use of problem focused coping, the greater the likelihood of FSE to show displayed positive emotions and H4b predicted that the higher the use of emotion focused coping, the lower the likelihood of FSE to show displayed emotions to the consumer. Because of the three different coping strategies under both emotion focused and problem focused coping, the following hypotheses will be used for these analyses.

H4a1 – Higher the use of planful coping, the greater the likelihood of positive displayed emotions.

H4a2 – Higher the use of self control coping, the greater the likelihood of positive displayed emotions.

H4a3 – Higher the use of confrontive coping, the greater the likelihood of positive displayed emotions.

H4b1 – Higher the use of escape coping, the lower the likelihood of positive displayed emotions.

H4b2 – Higher the use of distancing coping, the lower the likelihood of positive displayed emotions.

H4b3 – Higher the use of social coping, the lower the likelihood of positive displayed emotions.

The following regression analyses will show which coping strategies are beneficial or detrimental to positive displayed emotions. Most importantly these analyses will show which coping strategies are most beneficial in the high crowding scenario. The results of the regression analysis are in Table 4.31.

Table 4.31
Regression Table for Folkman Coping and Displayed Emotions

Low Crowding Treatment

Model Summary[b,c]

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	.389[a]	.151	.096	.85716	.151	2.726	6	92	.018	2.234

a. Predictors: (Constant), Coping Confrontive, Coping Self Control, Coping Social, Coping Escape Folk, Coping Distancing, Coping Planful Problem Solving

b. Dependent Variable: Mean Displayed Emotions

c. Treatment = Uncrowded

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.016	6	2.003	2.726	.018[a]
	Residual	67.594	92	.735		
	Total	79.610	98			

a. Predictors: (Constant), Coping Confrontive, Coping Self Control, Coping Social, Coping Escape Folk, Coping Distancing, Coping Planful Problem Solving

b. Dependent Variable: Mean Displayed Emotions

c. Treatment = Uncrowded

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.915	.560		5.209	.000
	Coping Escape Folk	-.230	.084	-.286	-2.752	.007
	Coping Distancing	-.026	.095	-.030	-.273	.785
	Coping Social	.066	.080	.101	.822	.413
	Coping Planful Problem Solving	.166	.111	.224	1.490	.140
	Coping Self Control	-.097	.079	-.153	-1.219	.226
	Coping Confrontive	.047	.076	.067	.626	.533

a. Dependent Variable: Mean Displayed Emotions

b. Treatment = Uncrowded

Table 4.31 (continued)
Regression Table for Folkman Coping and Displayed Emotions

High Crowding Treatment

Model Summary[b,c]

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	.711[a]	.506	.471	.96548	.506	14.828	6	87	.000	2.230

a. Predictors: (Constant), Coping Confrontive, Coping Social, Coping Distancing, Coping Self Control, Coping Escape Folk, Coping Planful Problem Solving

b. Dependent Variable: Mean Displayed Emotions

c. Treatment = Crowded

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	82.932	6	13.822	14.828	.000[a]
	Residual	81.096	87	.932		
	Total	164.029	93			

a. Predictors: (Constant), Coping Confrontive, Coping Social, Coping Distancing, Coping Self Control, Coping Escape Folk, Coping Planful Problem Solving

b. Dependent Variable: Mean Displayed Emotions

c. Treatment = Crowded

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.898	.745		3.890	.000
	Coping Escape Folk	-.297	.104	-.256	-2.872	.005
	Coping Distancing	.401	.108	.311	3.725	.000
	Coping Social	-.047	.087	-.044	-.541	.590
	Coping Planful Problem Solving	.284	.116	.228	2.445	.016
	Coping Self Control	.164	.123	.121	1.327	.188
	Coping Confrontive	-.151	.086	-.158	-1.747	.084

a. Dependent Variable: Mean Displayed Emotions

b. Treatment = Crowded

The results of the two separate regression analyses show different results. In the low crowding treatment, the adjusted R^2 is 0.096 and thus the six coping strategies only explain 9.6 percent of the variance in the measurement of displayed emotions. However, in the high crowding treatment the adjusted R^2 is 0.471. Thus, the six coping strategies explain 47.1 percent of the variance in the measurement of displayed emotions. Both the high and low regression equations are significant at the .000 and .018 level. However, the problem and emotion focused coping strategies explain much more variance of displayed emotions when in a high crowding condition.

Examination of the standardized beta coefficients displays conflicting results for the two regression equations. The only standardized beta coefficient that is significant in the low crowding treatment is escape. The standardized beta coefficient for escape is -.286 and it is significant at the .007 level. This negative value shows that the escape strategy has a negative impact on displayed emotions in a low crowding treatment. Therefore, the only hypothesis that was supported in the low crowding treatment was H4b1.

For the high crowding treatment, the significant coping strategies were escape, distancing, planful, and confrontive. Their standardized beta coefficients were -.256 (p=.005), .311 (p=.001), .228 (p=.016), and -.158 (p=.084) respectively. Planful coping had a significant positive relationship with displayed emotions and H4a1 was supported. However, self control coping did not have a significant coefficient, and support for H4a2

was not found. For H4a3, confrontive coping was predicted to increase the likelihood of displaying positive emotions. However, the negative coefficient value for confrontive coping shows that confrontive coping had a negative impact on displayed emotions. Thus, H4a3 was not supported. For H4b1, the negative standardized coefficient value for the escape strategy shows that it has a negative impact on displayed emotions and thus H4b1 is supported. For H4b2, the standardized coefficient value for distancing was positive thus showing that distancing has a positive impact on displayed emotions in the high crowding treatment. However, this finding is contrary to H4b2 and thus H4b2 is not supported. For H4b3, the standardized coefficient value for social support was not significant and thus support for H4b3 was not found

In summary, the only hypothesis for the low crowding condition that was supported was H4b1 (escape). For the high crowding conditions, only H4a1 and H4b1 which predicted that planful coping would have a positive impact on displayed emotions and that the escape strategy would have a negative impact on displayed emotions. Contrary to predictions, the problem focused strategy of self control was not found to significantly affect displayed emotions while confrontive coping was found to have an unexpected negative impact on displayed emotions in the high crowding condition. For the emotion focused coping strategies, distancing was found to have an unexpected positive impact on displaying positive emotions and social support was found to an insignificant impact on displayed emotions for the high crowding condition.

Summary

In summary, both the Latack and the Folkman coping scales were analyzed for their impact on displayed emotions. For these analyses, each treatment group was analyzed separately. These analyses consisted of (1) correlations of coping strategies with displayed emotions, (2) testing of significant differences of correlations among treatment groups, and (3) multiple regression equations for each treatment group. These analyses investigated H4a which predicted that the higher the use of problem focused coping, the greater the likelihood of FSE to display positive emotions and H4b which predicted that the higher the use of emotion focused coping, the lower the likelihood of FSE to display positive emotions.

For the Latack scale, the correlation analysis found that problem focused coping was positively correlated with displayed emotions in both the low and high crowding conditions. Analysis of the correlations among treatments found that there were significant differences in the correlations for problem focused coping and job performance among the treatment groups. The multiple regression equation found support for H4a (problem focused coping) in the high and low crowding conditions but H4b was not supported in either crowding condition.

For the Folkman scale, the correlation analysis found that planful was positively correlated with displayed emotions while escape coping was negatively correlated with displayed emotions for the low crowding condition. For the high crowding condition, escape and confrontive were found to have a negative correlation with displayed

emotions while distancing, planful, and self control were found to have a positive correlation with job performance. The analyses of correlations with job performance between treatments identified that were significant differences in self control, planful, distancing, and confrontive. The multiple regression equation for the low crowding condition only found support for H4b1 (escape). The multiple regression equation for the high crowding condition only found support for H4a1 and H4b1 which predicted that planful coping would have a positive impact on displayed emotions and that the escape strategy would have a negative impact on displayed emotions. Contrary to predictions for the high crowding condition, the problem focused strategy of self control was not found to significantly affect displayed emotions and confrontive coping was found to have an unexpected negative impact on displayed emotions. For the emotion focused coping strategies, distancing was found to have an unexpected positive impact on displaying positive emotions and social support was found to an insignificant impact on displayed emotions in the high crowding condition.

Chapter 5

SUMMARY AND DISCUSSION

This chapter presents a summary and a discussion of the of the research project. The chapter begins with an overview of the study and discusses the major findings of the study. The limitations of the study are examined and followed by contributions, implications, and suggestions for future research.

Summary

The general objective of this study was to explain the impact of crowding on FSE in a services context. The research pioneers a new avenue by investigating how employees react to customer crowding and thus addresses the gap in the literature on employees' interaction with the physical environment. In particular, the study examines how customer crowding affects FSE's stress, emotions, job performance, and displayed emotions. In addition, the study examined how coping strategies can reduce or enhance the effects of customer crowding.

The theoretical framework for this study is Lazarus's model that links appraisal, emotional response, and coping in a sequential process. By applying the framework to the issue of customer crowding, the major constructs for this study were determined as (1) the stressor (customer crowding), (2) appraisal, (3) emotions, (4) coping, and (5) service quality outcomes. The four major objectives of this study are to investigate: (1) stress levels of FSE due to customer crowding, (2) the emotions of FSE in a crowded environment, (3) the coping strategies used by FSE in a crowded environment, and (4)

effects of customer crowding on job performance and displayed emotions. These objectives in turn helped formulate the major hypotheses of this study. These hypotheses were based on an exploratory study comprising of in-depth interviews with FSE of two service organizations (fast food restaurant and airport) and on literature in psychology, marketing, environmental psychology, and environmental sociology.

With respect to the first objective, H1 was developed to examine the relationship between the experience of crowding and stress. FSE's stress levels were predicted to differ significantly under high and low crowding conditions. Objective 2 focused on emotions of FSE while in crowded conditions. Based on the qualitative studies and literature on emotions, H2 predicted that as stress increased, FSE would experience stronger negative emotions and weaker positive emotions. In order to accomplish Objectives 3 and 4, coping strategies and their impact on service quality indicators had to be investigated. One important service quality indicator is job performance. The literature on coping strategies demonstrated that problem focused coping strategies had beneficial effects on performance while emotion focused coping strategies had detrimental effects on performance. Therefore, H3a predicted that higher the use of problem focused coping, higher the FSE's performance and H3b predicted that higher the use of emotion focused coping, lower the FSE's performance. In addition to examining job performance, service quality literature also stressed the importance of looking at attitudes and gestures of FSE, hence the inclusion of displayed emotions. Again, based on coping literature H4a predicted that higher the use of problem focused coping, greater the likelihood of FSE to show displayed positive emotions to the

consumer and H4b predicted that higher the use of emotion focused coping, lower the likelihood of FSE to show displayed positive emotions to the consumer. Overall, the major objectives of this study helped formulate the four hypotheses that were investigated in this study.

Two studies were conducted for this research project. The first study was an exploratory study with 40 FSE from two service organizations (airport and fast food restaurant). FSE were individually asked a series of open ended questions about a recent situation at work when the environment was crowded with many customers waiting in line. The responses from these FSE provided a vivid picture of the phenomenon and identified many variables and mechanisms that were then investigated in the second study.

The second study was a laboratory experiment with 200 FSE who work at one airport. In the experiment, respondents were exposed to one of two (high/low density) treatments. Human density was manipulated via videos and scenarios. Respondents were asked to complete a survey by trying to predict the emotions and behaviors of a coworker working in the situation depicted by the video and the scenario. The video footage contained ten similar background shots of high and low customer density in the same sequence. The written scenarios were developed with the help of airport employees in order to create a realistic work scenario and environment. The respondents answered questions about (1) perceived crowding, (2) stress, (3) internal

emotions, (4) coping, (5) performance, and (6) displayed emotions. Prior to the experiment, several pre-experimental surveys and a pretest were conducted.

The data that was collected from the experiment was then analyzed via ANOVA, simple regression, and multiple regression. Before proceeding with the analysis, the items comprising the dependent variables were analyzed for reliability. Also, the key assumptions of ANOVA and regression were evaluated. The results did not reveal any significant departures from these assumptions.

The first analysis investigated the relationship between crowding and stress (H1). The results of the ANOVA demonstrated that stress levels of FSE significantly differ under high and low crowding and thus, H1 was supported. The second analysis using regression and crowding perceptions (not treatments) also showed that there was a positive relationship between crowding and stress. An interesting finding with the regression equation was that crowding accounted for 83 percent of the variance in the measurement of stress. The standardized coefficient value was also very large and close to 1.0 thus showing a strong positive relationship between crowding and stress.

The second analysis investigated the relationship between stress and positive and negative emotions. All four positive emotions were found to have a negative relationship with stress and thus H2b was supported. This comparison of beta coefficients demonstrates that stress had the largest impact on peacefulness, joy, and content. The results of the simple regression analyses with each of the ten negative

emotions found a positive relationship with negative emotions and stress and thus H2a was supported. This comparison of beta coefficients demonstrated that stress had the largest impact on anger2, disgust, worry, anger, sad, fear, and contempt. Again, both H2a and H2b were supported. Stress had a negative relationship with each of the positive emotions and a positive relationship with each of the negative emotions.

The third set of analyses investigated the relationship between problem and emotion focused coping and job performance. Both the Latack and the Folkman coping scales were regressed on job performance for each treatment group. H3a predicted that higher the use of problem focused coping leads to higher FSE performance, and H3b predicted that higher use of emotion focused coping leads to lower FSE performance. For the Latack scale, both H3a (problem focused coping) and H3b (emotion focused coping) were supported in the low crowding treatment, but in the high crowding treatment only H3a (problem focused coping) was supported. For the Folkman et al, scale, only H3b1 (escape) were supported in the high crowding condition. Contrary to predictions, distancing (H3b2) and social support (H3b3) had a positive impact on job performance and confrontive coping (H3a3) had a negative impact in the high crowding condition. Also, H3a1 (planful) and H3a2 (self control) were not found to have a significant impact on job performance. In the low crowding condition, only H3b1 (escape) was supported. Hence, the escape coping strategy has a negative impact on performance in both high and low crowding.

The fourth set of analyses investigated the relationship between problem and emotion focused coping and displayed emotions. Both the Latack the Folkman et al, coping scales were regressed on displayed emotions for each treatment group. H4a predicted that higher the use of problem focused coping results in greater likelihood of FSE to display positive emotions. H4b predicted that higher use of emotion focused coping leads to lower likelihood of FSE to display positive emotions. For the Latack scale, only H4a (problem focused coping) was supported in both the low and high crowding treatments. For the Folkman et al, scale, only H4a1 (planful) and H4b1 (escape) were supported in the high crowding condition. Contrary to predictions, distancing (H4b2) and social support (H4b3) had a positive impact on displayed emotions and confrontive coping (H4a3) had a negative impact on displayed emotions in the high crowding condition. In the low crowding condition, only H4b1 (escape) was supported. Again, we find that the escape coping strategy has a negative impact on displayed emotions in both high and low crowding.

Some of the predicted relationships for coping with job performance and displayed emotions were not supported and many coping strategies even demonstrated an opposite effect on job performance and displayed emotions. A possible explanation for these findings can be found (1) by investigating the history of the coping literature and context in which the literature originated and (2) by investigating the crowding theories and their impact on individuals. The following paragraphs describe each of the explanations.

Coping literature originated from studies on defense mechanisms and how people overcame catastrophic events such as (1) Wallace's 1956 study on psychological responses to tornadoes, (2) Lifton's 1968 study of Hiroshima, and (3) Erikson's 1976 examination of the Boulder Creek disaster (Parker and Endler 1996). Coping literature further evolved to focusing on broad general responses to a major life change or problem (e.g., illness and death of family member). The WAYS of Coping items (Folkman et al, 1986) that was used in this study has been used extensively. However, it was developed to examine coping from stressful events over a long period of time such as six months to a year. In their study, the authors found that distancing and social support had an unfavorable effect because individuals were not attending to the problem (e.g., terminal cancer). Distancing one's self from a chronic illness is not going to solve the illness. However, in a crowded service context such as crowding, distancing one's self from the overwhelming condition may help the individual to focus on the task at hand. By investigating the background of coping, it is evident that coping literature's context and stressors are different from a service context and thus may provide an explanation for the unpredicted and insignificant relationship with job performance and displayed emotions. Folkman et al, (1986) eluded to this point and stated that "whether or not a coping strategy results in positive outcomes depends on the demands and constraints of the context in which it is being used and the skill with which it is being applied" (p.1001). Thus a crowded service environment may cause coping to have different outcomes on job performance and displayed emotions when compared to dealing with terminal cancer and other major life events.

A second possible explanation for the unpredicted findings with coping and the dependent variables may be found in the crowding theories. This study found an unexpected positive relationship between distancing and job performance and displayed emotions. The arousal theory from crowding literature contends that there is an optimal level of arousal below and above which people are bored or over-stimulated, respectively. Since crowding is a state of stress that is brought about by above-optimal levels of arousal due to high density, individuals try to reduce it by using various tactics one of which is to regain privacy. Distancing can be one such way to achieve an optimal arousal level and thus work well for enhancing job performance and displayed positive emotions. Similarly for the unpredicted positive relationship between social support and job performance and displayed emotions, the behavioral constraint theory can be a helpful explanation. By seeking support in the form of "talking to someone to find out more about the situation", and by "asking a colleague for advice", the FSE may be trying to increase their behavioral freedom and empowerment through increased knowledge about the existing conditions and available courses of action.

For the insignificant relationship between planful and job performance and displayed emotions, the stimulus overload theory can provide a possible explanation. The theory states that overload occurs when the rate and amount of environmental stimuli exceed the capacity to cope with the stimuli. High density causes high levels of stimulation that overload's the individual's processing capabilities. Because of this inability, FSE may not be able to effectively use planful coping. This coping strategy require mental capabilities such as draw upon past experiences, come up with a couple

of different solutions to the problem, and would concentrate on what had to be done next. Analysis of the means of the two treatment groups for planful coping conclude that there are no significant differences in their usage. FSE use similar amounts of planful coping in high and low crowding conditions.

Limitations

One limitation of this project is that there was only one service context (an airport) that was investigated. Multiple service contexts would have provided more generalizable results. The second limitation is that only employee ratings, not management ratings, of performance and displayed emotions were analyzed. Employee ratings may have been more positively biased than management ratings. The third limitation is the possibility of respondent fatigue. Since the survey process took 40 minutes to complete and there were over 150 questions for the respondents to fill out, some employees might have been affected by fatigue or boredom. This fatigue may have led some employees to just put something down.

Implications and Future Research

There are a number of contributions this study makes to the marketing literature. First, it pioneers a new research avenue: impact of customer crowding on front line service employees, an issue that has not yet been investigated in the marketing literature. To date, the focus of the crowding research in marketing has been predominantly on consumers. By examining crowding's influence on employees, this

research has also addressed a call by Bitner (1992) who identified a gap in the literature and advocated research on the environment-employee interactions in the service context. In addition, the present research goes beyond the traditional Stimulus-Organism-Response approach to person-environment interaction and expands the domain of inquiry by incorporating the Lazarus transactional theory into its conceptual framework. The Lazarus model is comprehensive in its scope and well-suited to help explain individual differences in reactions to stressors such as crowding.

From a managerial point of view, a number of implications emerge. The finding that crowding, indeed, is a major stressor for FSE with effects on job performance and displayed emotions needs to be recognized and acted upon by management. This is particularly critical in the industries where employees are in close proximity of customers for extended periods of time. Indeed, Bitner, Booms, and Mohr (1994) single out airlines, hotels, and restaurants as prime examples of industries where this situation exists. Management should implement strategies to control the instigators and consequences of customer crowding stress felt by the FSE. This can be done in at least two ways. First, through careful and creative design and management of the service environment, the physical and social antecedents of the crowding experience can be managed to reduce their negative impact on the FSE. As Bitner (1992) suggests, the floor plan, layout of equipment, and equipment design can all help or hinder employees' performance as well as "the social interaction among and between employees and customers" (p.67). Desired levels of customer density can be maintained by a thoughtful and user-friendly (for both employees and customers) space

planning and design. Environmental psychology literature is replete with specific design tactics that are shown to influence people's perceptions of density and crowding in public and private domains. Ceiling height, color schemes, visual distractors and physical separators are just a few such examples.

The second way management can help with the crowding-instigated stress is by preparing the FSE so that they are cognitively, emotionally and, even physically equipped to deal with it. Training is the major tool here. During the qualitative phase of this research, an often posed question by the FSE was: "How can I cope with the crowds?" In fact more than a few subjects commented on the need for training on how to cope with crowded situations. One specific issue to be addressed in training is the coping strategies. For example, our findings show that escape and confrontive coping methods used by the FSE are detrimental to job performance (and ultimately to service quality). On the positive side, distancing, social support, and planful coping strategies can enhance FSE job performance. Training efforts can focus on how to develop and implement such useful coping strategies so that the FSE can achieve their service goals and desired levels of customer and job satisfaction.

Another contribution of this study is the in-depth investigation of FSE's emotions. This study measured 15 different types of emotions which provided an extensive picture of FSE' affective experiences during a high crowding condition. Understanding what FSE are feeling and experiencing is critical to understanding their behaviors in a service encounter since their behavior and job performance are very likely to be affected by the way they feel on a moment-to-moment basis (Ashkanasy 2002). The negative emotions

(such as anger, disgust, and worry) that the FSE were found to feel in this study may be experienced for long periods of time such as during an entire crowded work day or even throughout an entire busy summer season. This increase in stress and negative emotions over time may accumulate to more stable attitudes such as those about job satisfaction, decision to work productively, and decision to stay with the job (Ashkanasy 2002). In addition, prolonged stress and negative emotions experienced over and over again may also lead to emotional exhaustion. The qualitative responses of our subjects during the busy and crowded Christmas season showed that reported that they felt exhausted, drained, and burned out. It is critical for service organizations to understand these feelings so that they can help regulate and assist with their control. These emotions are critical because they not only impact customer service and job performance but they also may affect feelings toward the organization such as job satisfaction and intention to leave the organization. By understanding FSE's emotions, service organizations can help their employees deal with these emotions thus providing a better organizational climate for their workers and higher service levels to their customers.

A number of important research implications are derived from the findings. One interesting finding is the lack of support for some of the predicted relationships between coping and performance. This seems to arise partly from the scales used to measure the coping construct. Both Folkman and Lazarus coping scales were designed to assess coping with stresses due to major life events, such as diseases and traumatic losses. Using them in the "micro" crowding stress context might have caused some of the inconsistencies in the results. For example confrontive, which could be a successful

strategy in dealing with a disease, does not seem to work well when an FSE has to use it to confront a customer who expects to be pampered, not resisted. Similarly distancing which was predicted to have detrimental effects on FSE job performance emerged to be beneficial. Again, going back to the previous example, distancing is not going to help when one has a disease, but can be very useful for an FSE who is facing a large crowd of anxious customers with no end in sight. Future research should focus on developing a coping scale that is specific to mishaps and hassles faced by the FSE since it can be very useful for researchers working in the service marketing area.

Another research implication is usage of crowding theories to explain the impact of coping strategies on job performance and displayed emotions. As discussed previously, crowding is a state of stress that is brought about by above-optimal levels of arousal due to high density, and individuals try to reduce this arousal by using various tactics one of which is to regain privacy. Distancing can be one such way to achieve an optimal arousal level and thus work well for enhancing job performance and displayed positive emotions. Social support was also discussed previously using behavioral constraint theory. By seeking support the FSE may be trying to increase their behavioral freedom and empowerment through increased knowledge about the existing conditions and available courses of action. More research is needed to understand exactly how and why certain coping strategies work better for the FSE under which circumstances. For example, how do the FSE cope with other stressors such as irate customers? Bitner, Booms, and Mohr (1994) contends that “jaywalking” (Lovelock 1994) customers are plentiful and that more often than not they themselves are the reason for the poor

service they receive. Future research should look into if and how such consumers can become a stressor for FSE and, if so, what coping mechanisms are appropriate to deal with it.

Another interesting research implication emerging from the study is emotional labor. Emotional labor is the degree of manipulation of one's inner feelings or outward behavior to display the appropriate emotion in response to display rules or occupational norms (Blaum and Fong 2000). Since this study measured both the emotions and displayed emotions of FSE, it is possible to analyze the extent of emotional labor that they experienced. Our results showed that while many employees experienced stress and negative emotions in the high crowding condition, they didn't reflect these in their outward or displayed emotions to customer—hence an evidence of emotional labor. There are both managerial and theoretical implications here. Many organizations train their employees to suppress or ignore their emotions in order to provide good customer service. However, suppression of negative emotions may have costs for both the employee and the organization. Even if FSE are able to manage their emotions, there still can be psychological and physical consequences. This is critical to service organizations not only because of the immediate impact on customers (via poor service) but also because of the long-term effects on the employee. For instance, the inability to express negative emotions is one of the strongest predictors of cancer (Blaum and Fong 2000). Thus management should help employees to regulate or redirect their emotions rather than just suppressing them and provide training sessions on how to handle or cope with their emotions. For example, employees can be taught to seek social support in order to vent their emotions, to distance themselves from the situation

so the emotions felt are not quite as strong, and to create a plan in order to produce good emotions about the situation and how to solve it.

From a theoretical perspective, the notion of emotional labor deserves more research. This research has found it to be a real and important construct with managerial significance. More research is needed on the nature and measurement of the construct. What are its antecedents and manifestations? How useful or detrimental is it to employee performance and job satisfaction? Is there an optimal level of emotional labor below and beyond which the FSE are affected negatively? Answers to such questions might help create an organizational climate that fosters the satisfaction of both its customers and its employees.

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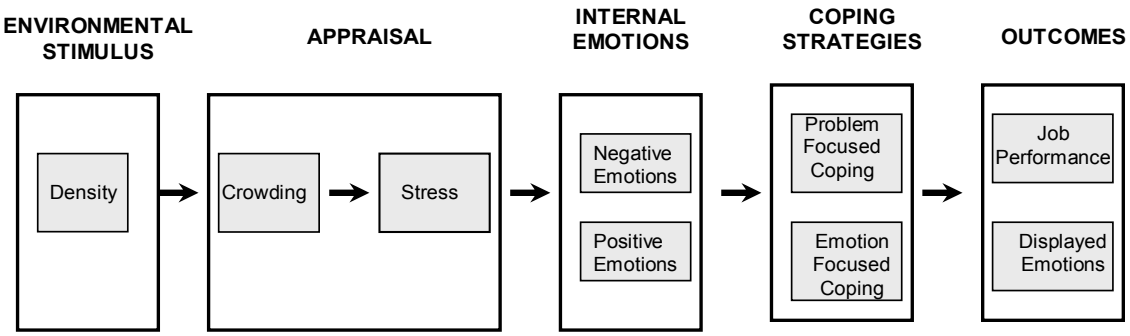
APPENDIX 2.1

Figure 1

Model of Customer Crowding on Employees



APPENDIX 3.1

SCENARIOS

(Background Information to Support Video Manipulations of Density)

High Customer Density

Today is a very heavy day at the airport for Pat, an airport employee. Pat knows that today is a holiday weekend and there are over 110,000 passengers coming through the airport. At the briefing before the shift begins, the supervisor announces that there are thunderstorms and bad weather in the both the Northeast and City X which have caused a large number of flight cancellations. The supervisor tells everyone that it looks like this will continue all day long. Pat walks out and sees the rows and rows of passengers waiting in line. The number of passengers waiting in line rapidly increases until the floor can no longer be seen because of all the passengers. Pat looks up occasionally throughout the shift only to see the unending flow of people grow and grow.

Low Customer Density

Today is a light day at the airport for Pat, an airport employee. Although today is a holiday weekend there are only 60,000 passengers coming through the airport. At the briefing before the shift begins, the supervisor announces that there are thunderstorms and bad weather in both the Northeast and City X which have caused a large number of flight cancellations and delays. The supervisor tells everyone that it looks like this will continue all day long. Pat walks out and sees that the number of passengers waiting in line is pretty slim. There are only a few passengers in each line. Pat looks up occasionally throughout the shift and only sees a light but steady flow of people in line.

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APPENDIX 3.2

Georgia State University Dissertation Survey

Thank you for agreeing to participate in this project! I greatly appreciate your help.

In a moment, you will be read a scenario and then watch a four minute video clip. Please closely watch the video clip and imagine yourself and your fellow employees working in the environment shown on the screen. After watching the video you will be asked to complete a questionnaire.

Please remember that there are no right or wrong answers to the questions. Please answer the questions thoughtfully and honestly. The value of this research depends on the seriousness with which you approach this task. It is very important that you answer every question. All responses are anonymous.

THANK YOU IN ADVANCE FOR YOUR PARTICIPATION!

Please read the paragraph below.

A Day at the Airport

Today is a light day at the airport for Pat, an airport employee. Although today is a holiday weekend there are only 60,000 passengers coming through the airport. At the briefing before the shift begins, the supervisor announces that there are thunderstorms and bad weather in both the Northeast and City X which have caused a large number of flight cancellations and delays. The supervisor tells everyone that it looks like this will continue all day long. Pat walks out and sees that the number of passengers waiting in line is pretty slim. There are only a few passengers in each line. Pat looks up occasionally throughout the shift and only sees a light but steady flow of people in line.

STOP AND WATCH VIDEO

On the following pages are some questions for you to answer. Please answer the questions according to how one of your fellow coworkers named Pat would feel and behave in the described situation.

Using the scene depicted in the video , please answer the following questions on how Pat, a coworker serving customers would feel in the situation?

	Extremely						Not at All
1. How crowded would Pat feel by the number of customers in the service area?	1	2	3	4	5	6	7
2. How confined would Pat feel?	1	2	3	4	5	6	7
3. How restricted would Pat feel?	1	2	3	4	5	6	7

Again, thinking about your coworker Pat in the depicted video scene, answer the following questions as to how Pat would feel.

	Strongly Agree						Strongly Disagree
4. The airport seemed very crowded to Pat.	1	2	3	4	5	6	7
5. The airport was too busy.	1	2	3	4	5	6	7
6. There were many passengers around the service area.	1	2	3	4	5	6	7
7. Pat would feel that there are too many people around the service area.	1	2	3	4	5	6	7
8. Pat would feel tension by the number of passengers around the service area.	1	2	3	4	5	6	7
9. The number of passengers around the service area would be a source of distress for Pat.	1	2	3	4	5	6	7
10. The number of passengers around the service area would be a source of anxiety for Pat.	1	2	3	4	5	6	7
11. Overall, Pat would feel very stressful in the situation described and shown in the video.	1	2	3	4	5	6	7

12. On a scale of 1-10, please indicate the amount of stress Pat would feel in the situation.

Low Stress									High Stress
1	2	3	4	5	6	7	8	9	10

13. Please describe Pat's level of stress in the situation shown in the video and in the scenario given. _____

_____

THINK BACK TO THE VIDEO YOU SAW AND TO THE SCENARIO YOU READ.

NOW READ THE STATEMENTS BELOW AND DECIDE HOW OFTEN PAT WOULD ENGAGE IN THE FOLLOWING BEHAVIORS ON A DAY WHEN THE WORK ENVIRONMENT IS LIKE THE ONE SHOWN ON THE SCREEN.

PLEASE BE HONEST WITH YOUR ASSESSMENT.

	Always						Never
1. Giving prompt service to every customer.	1	2	3	4	5	6	7
2. Being courteous to every customer.	1	2	3	4	5	6	7
3. Answering all questions completely for every customer.	1	2	3	4	5	6	7
4. Giving individual attention to every customer.	1	2	3	4	5	6	7
5. Never being too busy to respond every customer's questions.	1	2	3	4	5	6	7
6. Responding to all customer's requests, despite his/her work loads.	1	2	3	4	5	6	7
7. Providing accurate or correct information to all customers.	1	2	3	4	5	6	7
8. Performing job accurately.	1	2	3	4	5	6	7
9. Servicing all customers with his/her best interest in mind.	1	2	3	4	5	6	7
10. Listening attentively to identify and understand the concerns of every customer.	1	2	3	4	5	6	7
11. Working out solutions to every customer's questions or concerns.	1	2	3	4	5	6	7
12. Being friendly to all customers.	1	2	3	4	5	6	7
13. Asking every customer good questions and listening to find what every customer wants.	1	2	3	4	5	6	7
14. Chatting with customers to make them feel special.	1	2	3	4	5	6	7
15. Suggesting options to every customer that he/she might like but did not think of.	1	2	3	4	5	6	7

Overall, how would you rate the quality of service provided by Pat TO EVERY CUSTOMER when the work environment is like the one shown on the screen and described in the given scenario?

Excellent						**Poor**
1	2	3	4	5	6	7

THINK BACK AGAIN TO THE VIDEO AND THE SCENARIO YOU READ AND REMEMBER WHAT PAT'S WORKING ENVIRONMENT IS LIKE ON THAT DAY.

NEXT, READ THE FOLLOWING STATEMENTS AND RATE HOW OFTEN PAT WILL PERFORM THE FOLLOWING BEHAVIORS FOR EVERY CUSTOMER ON A DAY LIKE THE ONE DESCRIBED BY THE VIDEO AND SCENARIO.

AGAIN, REMEMBER THE WORK ENVIRONMENT FOR PAT TODAY AND PLEASE BE HONEST WITH YOUR ASSESSMENT.

	Always						**Never**
1. Greet each customer with a "hello" or "How are you today?"	1	2	3	4	5	6	7
2. Address each customer by his/her name during the service transaction.	1	2	3	4	5	6	7
3. Keep a smiling/pleasant face to every customer during the service transaction.	1	2	3	4	5	6	7
4. Keep a steady eye contact with each customer, regardless of customer reciprocation.	1	2	3	4	5	6	7
5. Thank or offer a polite verbal comment to every customer at the end of the transaction.	1	2	3	4	5	6	7
6. Manifest a positive attitude that is encouraging and friendly to every customer.	1	2	3	4	5	6	7
7. Converse or chat with every customer on issues not directly relevant to the transaction.	1	2	3	4	5	6	7

AGAIN THINK BACK TO THE VIDEO YOU SAW AND TO THE SCENARIO YOU READ.

PLEASE EVALUATE HOW A CUSTOMER WOULD FEEL ABOUT THEIR EXPERIENCE WITH PAT ON A DAY WHEN THE WORK ENVIRONMENT IS LIKE THE ONE SHOWN ON THE SCREEN.

PLEASE BE HONEST WITH YOUR ASSESSMENT.

	Totally Agree						**Totally Disagree**
1. Most encounters with Pat will be one of the best encounters a customer could have.	1	2	3	4	5	6	7
2. Most encounters with Pat will be exactly what the customer needs.	1	2	3	4	5	6	7
3. Most customers will be very satisfied with the encounter with Pat.	1	2	3	4	5	6	7
4. Most customers will be very happy with the encounter with Pat.	1	2	3	4	5	6	7
5. Most customers will truly enjoy their encounter with Pat.	1	2	3	4	5	6	7
6. Most encounters with Pat will be a great experience for the customer.	1	2	3	4	5	6	7

TODAY, all customers would find the encounter with Pat to be:

Excellent						**Poor**
1	2	3	4	5	6	7

OVERALL, how would CUSTOMERS rate the level of service provided by Pat when the work environment is like the one shown on the screen and described in the given scenario TODAY?

Excellent						**Poor**
1	2	3	4	5	6	7

THINK BACK AGAIN TO THE VIDEO AND TO THE SCENARIO.

NOW EVALUATE THE JOB PERFORMANCE OF PAT ON A DAY LIKE THE ONE SHOWN ON THE VIDEO AND DESCRIBED IN THE SCENARIO.

DO NOT EVALUATE HOW PAT USUALLY PERFORMS BUT ONLY HOW PAT WOULD PERFORM DURING THE SITUATION DESRIBED IN THE SCENARIO AND SHOWN ON THE SCREEN.

	Excellent						Very Poor
1. Amount of work accomplished today.	1	2	3	4	5	6	7
2. Quality of work accomplished today.	1	2	3	4	5	6	7
3. Ability to not make errors today.	1	2	3	4	5	6	7
4. Taking responsibility today	1	2	3	4	5	6	7
5. Creativity for today	1	2	3	4	5	6	7
6. Getting along with others today.	1	2	3	4	5	6	7
7. Dependability for today	1	2	3	4	5	6	7
8. Overall performance for today	1	2	3	4	5	6	7

THINK BACK TO THE VIDEO YOU SAW AND TO THE SCENARIO YOU READ.

NOW READ THE STATEMENTS BELOW AND DECIDE HOW OFTEN PAT WOULD ENGAGE IN THE FOLLOWING BEHAVIORS ON A DAY WHEN THE WORK ENVIRONMENT IS LIKE THE ONE SHOWN ON THE SCREEN.

PLEASE BE HONEST WITH YOUR ASSESSMENT.

	Always						Never
1. Gives extra effort to handle the customers' requests.	1	2	3	4	5	6	7
2. Answers the customers' questions completely.	1	2	3	4	5	6	7
3. Makes customers feel special.	1	2	3	4	5	6	7
4. Gives individual attention to customers.	1	2	3	4	5	6	7
5. Is sensitive to all of the customers' needs.	1	2	3	4	5	6	7
6. Anticipates the customers' needs and wants.	1	2	3	4	5	6	7

BELOW IS A LIST OF FEELINGS PAT MIGHT HAVE FELT WHILE WORKING ON A DAY LIKE THE ONE DESCRIBED IN THE VIDEO AND SHOWN ON THE SCREEN.

PLEASE RATE THE EXTENT TO WHICH PAT WOULD FEEL EACH OF THESE TODAY.

	Very Much						**Not at All**
Happy	1	2	3	4	5	6	7
Delighted	1	2	3	4	5	6	7
Joyful	1	2	3	4	5	6	7
Discouraged	1	2	3	4	5	6	7
Sad	1	2	3	4	5	6	7
Depressed	1	2	3	4	5	6	7
Alert	1	2	3	4	5	6	7
Attentive	1	2	3	4	5	6	7
Concentrating	1	2	3	4	5	6	7
Mad	1	2	3	4	5	6	7
Angry	1	2	3	4	5	6	7
Irritated	1	2	3	4	5	6	7
Guilty	1	2	3	4	5	6	7
Blameworthy	1	2	3	4	5	6	7
Regret	1	2	3	4	5	6	7
Shy	1	2	3	4	5	6	7
Ashamed	1	2	3	4	5	6	7
Bashful	1	2	3	4	5	6	7
Disgusted	1	2	3	4	5	6	7
Feeling of distaste	1	2	3	4	5	6	7
Unpleasant	1	2	3	4	5	6	7
Disregard	1	2	3	4	5	6	7
Scornful	1	2	3	4	5	6	7
Defiant	1	2	3	4	5	6	7
Astonished	1	2	3	4	5	6	7
Surprised	1	2	3	4	5	6	7
Amazed	1	2	3	4	5	6	7
Afraid	1	2	3	4	5	6	7
Anxious	1	2	3	4	5	6	7
Threatened	1	2	3	4	5	6	7

	Very Much						Not at All
Intimidated	1	2	3	4	5	6	7
Humiliated	1	2	3	4	5	6	7
Embarrassed	1	2	3	4	5	6	7
Nervous	1	2	3	4	5	6	7
Worried	1	2	3	4	5	6	7
Tense	1	2	3	4	5	6	7
Irritated	1	2	3	4	5	6	7
Frustrated	1	2	3	4	5	6	7
Peaceful	1	2	3	4	5	6	7
Calm	1	2	3	4	5	6	7
Fulfilled	1	2	3	4	5	6	7
Contented	1	2	3	4	5	6	7

Please read each item below and indicate to what extent Pat would use it in the described situation. Please think about each statement carefully and please <u>DO NOT SKIP</u> any questions.

	Very Much						Not at All
1. Pat would try to feel better by eating, drinking, smoking, and so forth.	1	2	3	4	5	6	7
2. Pat would take it out on other people.	1	2	3	4	5	6	7
3. Pat would try to keep feelings to self.	1	2	3	4	5	6	7
4. Pat would try to keep feelings from interfering with other things too much.	1	2	3	4	5	6	7
5. Pat would wish that the situation would go away or somehow be over with.	1	2	3	4	5	6	7
6. Pat would go over in his/her mind about what should be done.	1	2	3	4	5	6	7
7. Pat would think about how a person he/she admires would handle the situation and use that as model.	1	2	3	4	5	6	7
8. Pat would draw upon past experiences from similar situations before.	1	2	3	4	5	6	7
9. Pat would come up with a couple of different solutions to the problem.	1	2	3	4	5	6	7
10. Pat would know what had to be done, so would redouble efforts to make things work.	1	2	3	4	5	6	7

	Very Much						Not at All
11. Pat would just concentrate on what had to be done next – the next step.	1	2	3	4	5	6	7
12. Pat would remind himself/herself that work isn't everything.	1	2	3	4	5	6	7
13. Pat wouldn't let it get to him/her; would refuse to think about it too much.	1	2	3	4	5	6	7
14. Pat would let feelings out somehow.	1	2	3	4	5	6	7
15. Pat would devote more time and energy to doing the job.	1	2	3	4	5	6	7
16. Pat would try to forget the whole thing.	1	2	3	4	5	6	7
17. Pat would try to work faster and more efficiently.	1	2	3	4	5	6	7
18. Pat would accept the situation because there is nothing Pat can do to change it.	1	2	3	4	5	6	7
19. Pat would make a plan of action and follow it.	1	2	3	4	5	6	7
20. Pat would talk to someone about how he/she was feeling.	1	2	3	4	5	6	7
21. Pat would go on as if nothing happened.	1	2	3	4	5	6	7
22. Pat would try to be very organized in order to keep on top of things.	1	2	3	4	5	6	7
23. Pat would ask a colleague that he/she respects for advice.	1	2	3	4	5	6	7
24. Pat would make light of the situation and refuse to get too serious about it.	1	2	3	4	5	6	7
25. Pat would try to look on the bright side of things.	1	2	3	4	5	6	7
26. Pat would try to think that he/she is a winner, someone who always comes through.	1	2	3	4	5	6	7
27. Pat would think about the biggest challenges and what needed to be dealt with first.	1	2	3	4	5	6	7
28. Pat would give it the best effort to do what is requested of him/her.	1	2	3	4	5	6	7
29. Pat would request help from people who have power to do something for him/her.	1	2	3	4	5	6	7

	Very Much						Not at All
30. Pat would tell self that time takes care of situations like this.	1	2	3	4	5	6	7
31. Pat would talk to someone to find out more about the situation.	1	2	3	4	5	6	7
32. Pat would avoid being with people in general.	1	2	3	4	5	6	7
33. Pat would try not to act too hastily.	1	2	3	4	5	6	7
34. Pat would express anger to the person(s) who caused the problem.	1	2	3	4	5	6	7
35. Pat would do one's best to get out of situation gracefully.	1	2	3	4	5	6	7

Next are some questions about YOURSELF. Please answer the following questions about yourself and NOT your coworker Pat

1. **People would describe you as being**
   □Soft spoken and reserved OR □Energetic and bubbly

2. **Are you usually**
   □Quiet OR □Talkative

3. **Which describes you best**
   □Reserved OR □Outgoing

4. **If you were at a party, would you**
   □Talk to your closest friends OR □Talk to most of the people

5. **If you were waiting for a bus with a stranger, would you rather**
   □Read something OR □Make conversation

6. **Which is worse, people who**
   □Talk too much OR □Talk too little

7. **It is more fun to be**
   □Doing interesting work OR □Part of a good team

8. **Would people say you are**
   □Hard to get to know OR □Easy to get to know

9. **Adjusting to new things is**
   □Hard for you OR □Easy for you

10. **Which describes you best**
    □Flexible OR □Set in your ways

Turn Page Over →

Finally, we have just a few demographic questions about you. The following items are for classification purposes only. Responses are anonymous and confidential.

1. Please indicate your gender.

__Male __Female

2. Please indicate your year of birth: 19 __ __

3. In what type of environment have you lived for the majority of your life?

__Large city __Small city __Rural area __Other (Please specify)_____

4. Please indicate how long you have been with Company X.

_____ # of years OR _____number of months (if less than 1 year)

5. Please indicate how long you have been in your current position.

_____ # of years OR _____ number of months (if less than 1 year)

6. How long have you been an airport employee with Company X or with another company?

_____ # of years OR _____ number of months (if less than 1 year)

7. Please indicate you're your ethnic background

__Aboriginal
__African American
__Asian
__Caucasian
__Hispanic
__Indian (Asian)
__Mediterranean
__Middle Eastern
__Native American
__Pacific Islander
__Other, Please specify_____

	Very Much								**Not at All**
8. Please indicate how realistic the situation depicted in the video and scenario is to your work environment.	1	2	3	4	5	6	7	8	9
9. I have never experienced a situation like the one described in the scenario and in the video.	1	2	3	4	5	6	7	8	9
10. It is possible to encounter situations like the one described in the scenario and in the video.	1	2	3	4	5	6	7	8	9

APPENDIX 3.3

Table 1
Verbatim on Psychological Effects

Uncontrollable Causes	**Uncontrollable Causes**
1. Unplanned rush	1. Weather
When school bus of kids drive up, it's bad.	2. Technical problems
Unexpected basketball team, football team	3. Other organizations
2.Sickness of Employees	
We were short on people due to sicknesses	
Customer Attitude	**Customer Attitude**
With difficult customers, you get frustrated	Had to deal with unhappy customers and lots of them
Depends on customer's attitude	Customers were yelling at us
If customers have a bad attitude it makes me grumpy	Customers pissed off. No one wants to listen
Bad mood customers make me feel frustrated	Customers were very angry and started yelling and cursing
Co-Workers' Behavior	**Co-Workers' Behavior**
If coworkers not moving quickly, get frustrated	Someone would not do their fare share. I would feel resentment
There are time when get edgy with coworkers	Get annoyed when they're walking away and not doing what supposed to do
Sense more tension when crowded	Easier to snap at each other during this time
Someone taking too long of bathroom break or making a personal call when crowded, I get annoyed.	People who back away (from crowd), I get angry at them and think why aren't you doing you job

Table 2
Verbatim on Information Overload Effects

Didn't spend as much time with customers. Don't have a chance to chat.	Talk less with customers and would get less personal with them
You can be friendly but not as able to make them feel as welcomed.	Rushed people through line but didn't do all things
Don't get to deal with customer on personal basis	Cut out the talk so can work faster
Not a lot of interaction because of time	Only give them what they need and keep to basics because of line
They don't get as much attention as they want	When crowded, only the essential and more to the point

Table 3
Verbatim on Affective States

Hectic. Pulling orders. Crying kids and spilled drinks.	Felt tension and pressure
When overwhelming, it can be stressful Store packed with people flying around.	Anxiety level would grow
If everything is not flowing, frustrating.	Fear that you won't be able to perform
On Mondays, rested and okay but by Thursday or Friday, pretty well had it by then.	Get really agitated. Become short tempered, frustrated. Tend to blow up.
Some days you think will they ever quit coming?	Stressed
Was working on task and then must go help with people in line – aggravating.	More short tempered and impatient
There is pressure because of not wanting to fall behind.	Little bit nervous. Think they are going to kill you.

Table 4
Verbatim on Behavioral Effects

1. Concentration	**4. Comments to Customers**
Difficult to concentrate when trying to do two or three things at one time.	Said things shouldn't have said. Snapped
Can't stay focused like want to	Talk less with customers
2. Mistakes	Stress and anger management toward customer and situation
Tended to make more mistakes. Would forget important entries.	Straight and to the point with customer
Make more mistakes. Not paying attention to detail	Decrease communication with customer
3. Productivity	
Try to go too fast	**5. Miscellaneous**
Increased productivity but quality of responses impacted	Some employees shaking because of crowd. Can't breathe.

Table 5
Verbatim on Physical Effects

Tension Headaches	Lower back ache
Headaches very frequent	Blood pressure rose. Cheeks were rosy colored.
Get cuts and scrapes because of rushing around	Others would catch more colds if didn't know how to deal with stress
Fatigue	Tight muscles – neck and shoulders
Dizzy if run around too much	Migraines from tension
	Sick to stomach
	We stay sick
	Others break down and cry
	High blood pressure

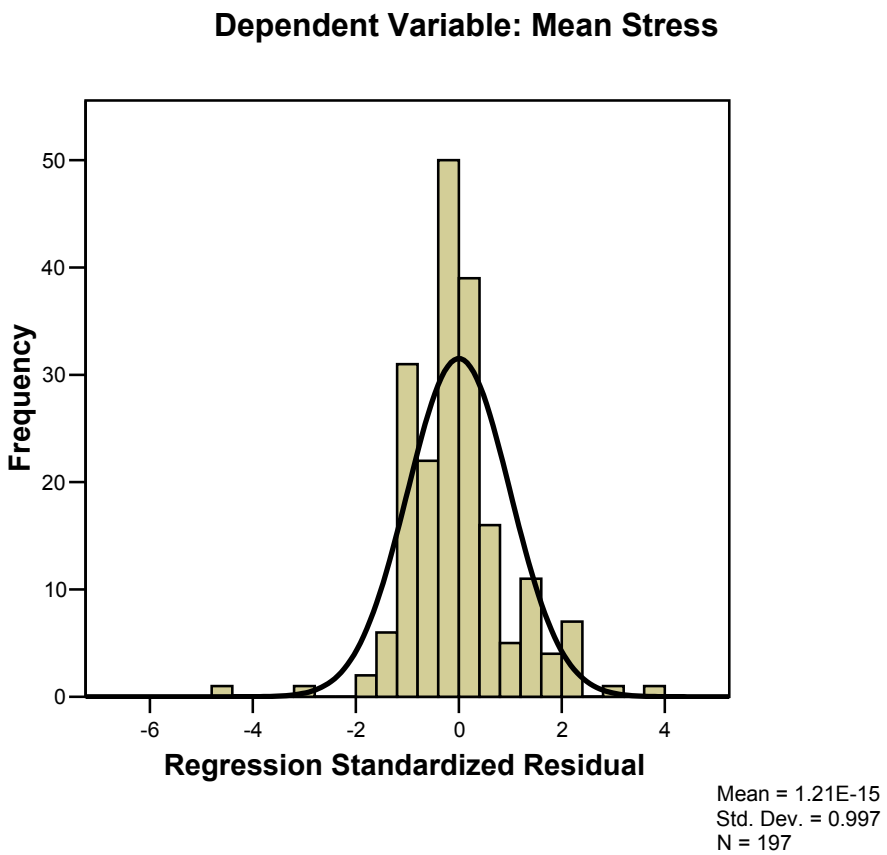
Table 6
Verbatim on Coping Strategies

1. Focusing	**7. Talk to Self**
Deal with the one person in front of you	Tell self to be patient
Stay focused on the job	I think to myself "I've got to do what I have to do"
Focus on getting to next person	Tell self they'll be gone soon
2. Prepare	**8. Dream**
Set self up for it	Keep thinking about when be at home on couch with beer
Mentally prepare	
Have to plan the situation and have game plan	
3. Block Out	**9. Show Control**
Put wall and block stuff	Be authoritative. Show them have control over situation
Try to block out everything else around	Be firm with voice. Control them that way.
Take yourself mentally out of crowd	
Detach myself	
4. Humor	**10. Drink**
Crack jokes	Like to go home and have glass of wine
Smile and tease customer	
Get goofy	
5. Multi-task/Increase Pace	**11. Avoidance of Crowds**
Try to do two things at once	Employees won't approach long line
Try to speed up	Back away
	During days off, don't want to be in crowded area
6. Relax or Meditate	**12. Miscellaneous**
Do light stretches and sing to music	Cut corners.
Make extra effort to meditate	Hide emotions
Go home and relax	Have songs playing in head

Appendix 4.1
Examination of Residuals

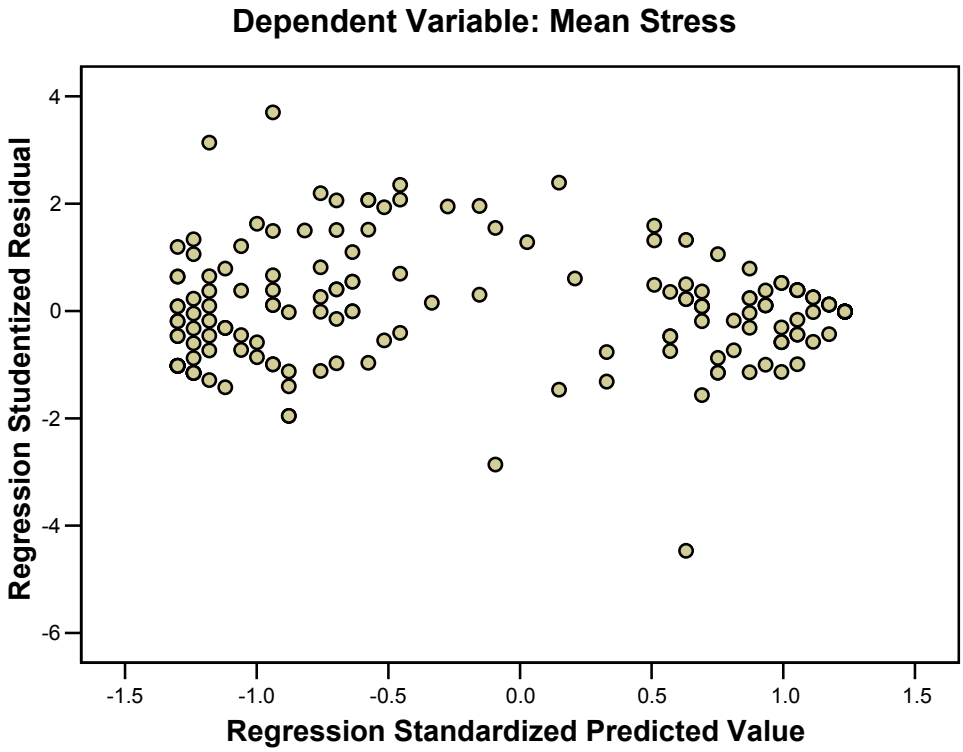
Appendix 4.1 A
Assumptions of Regression of Dependent Variable Stress

1. Histogram of Standardized Residuals



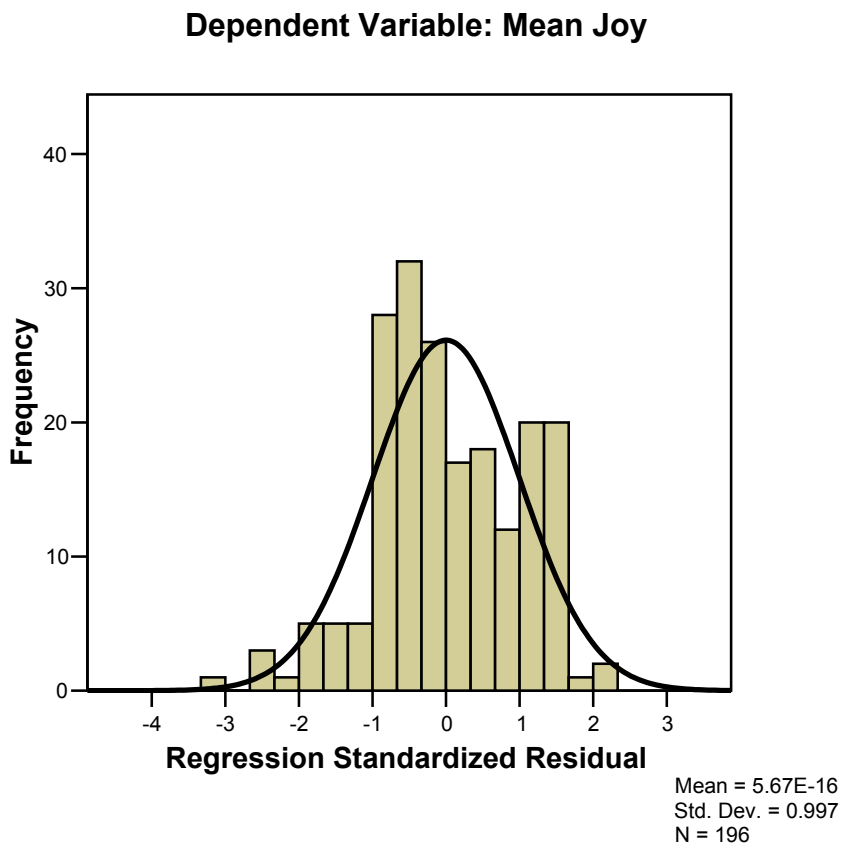
Appendix 4.1 A (continued)
Assumptions of Regression of Dependent Variable Stress

2. <u>Scatter plot of Standardized Residuals</u>



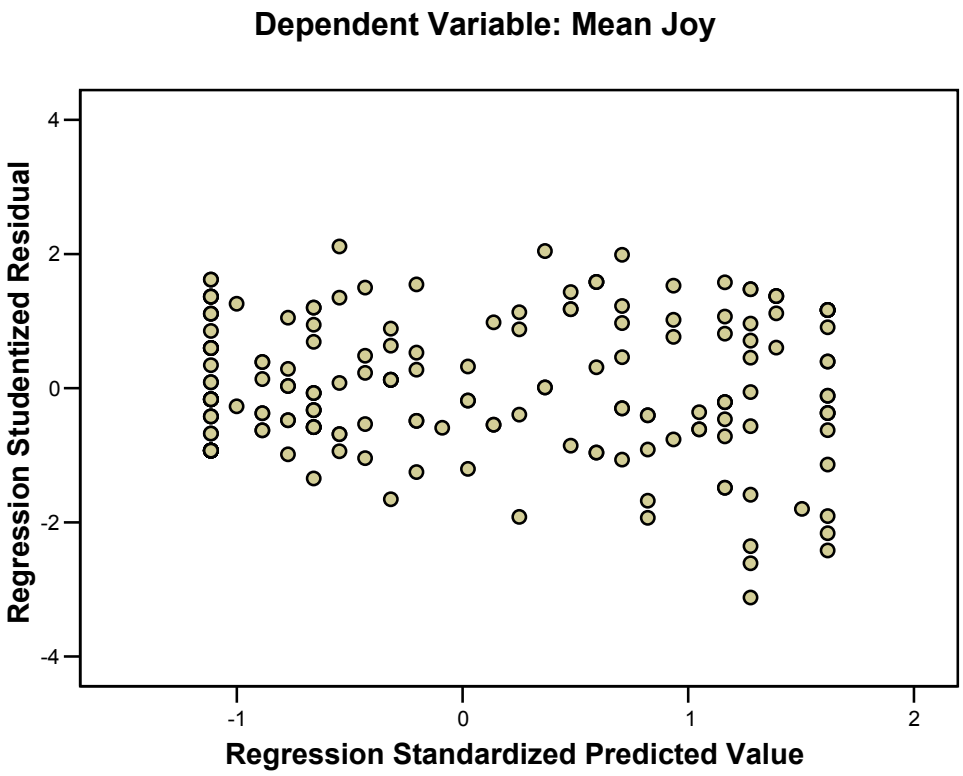
Appendix 4.1 B
Assumptions of Regression of Dependent Variable Joy

1. Histogram of Standardized Residuals



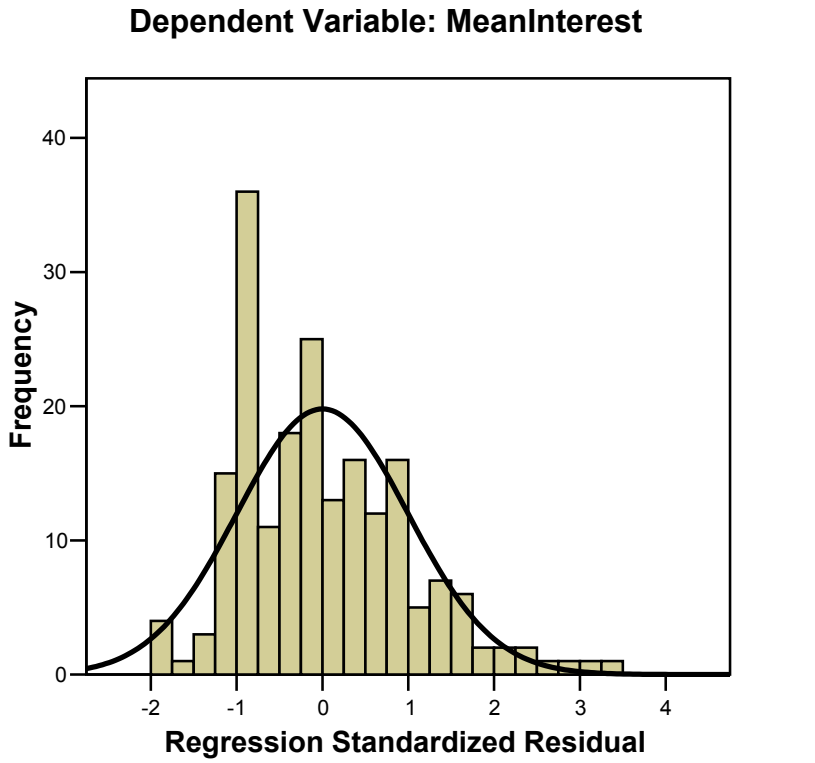
Appendix 4.1 B (continued)
Assumptions of Regression of Dependent Variable Joy

1. **Scatter plot of Standardized Residuals**



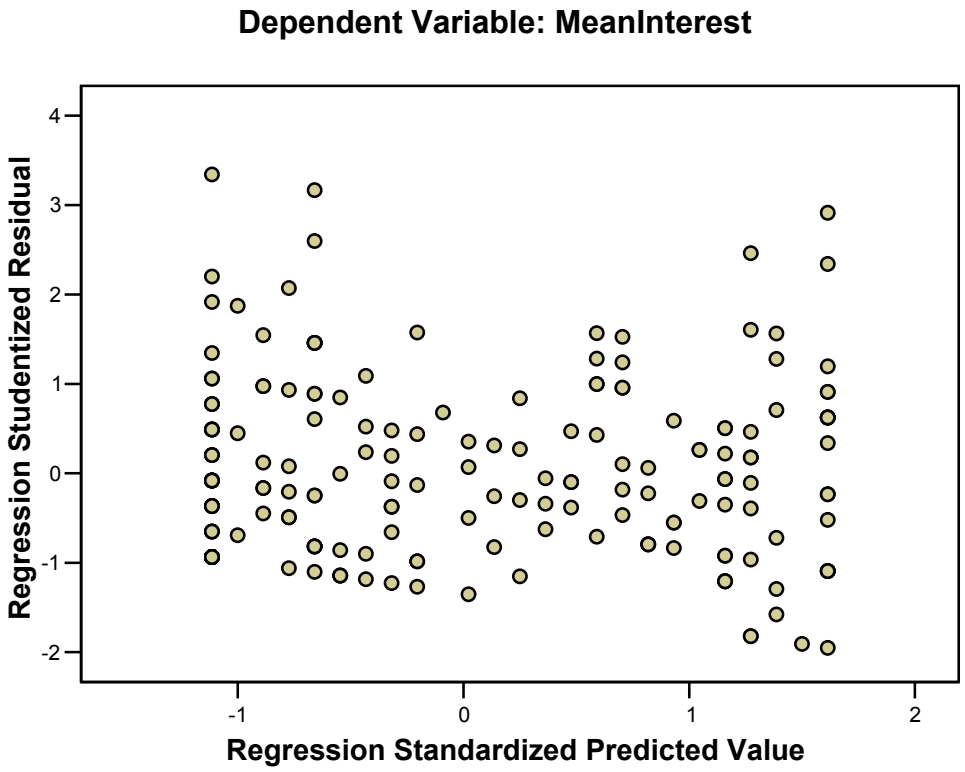
Appendix 4.1 C
Assumptions of Regression of Dependent Variable Interest

1. **Histogram of Standardized Residuals**



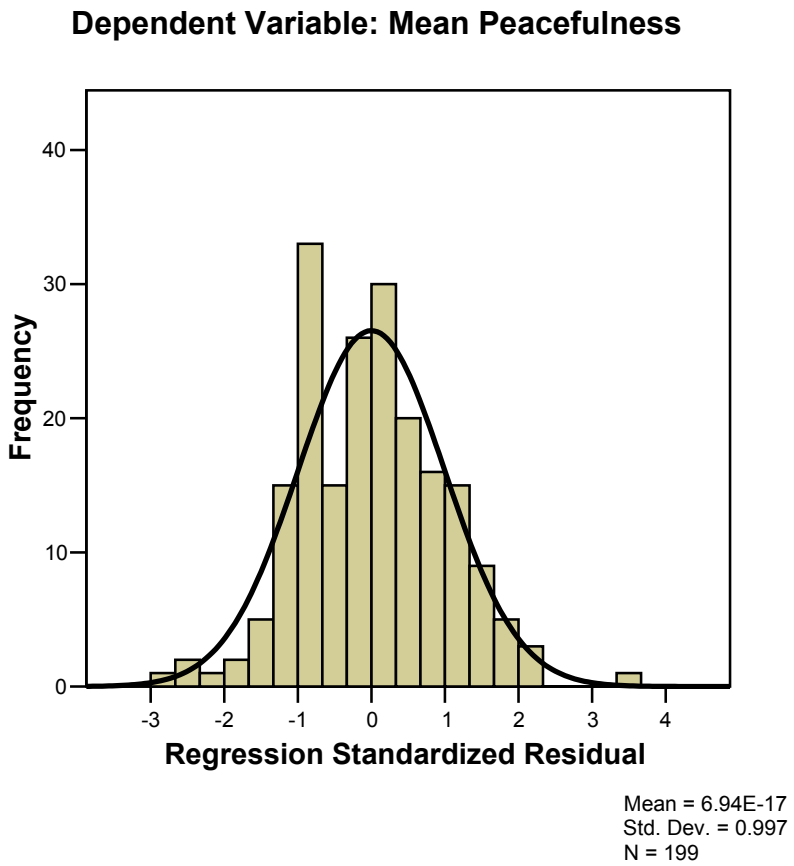
Appendix 4.1 C (continued)
Assumptions of Regression of Dependent Variable Interest

2. <u>Scatter plot of Standardized Residuals</u>



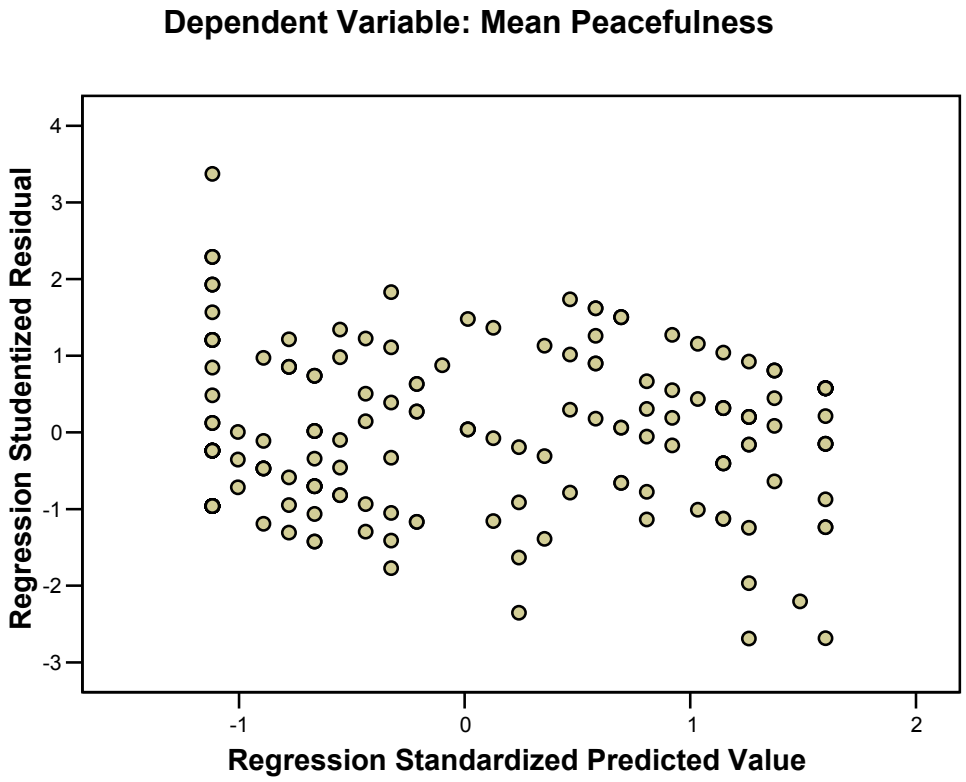
Appendix 4.1 D
Assumptions of Regression of Dependent Variable Peacefulness

1. Histogram of Standardized Residuals



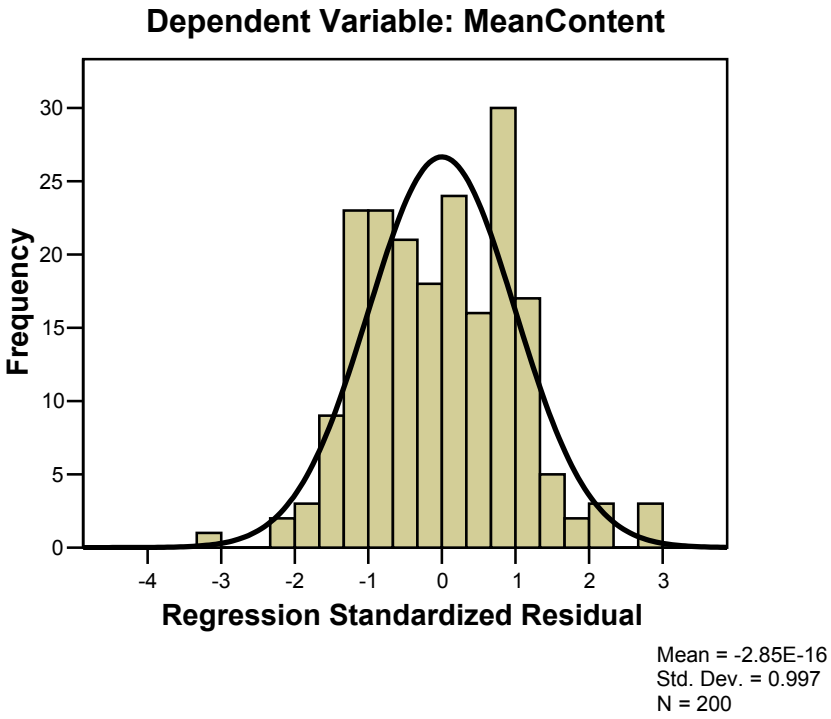
Appendix 4.1 D (continued)
Assumptions of Regression of Dependent Variable Peacefulness

2. <u>Scatter plot of Standardized Residuals</u>



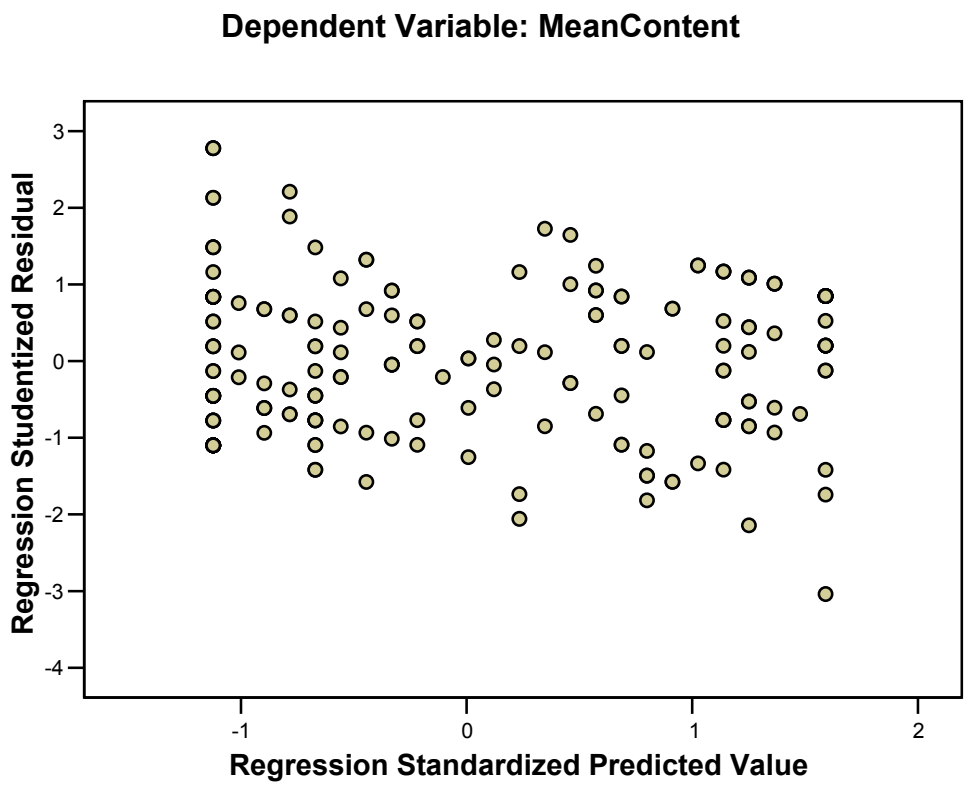
Appendix 4.1 E
Assumptions of Regression of Dependent Variable Content

1. <u>Histogram of Standardized Residuals</u>



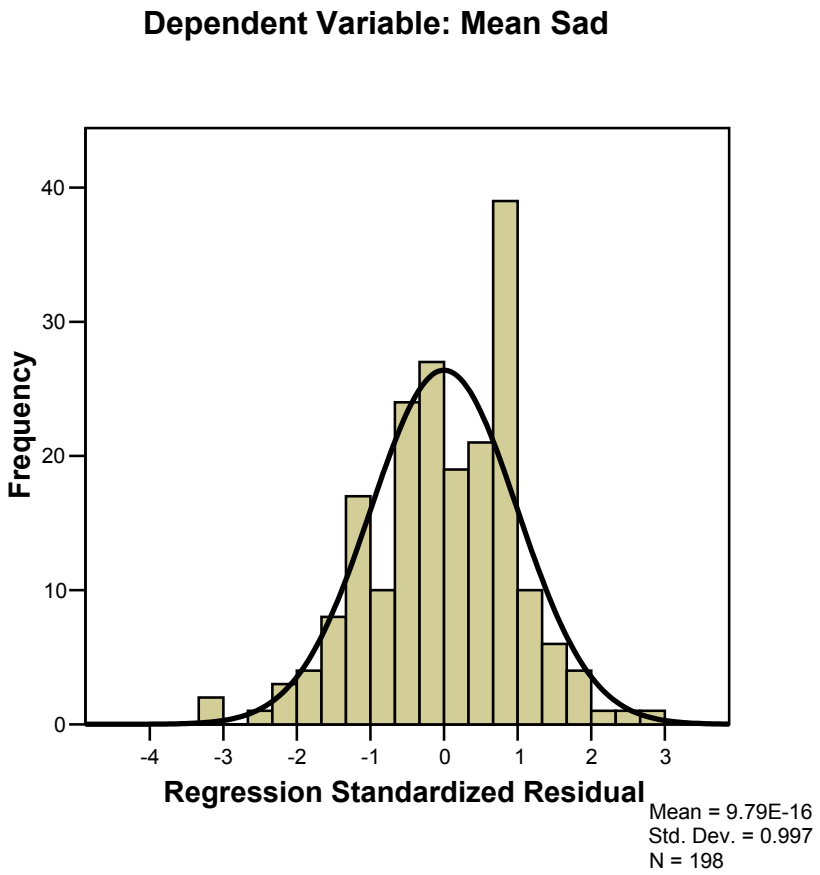
Appendix 4.1 E (continued)
Assumptions of Regression of Dependent Variable Content

2. <u>Scatter plot of Standardized Residuals</u>



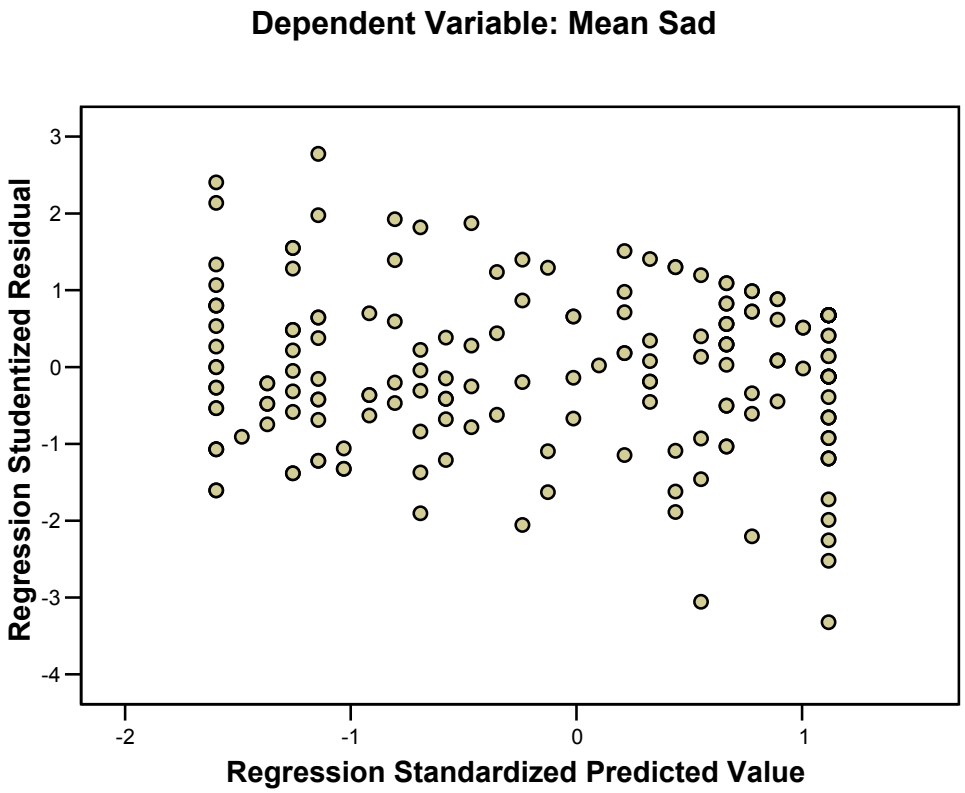
Appendix 4.1 F
Assumptions of Regression of Dependent Variable Sad

1. <u>Histogram of Standardized Residuals</u>



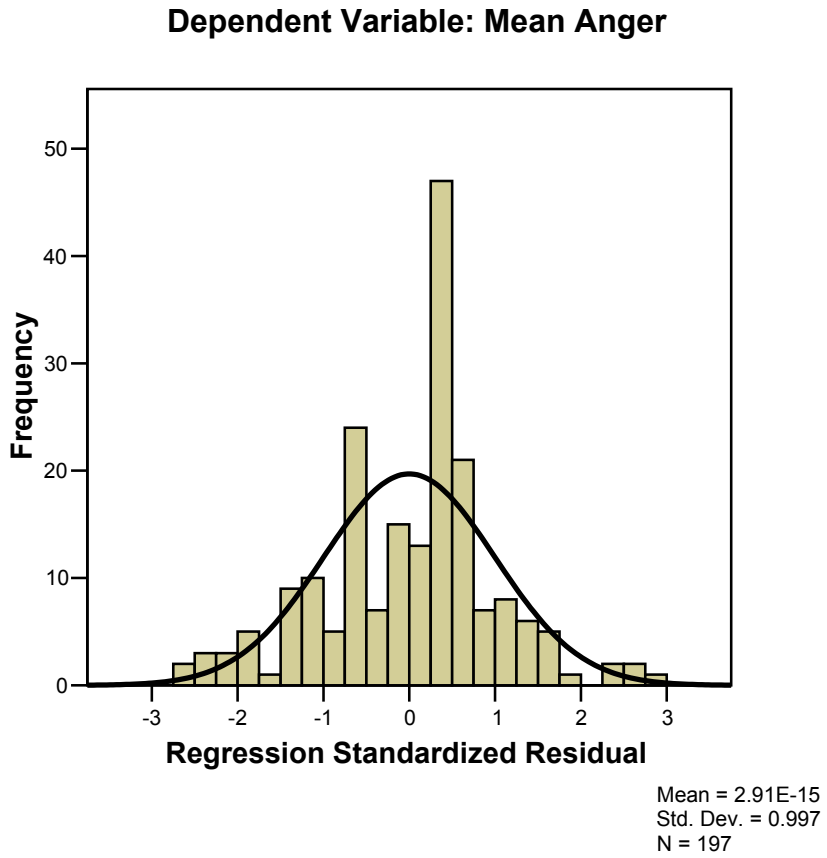
Appendix 4.1 F (continued)
Assumptions of Regression of Dependent Variable Sad

2. <u>Scatter plot of Standardized Residuals</u>



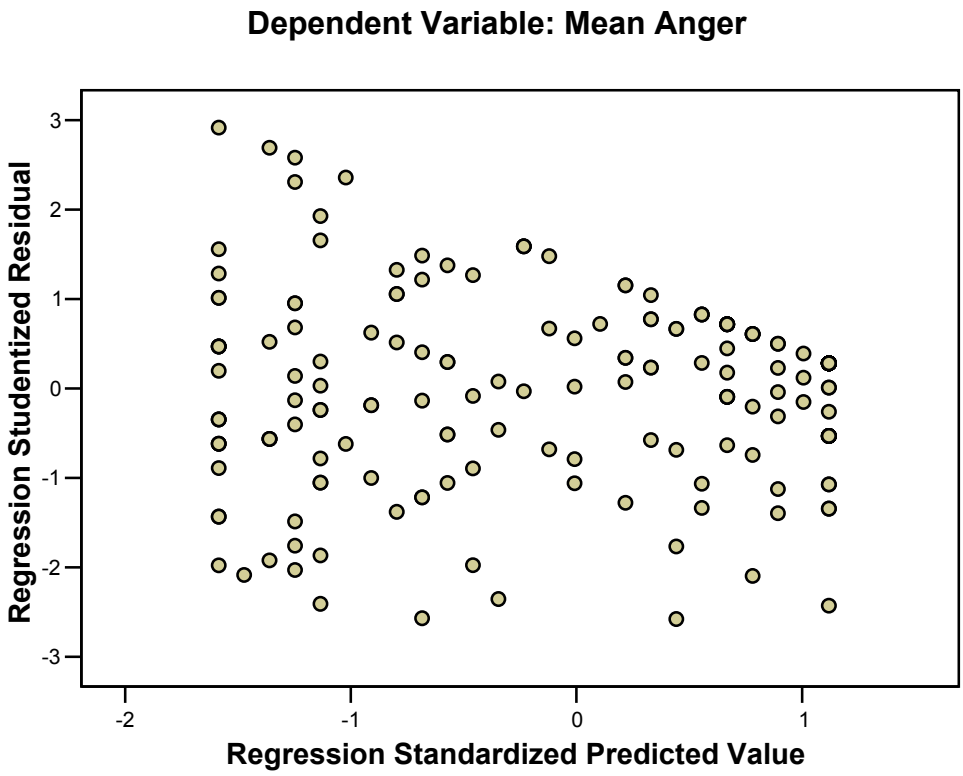
Appendix 4.1 G
Assumptions of Regression of Dependent Variable Anger

1. **Histogram of Standardized Residuals**



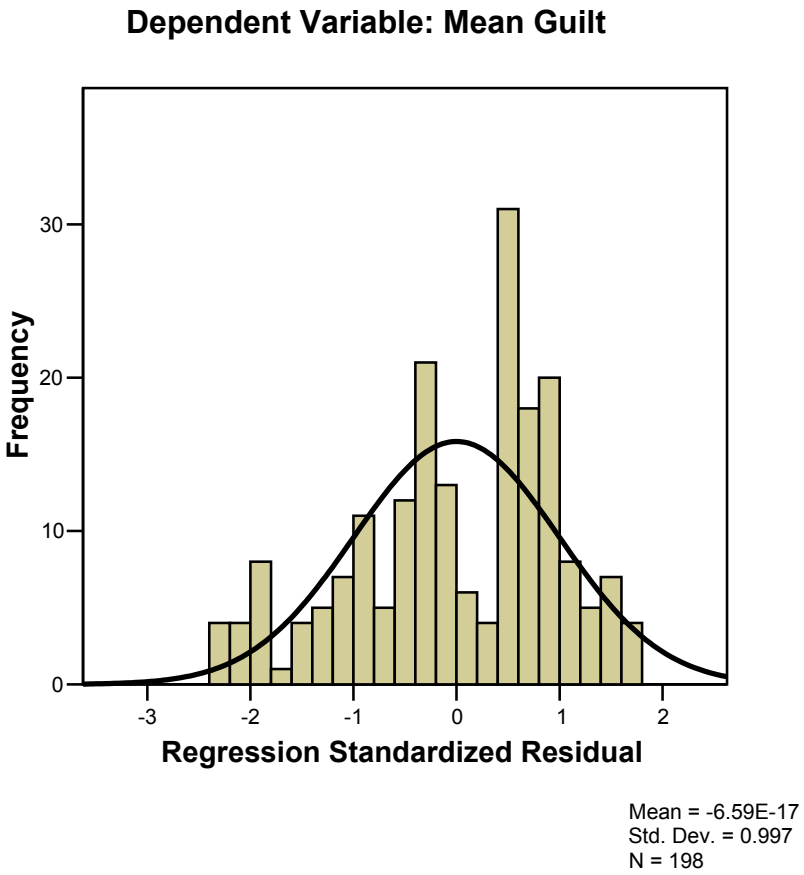
Appendix 4.1 G (continued)
Assumptions of Regression of Dependent Variable Anger

2. <u>Scatter plot of Standardized Residuals</u>



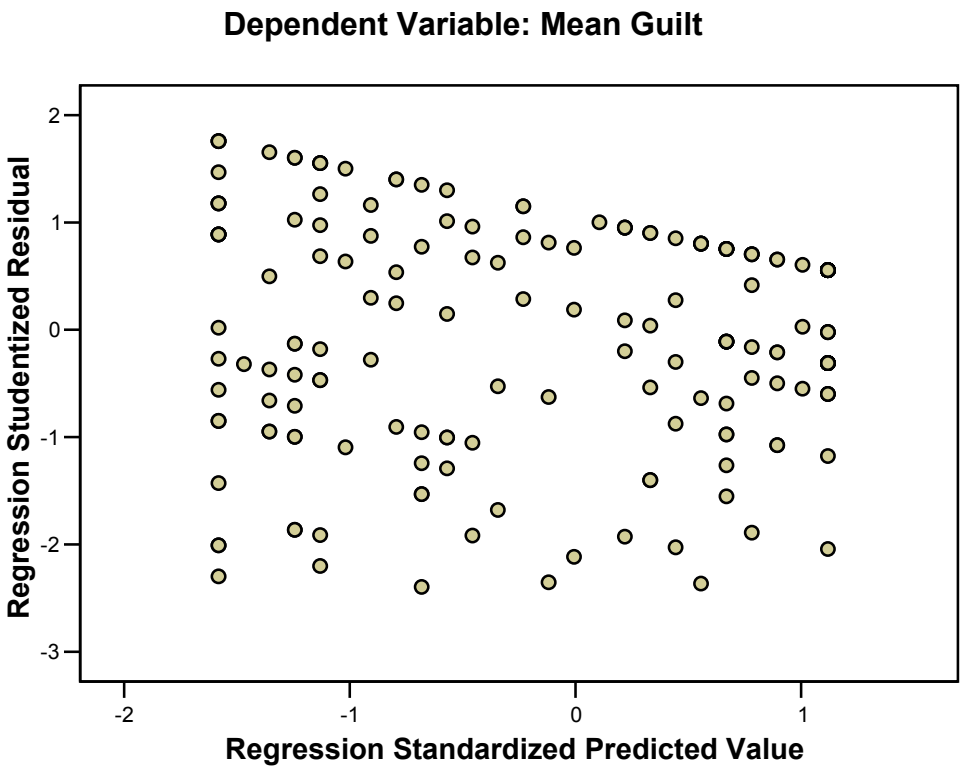
Appendix 4.1 H
Assumptions of Regression of Dependent Variable Guilt

1. **Histogram of Standardized Residuals**



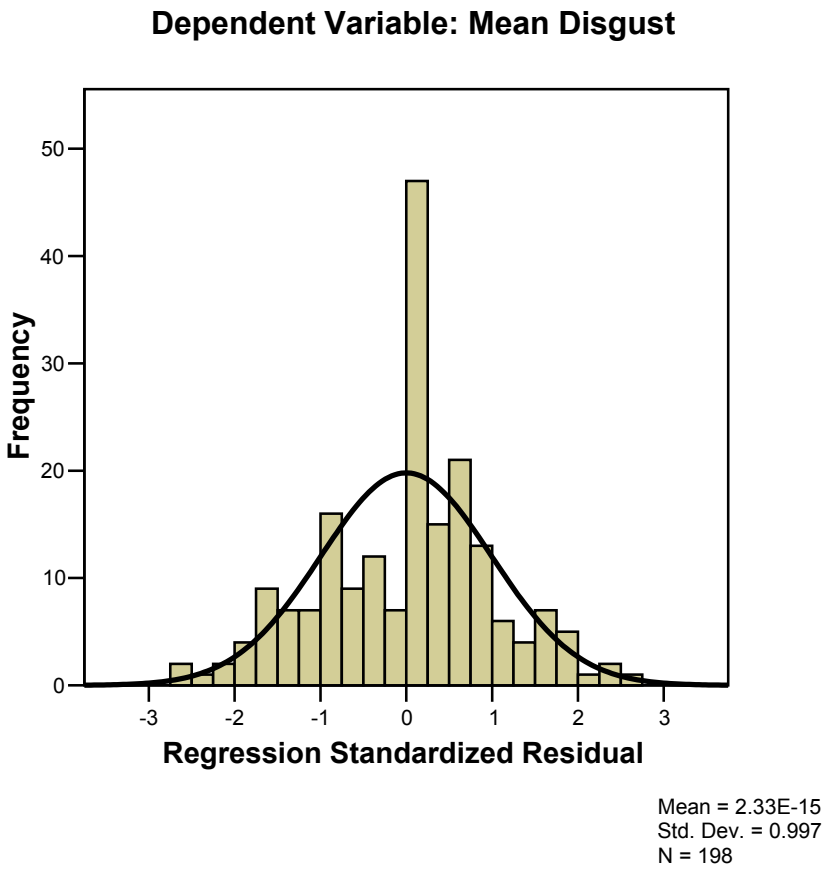
Appendix 4.1 H (continued)
Assumptions of Regression of Dependent Variable Guilt

2. <u>Scatter plot of Standardized Residuals</u>



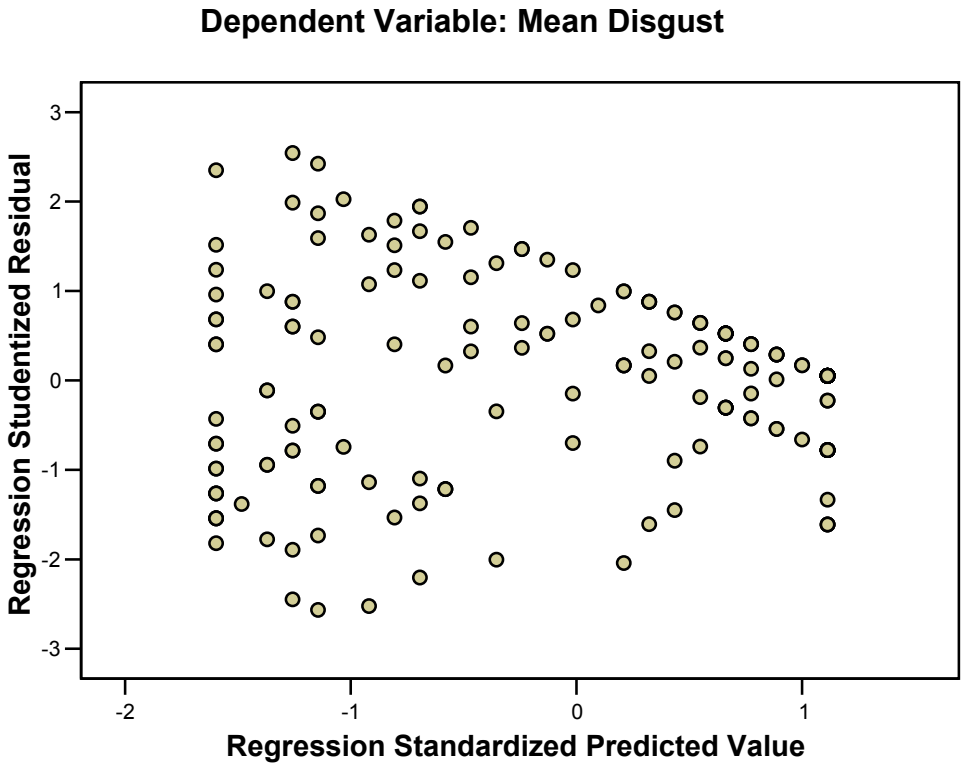
Appendix 4.1 I
Assumptions of Regression of Dependent Variable Disgust

1. **Histogram of Standardized Residuals**



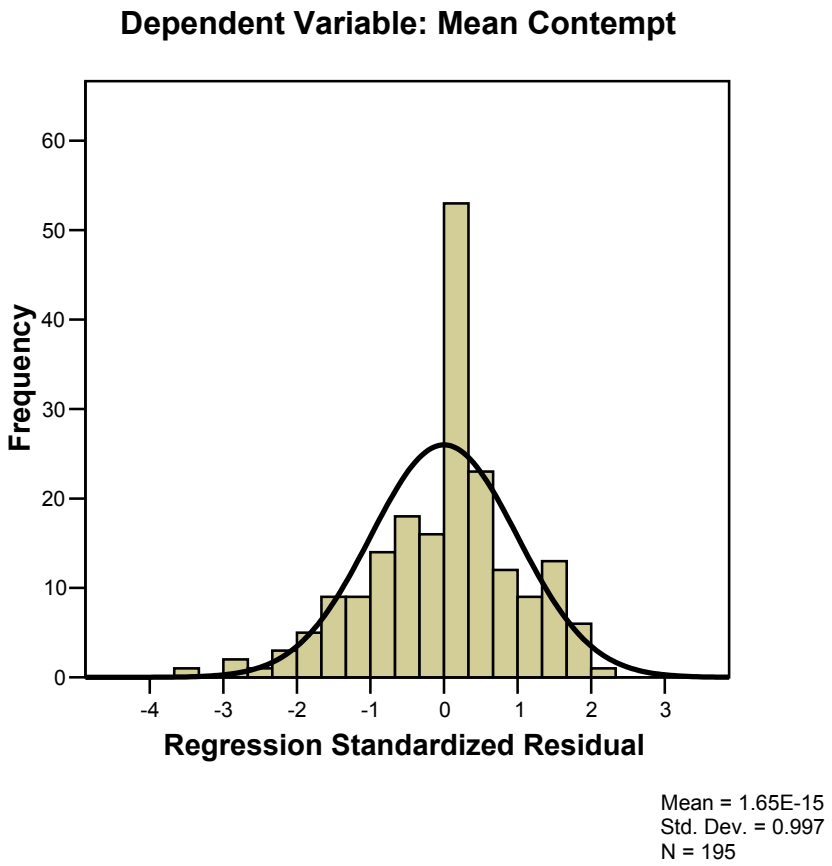
Appendix 4.1 I (continued)
Assumptions of Regression of Dependent Variable Disgust

2. <u>Scatter plot of Standardized Residuals</u>



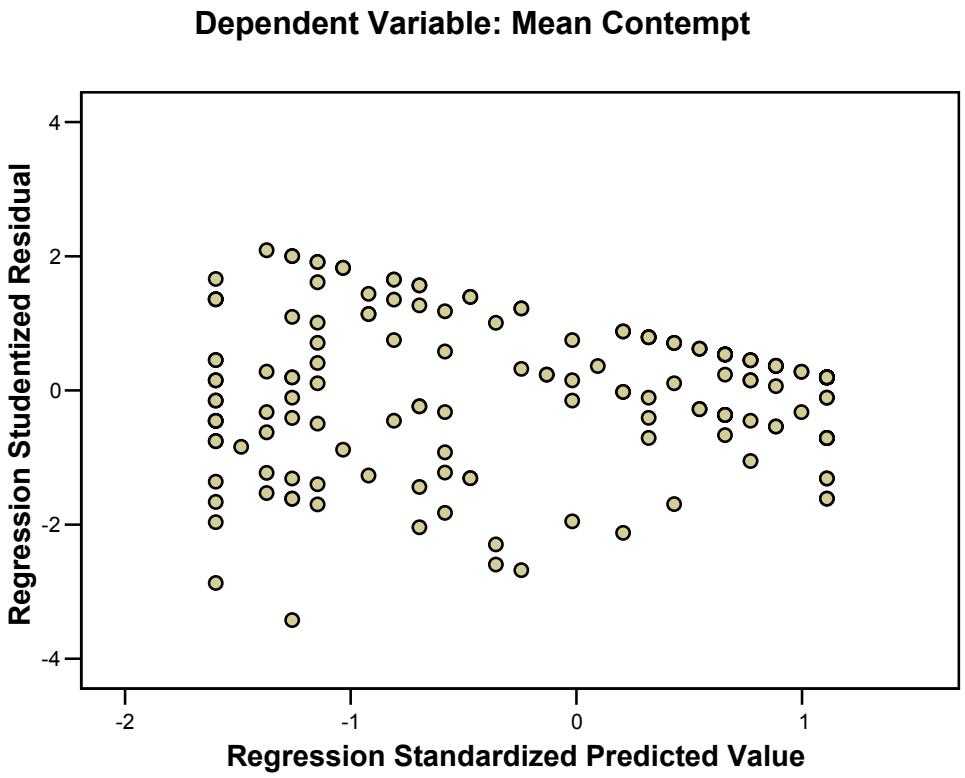
Appendix 4.1 J
Assumptions of Regression of Dependent Variable Contempt

1. **Histogram of Standardized Residuals**



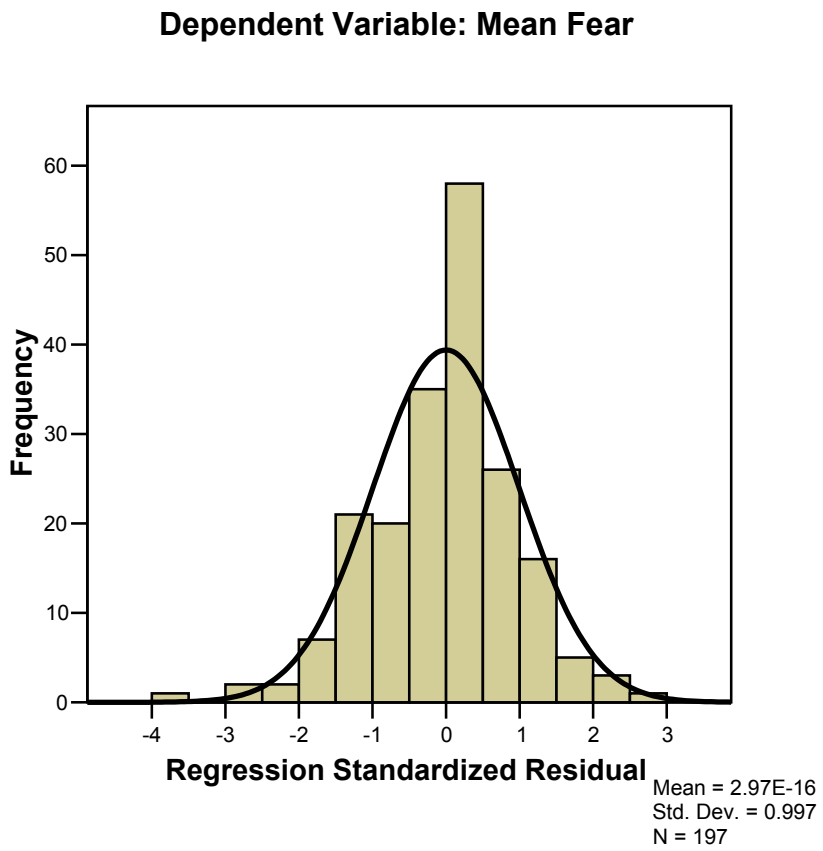
Appendix 4.1 J (continued)
Assumptions of Regression of Dependent Variable Contempt

2. <u>Scatter plot of Standardized Residuals</u>



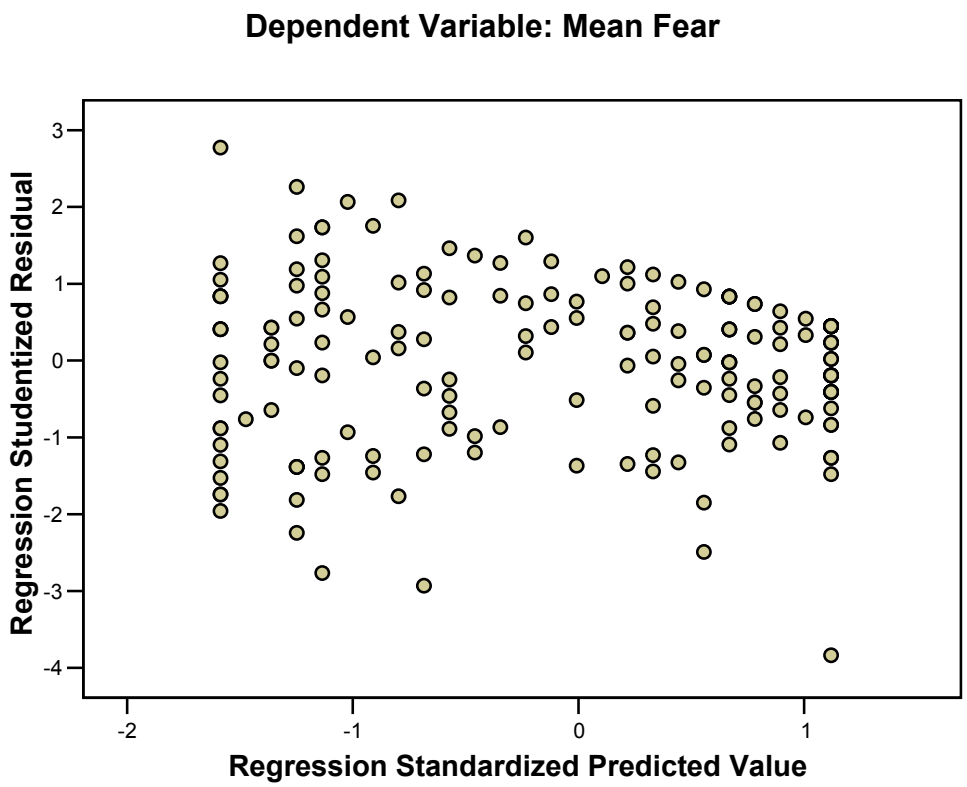
Appendix 4.1 K
Assumptions of Regression of Dependent Variable Fear

1. **Histogram of Standardized Residuals**



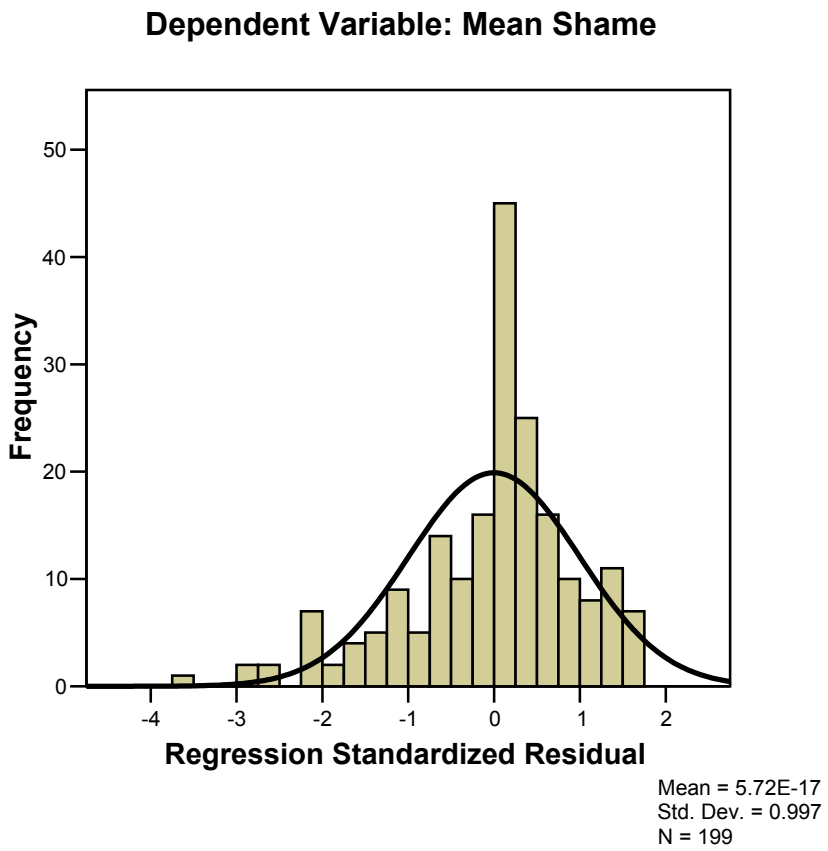
Appendix 4.1 K (continued)
Assumptions of Regression of Dependent Variable Fear

2. <u>Scatter plot of Standardized Residuals</u>



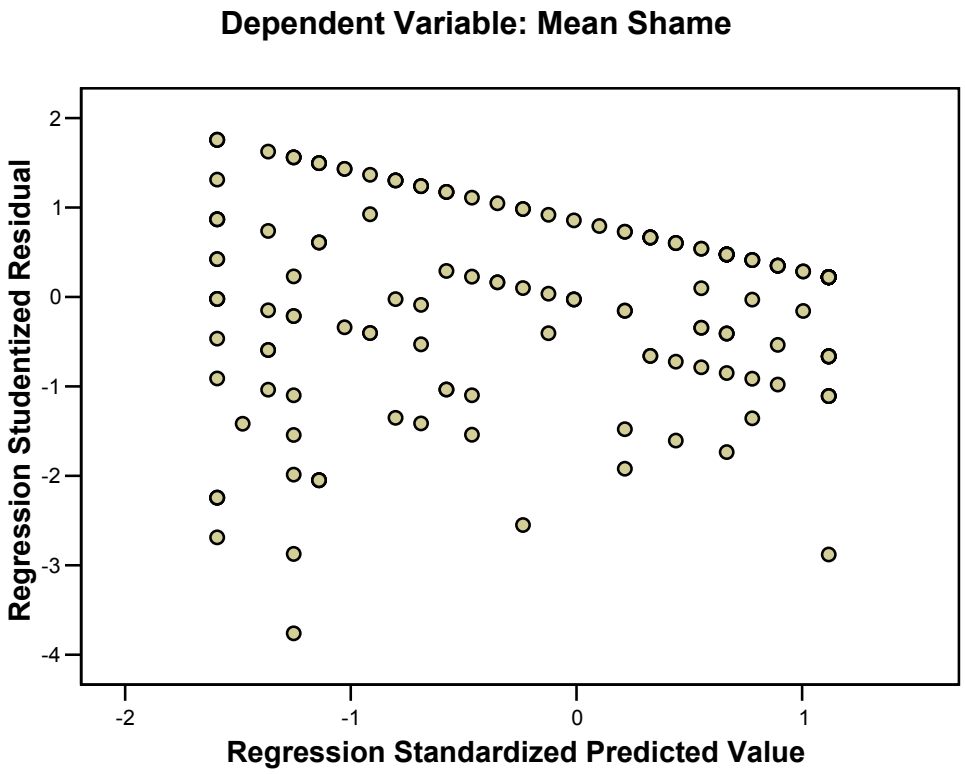
Appendix 4.1 L
Assumptions of Regression of Dependent Variable Shame

1. **Histogram of Standardized Residuals**



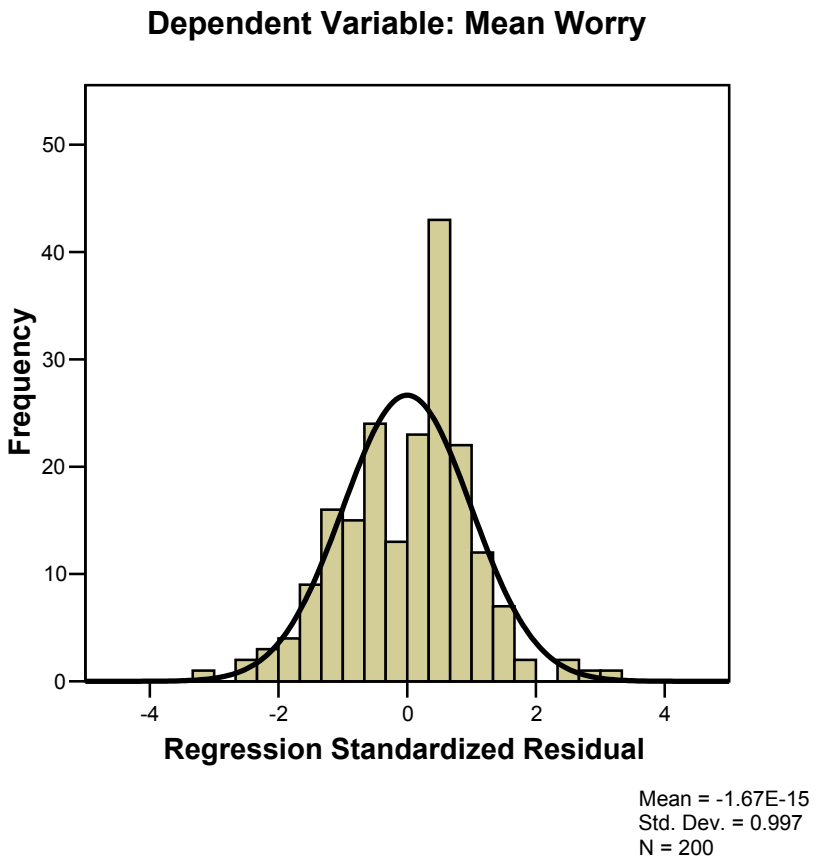
Appendix 4.1 L (continued)
Assumptions of Regression of Dependent Variable Shame

2. <u>Scatter plot of Standardized Residuals</u>



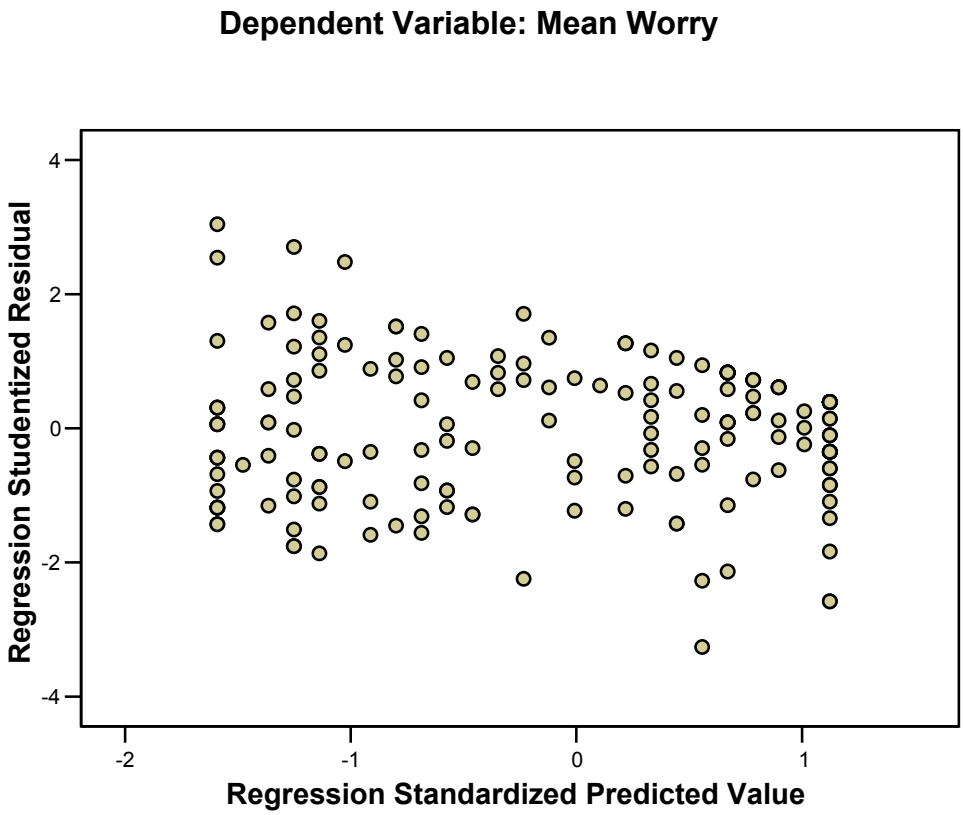
Appendix 4.1 M
Assumptions of Regression of Dependent Variable Worry

1. **Histogram of Standardized Residuals**



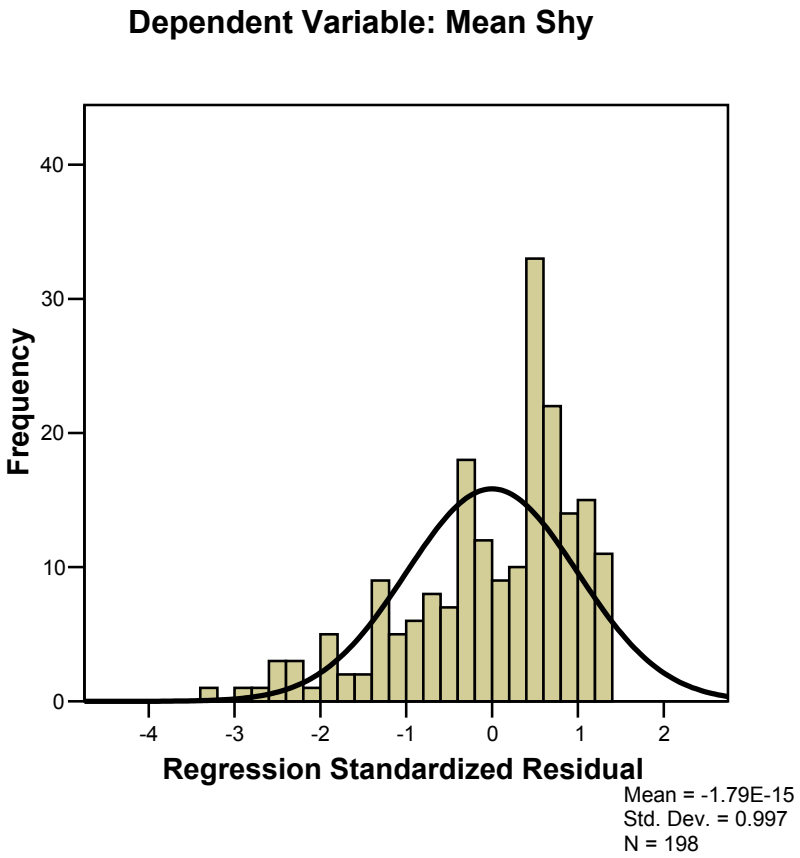
Appendix 4.1 M (continued)
Assumptions of Regression of Dependent Variable Worry

2. <u>Scatter plot of Standardized Residuals</u>



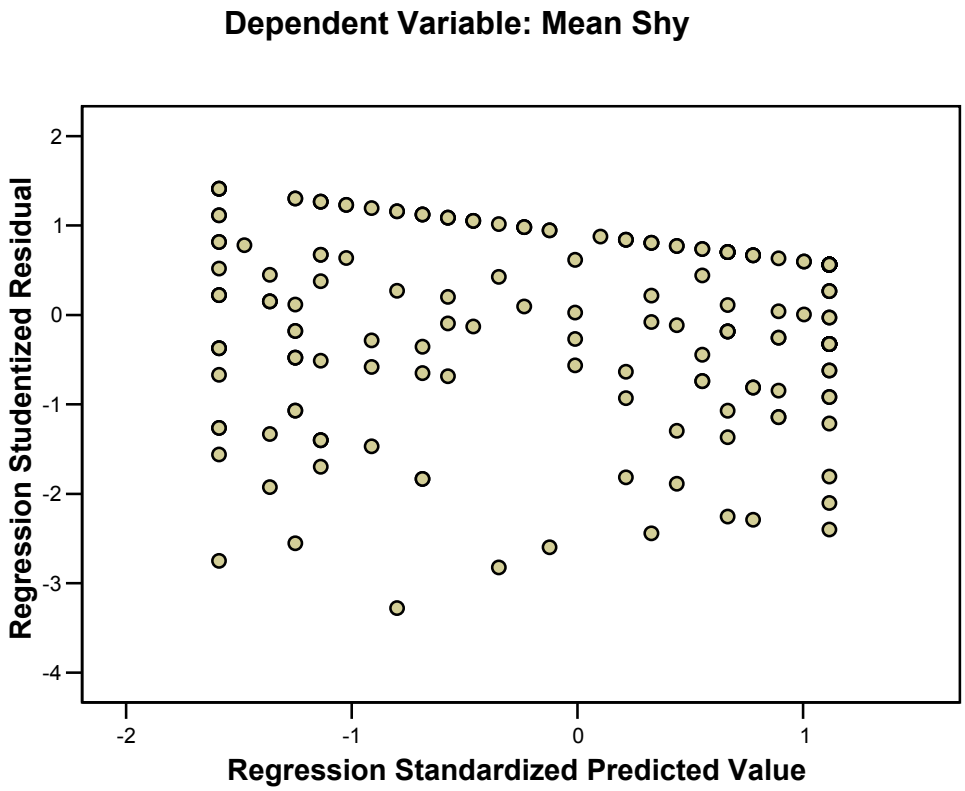
Appendix 4.1 N
Assumptions of Regression of Dependent Variable Shy

1. **<u>Histogram of Standardized Residuals</u>**



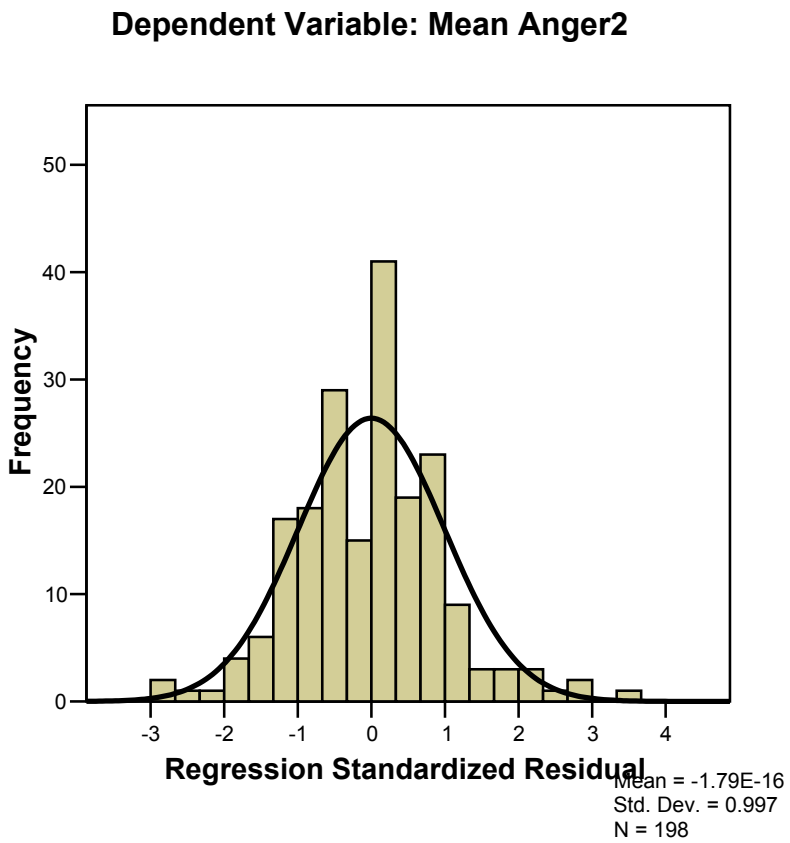
Appendix 4.1 N (continued)
Assumptions of Regression of Dependent Variable Shy

2. <u>Scatter plot of Standardized Residuals</u>



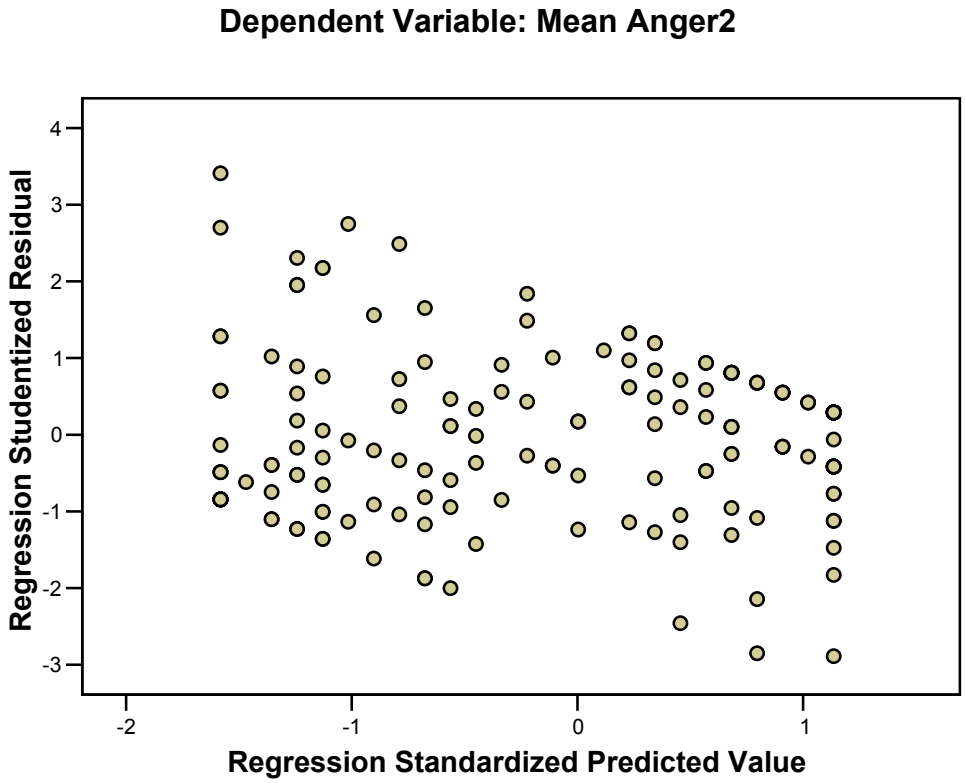
Appendix 4.1 O
Assumptions of Regression of Dependent Variable Anger2

1. **Histogram of Standardized Residuals**



Appendix 4.1 O (continued)
Assumptions of Regression of Dependent Variable Anger2

2. <u>Scatter plot of Standardized Residuals</u>



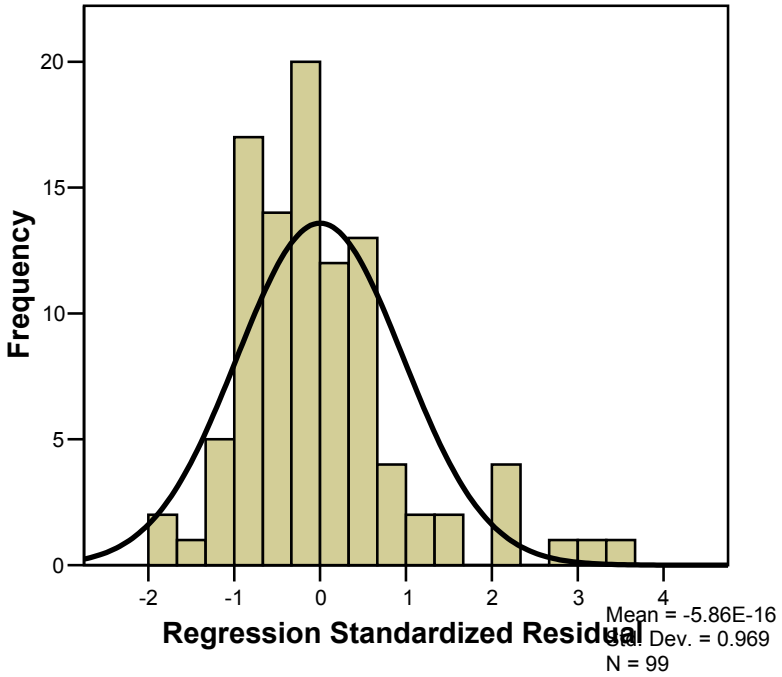
Appendix 4.1 P
Assumptions of Regression of Dependent Variable Job Performance

Low Crowding Treatment

1. <u>Histogram of Standardized Residuals</u>

Dependent Variable: Mean Job Performance

Treatment: Uncrowded

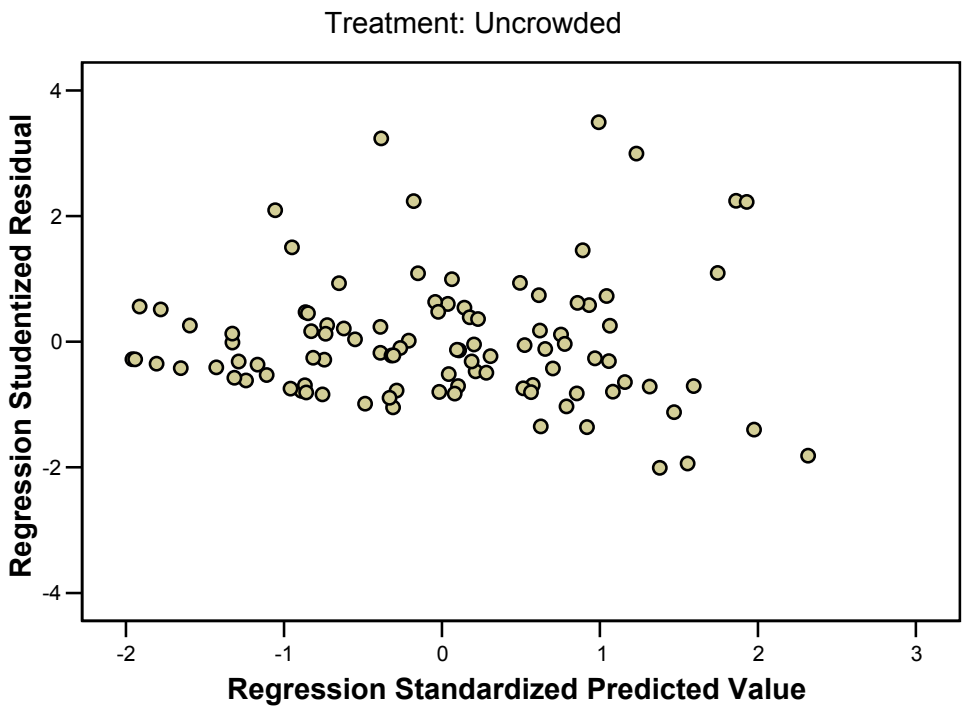


Appendix 4.1 P (continued)
Assumptions of Regression of Dependent Variable Job Performance

Low Crowding Treatment

2. <u>Scatter plot of Standardized Residuals</u>

Dependent Variable: Mean Job Performance



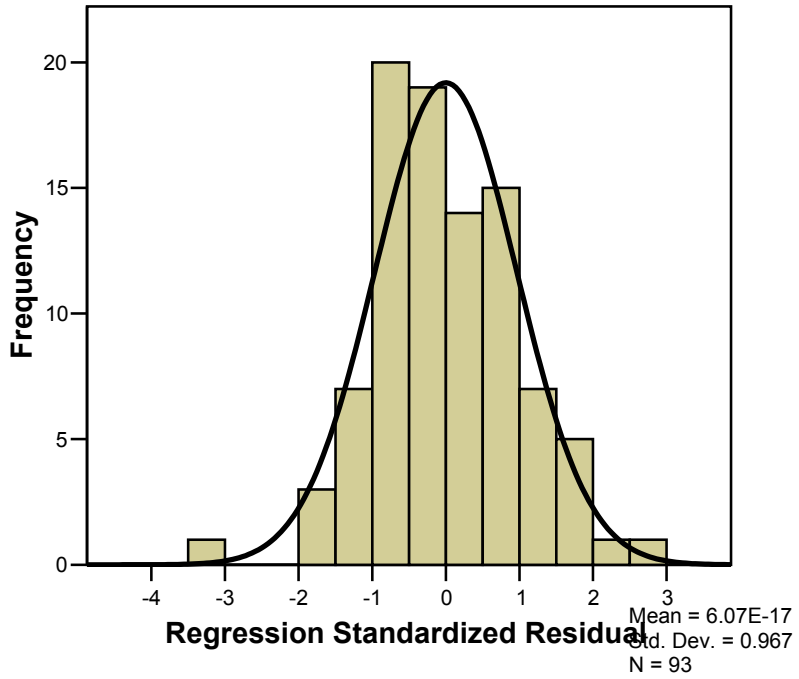
Appendix 4.1 Q
Assumptions of Regression of Dependent Variable Job Performance

High Crowding Treatment

1. <u>Histogram of Standardized Residuals</u>

Dependent Variable: Mean Job Performance

Treatment: Crowded



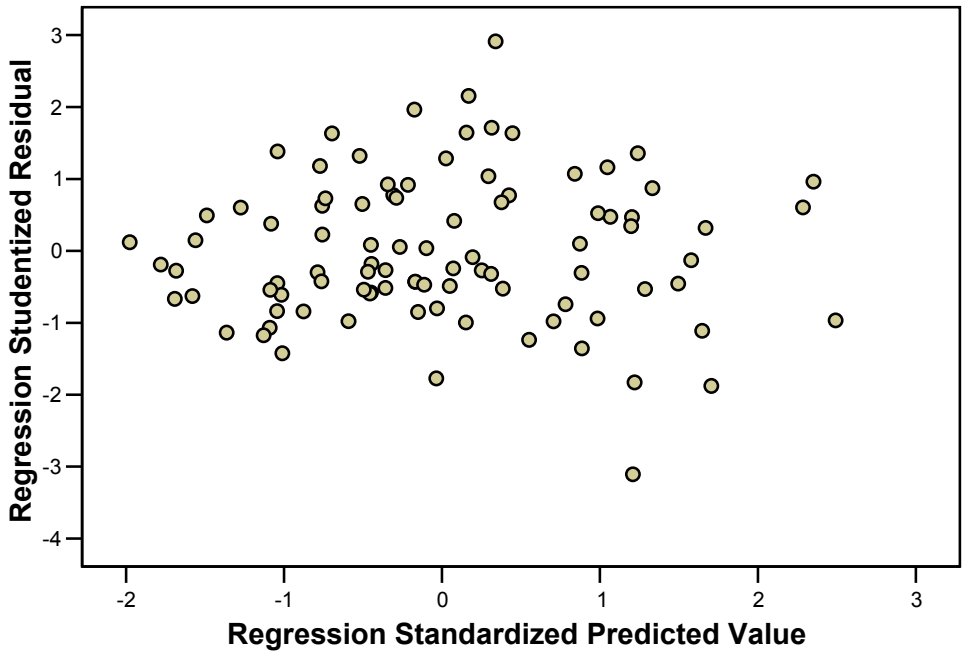
Appendix 4.1 Q (continued)
Assumptions of Regression of Dependent Variable Job Performance

Low Crowding Treatment

2. <u>Scatter plot of Standardized Residuals</u>

Dependent Variable: Mean Job Performance

Treatment: Crowded



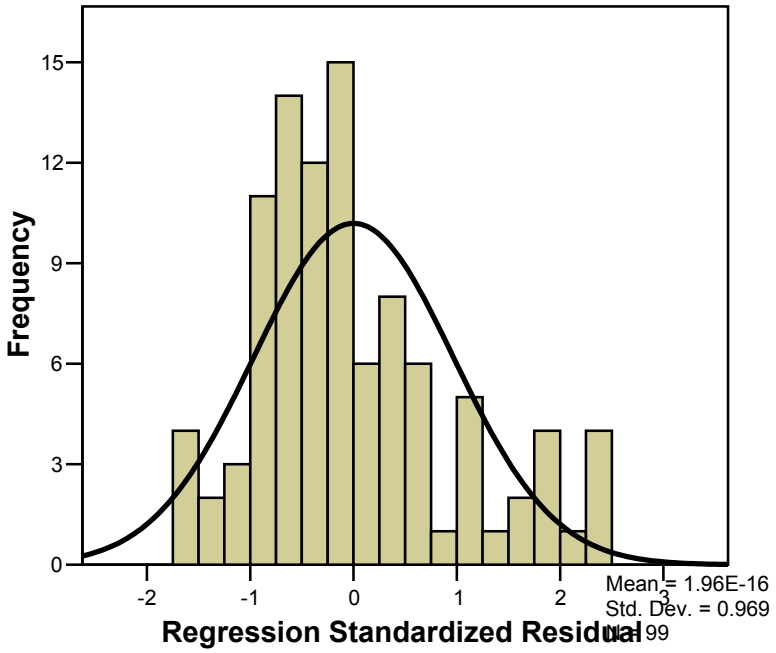
Appendix 4.1 R
Assumptions of Regression of Dependent Variable Displayed Emotions

Low Crowding Treatment

1. <u>Histogram of Standardized Residuals</u>

Dependent Variable: Mean Displayed Emotions

Treatment: Uncrowded



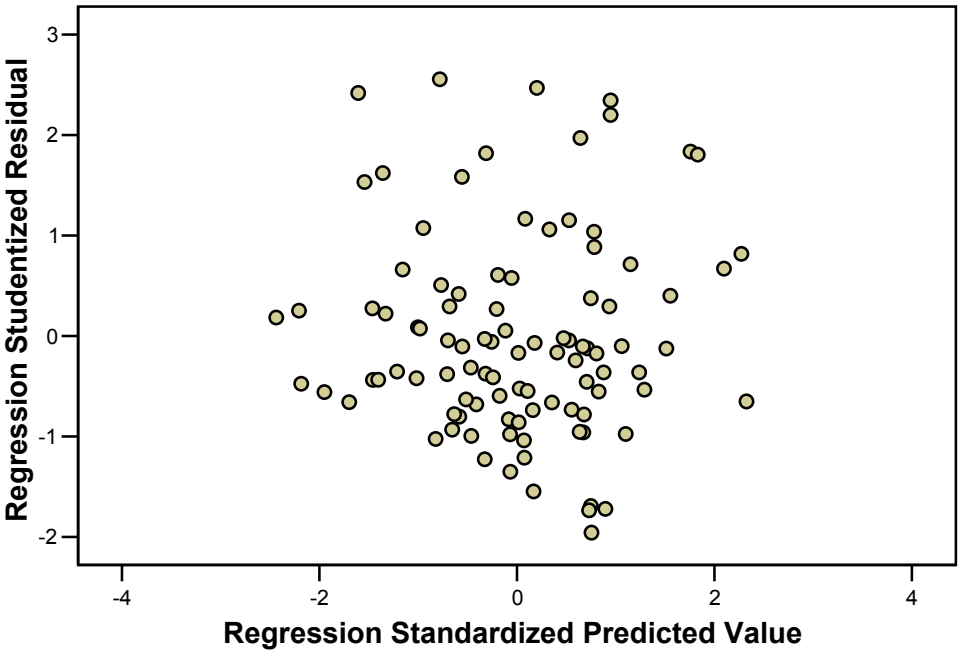
Appendix 4.1 R (continued)
Assumptions of Regression of Dependent Variable Displayed Emotions

Low Crowding Treatment

2. <u>Scatter plot of Standardized Residuals</u>

Dependent Variable: Mean Displayed Emotions

Treatment: Uncrowded



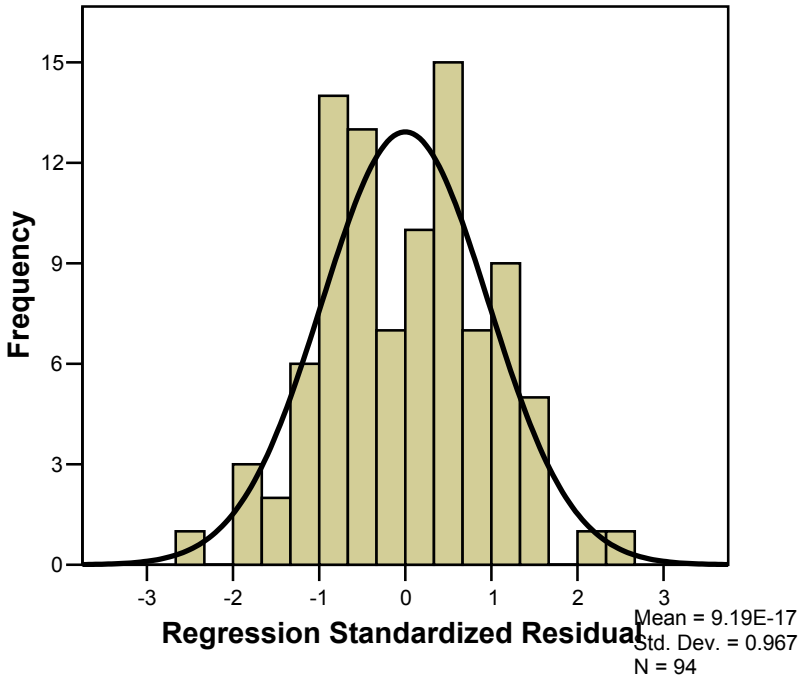
Appendix 4.1 S
Assumptions of Regression of Dependent Variable Displayed Emotions

High Crowding Treatment

1. <u>Histogram of Standardized Residuals</u>

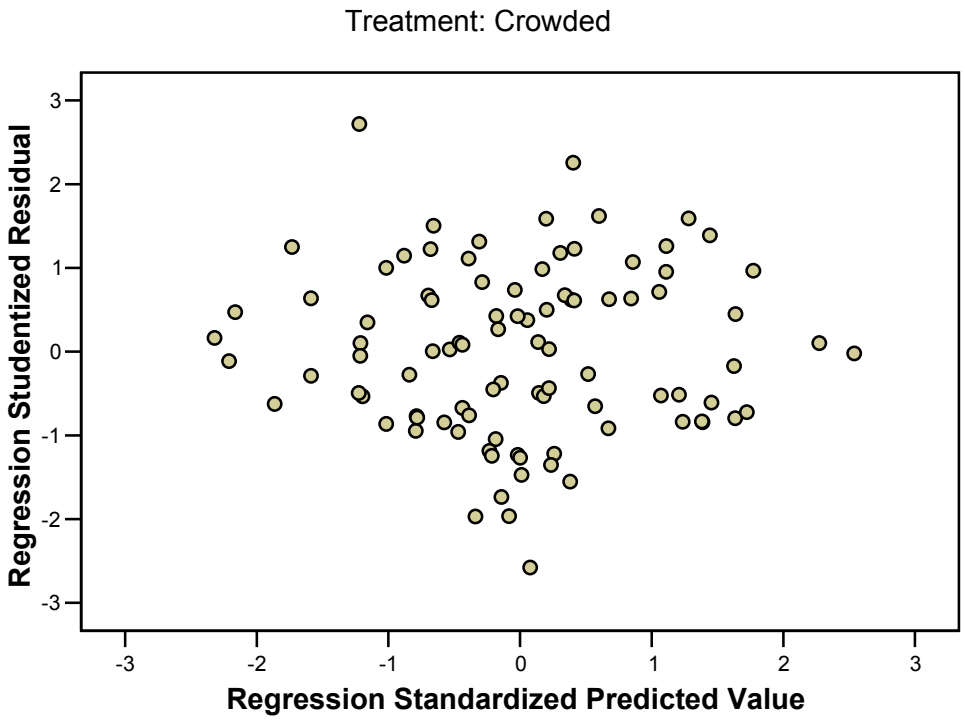
Dependent Variable: Mean Displayed Emotions

Treatment: Crowded



Appendix 4.1 R (continued)
Assumptions of Regression of Dependent Variable Displayed Emotions

High Crowding Treatment

2. <u>Scatter plot of Standardized Residuals</u>

Dependent Variable: Mean Displayed Emotions