CAUSES AND CONSEQUENCES OF PERFECTIONISM AND PROCRASTINATION: A STRUCTURAL EQUATION MODEL

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ABSTRACT

CAUSES AND CONSEQUENCES OF PERFECTIONISM AND PROCRASTINATION:
A STRUCTURAL EQUATION MODEL

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This thesis is an investigation of the relationship between self-oriented
perfectionism and academic procrastination in an academic environment, considering
antecedent influences on each of these variables, and the effects of perfectionism and
procrastination. in turn, on academic accomplishments. A sample of 112 students (33
men, 79 women) completed measures of perfectionism, procrastination, parental authority,
and self-efficacy. LISREL analysis revealed that self-oriented perfectionism has a negative
influence on academic procrastination, while the reciprocal effect of academic
procrastination on self-oriented perfectionism proved negligible. The behavioural outcome
results (effects on academic accomplishment) suggest that the behaviour of individuals who
are self-oriented perfectionists would result in increased academic accomplishment, while
the behaviour of those who are academic procrastinators would result in decreased academic
accomplishment.
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CHAPTER 1: INTRODUCTION TO THE PROBLEM

THE PROBLEM

Procrastination is typically defined as an irrational tendency to delay or avoid tasks that should be completed (Flett, Blankstein, Hewitt, and Kolidin, 1992). Many researchers have examined the nature of individual differences in procrastination from various theoretical perspectives. Because of widespread suspicion that procrastinatory behaviour stems from extremely high standards, some researchers have suggested that there is a connection between procrastination and perfectionism. This connection can be examined from three different angles: (1) that perfectionism influences procrastination; (2) that procrastination influences perfectionism; and (3) that perfectionism and procrastination are reciprocally related. This study considers procrastination in the university setting.

Perfectionism refers to a set of self-defeating thoughts and behaviours aimed at achieving excessively high impractical goals (Student Affairs, State University of New York at Buffalo). Hewitt and Flett (1989, 1991) distinguish perfectionism in terms of personal and social components. They identified three separate dimensions: socially prescribed perfectionism (those who believe that significant others hold unrealistic standards for them, harshly evaluate them, and pressure them to be perfect); self-oriented perfectionism (those who set exacting standards for themselves and engage in harsh self-evaluation while striving for perfection and avoiding failure); and other-oriented perfectionism (those who hold unreasonable standards for significant others, place importance on being perfect, and harshly evaluate their performance). Self-oriented perfectionism is the focus of this investigation.

Recent research suggests that the relationship between perfectionism and procrastination is more complex than previously thought. The use of multidimensional
measures of the two constructs has clarified the association. As noted above, Hewitt and Flett (1991) suggested three dimensions of perfectionism: socially prescribed, self-oriented, and other-oriented. Research focusing on just one or another of these dimensions of perfectionism has provided inconsistent findings with respect to the connection between perfectionism and procrastination. Some studies report a positive relationship, while others report little or no association. Solomon and Rothblum's (1984) study of the correlates of procrastination revealed an homogeneous group of procrastinators characterized by excessive levels of fear of failure and perfectionism. Burka and Yuen (1983) reported that procrastinators impose unreasonable demands upon themselves, manifesting cognitive characteristics often identified with perfectionism. Ferrari (1992) found that procrastinators engaged in perfectionism because they feel anxious about how others might evaluate their performance (socially prescribed perfectionism). Studies by Johnson and Slaney (1992), Muszynski and Akamatsu (1991), and Schouwneberg (1992), however, offer little or no support for the connection between perfectionism and procrastination.

The purpose of my thesis study is to investigate the relationship between procrastination and perfectionism in an academic environment, considering antecedent influences on each of these variables, and the effects of procrastination and perfectionism, in turn, on academic, social and extra-curricular accomplishments. After preliminary exploratory analysis, I decided to narrow my focus to the relationship between self-oriented perfectionism and academic procrastination. By eliminating other-oriented perfectionism, and employing socially prescribed perfectionism and general procrastination as exogenous variables, the relationship between the two constructs could be estimated. I also narrowed
my concern to the effects of perfectionism and procrastination on academic accomplishment.

Specifically, then, my thesis addresses the following questions: (1) What are the influences on self-oriented perfectionism and academic procrastination? (2) What is the nature of the causal relationship between self-oriented perfectionism and academic procrastination? and (3) What are the effects of self-oriented perfectionism and academic procrastination on academic accomplishment or productivity?

LITERATURE REVIEW

For clarity, I have divided this chapter into three sections, one to review the research on perfectionism, a second to review the research on procrastination, and the third to review the research on the relationship between the two constructs. While my focus is on the relationship between perfectionism and procrastination, it is important to review the constructs individually so that we can reach a deeper understanding of how and why each may influence the other.

Research on Perfectionism

Extant research provides us with ample evidence regarding perfectionism as both an independent and dependent variable, and how the construct has evolved. Past studies considered perfectionism as a unitary construct. The following summary of research comprises studies investigating perfectionism as a multidimensional construct.

In 1991, Hewitt and Flett attempted to demonstrate that the three dimensions of perfectionism relate to indices of personality disorders and other psychological maladjustment. Using descriptive passages reflecting the three dimensions, Hewitt and Flett
conducted five separate studies. The first study was designed to develop a reliable set of items that represented each of the three dimensions. The second study assessed the underlying factor structure of their measurement for samples of university students and psychiatric patients. The third study evaluated its convergent and discriminant validity by correlating the measures with numerous variables related to self and socially related behaviour. The fourth study carried their research one step further by predicting negative emotion from perfectionism. The fifth study was designed to demonstrate the practical importance of their conceptual and measurement work: specifically to test the hypothesis that perfectionism is correlated significantly with the experience of certain personality disorders in psychiatric patients. These five individual studies by Hewitt and Flett confirmed the multidimensionality of the construct and showed that each dimension could be assessed in a reliable and valid manner in both college students and psychiatric patients. In addition, the last study with 77 psychiatric patients shows that self-oriented, other-oriented, and socially prescribed perfectionism relate differently to indices of personality disorders and other psychological maladjustment.

In a later study, Flett, Hewitt, Blankstein, Solnik, and VanBrunschot (1996) examined the relationship between dimensions of perfectionism and self-appraised problem-solving behaviours and attitudes on 168 undergraduate students (55 males and 113 females) enrolled in an introductory psychology course using the MPS (Multidimensional Perfectionism Scale) (Hewitt and Flett, 1989, 1991) and the SPSI (Social-Problem Solving Inventory) (D’Zurilla and Nezu, 1990). Correlational analyses of the data from both studies confirmed that socially prescribed perfectionism was associated with more negative self-perceptions of problem-solving orientation, and that the link between socially prescribed
perfectionism and negative perceptions of problem-solving orientation remains present after removing variance due to levels of negative affectivity. The results suggest that perceived exposure to imposed standards of perfection undermines the problem-solving process and that individuals with high levels of socially prescribed perfectionism are particularly in need of counselling interventions designed to provide a more positive problem-solving orientation.

Blankstein, Flett, Hewitt, and Eng (1993) looked at perfectionism from yet another angle. They investigated the association between dimensions of perfectionism and specific fears. 189 university students (60 male and 129 female) from a first year psychology class completed the MPS (Multidimensional Perfectionism Scale) (Hewitt and Flett, 1989, 1991) and the FSS-III (Fear Survey Schedule-III) (Wolpe and Lang, 1964). Analyses revealed that both self-oriented and socially prescribed perfectionism were associated with specific fears about failure, making mistakes, losing control, and feeling angry. As they had expected, socially prescribed perfectionism was also associated with fears reflecting social evaluative concerns such as being criticized and looking foolish to others. Other-oriented perfectionism was not associated positively with specific fears. The results support the validity of the perfectionism construct.

A study by Alden, Bieling, and Wallace (1994) examined perfectionism and standard-setting within a self-regulation framework and systematically compared the roles of both factors in dysphoria and social anxiety with a sample of 90 female psychology undergraduate students. Subjects completed the MPS (Multidimensional Perfectionism Scale) (Hewitt and Flett, 1989, 1991), then participated in laboratory social interaction with a male research assistant. Following the practice interaction, subjects were asked to rate
their own standards for the interaction and their beliefs about the standards of others used to evaluate them, their social ability and the frequency with which they appraised themselves in the social situation, as well as how important it was for them to meet both sets of standards. They found that socially prescribed perfectionism was associated with frequent self-appraisal during the interaction, but not with standard-setting. Self-oriented perfectionism was associated with establishing goals that exceeded one's perceived social ability and with the importance of meeting personal goals. The extent to which either type of perfectionism was associated with dysphoria or social anxiety was dependent on social self-efficacy.

From their examination of the role of parental authority styles in perfectionism, Flett, Hewitt, and Singer (1995) found that parental authority styles might contribute to levels of perfectionism in subjects. Employing a sample of 100 graduate students (50 male and 50 female) and the MPS (Multidimensional Perfectionism Scale) (Hewitt and Flett, 1989, 1991) and the PAQ (Parental Authority Questionnaire) (Buri, 1991), they discovered that socially prescribed perfectionism was associated with high ratings of authoritarian parenting behaviours among males. For females they found that socially prescribed perfectionism was positively associated with permissiveness from these subjects' fathers. Self-oriented perfectionism was found to be associated with an authoritative style of parental authority.

To evaluate the usefulness and psychometric properties of a goal commitment scale assessing commitment to perfection in seven content areas, Flett, Sawatzky, and Hewitt (1995) had a sample of 261 introductory psychology students complete the MPS (Multidimensional Perfectionism Scale) (Hewitt and Flett, 1989, 1991), the FMPS (Frost
Multidimensional Perfectionism Scale) (Frost, Marten, Lahart, and Rosenblate, 1990) and the Goal Scale (Hollenbeck, Williams, and Klein, 1989). Their investigation examined the association between the trait dimensions of perfectionism and perfectionistic commitment to specific types of goals and to determine the extent to which trait perfectionism could generalize to specific perfectionism content areas. Their analyses confirmed the presence of individual differences in perfectionism goal commitment. Correlational analysis revealed that the trait perfectionism dimensions were correlated with the goal commitment measure, but the findings varied as a function of the specific perfectionism goal. Overall, these data are consistent with the view that the perfectionism construct has a salient motivational component. They concluded that the assessment of goal commitment is a useful means of examining specific facets of the perfectionism construct.

Flett, Hewitt, Blankstein, and Mosher (1995) hypothesised that perfectionists who experience stress are vulnerable to depression, in part because negative life events represent a failure to maintain control over negative outcomes. They performed two studies. The first study looked at the association between perfectionism and control beliefs, using the MPS (Multidimensional Perfectionism Scale) (Hewitt and Flett, 1989, 1991), the Desire For Control Scale (Burger and Cooper, 1979), and the Spheres of Control Scale (Paulhus, 1983). The second study extended this research by focusing directly on perfectionism, life events, and depression, using the LES (Life Experiences Survey) (Sarason, Johnson, and Siegel, 1978) and the BDI (Beck Depression Inventory) (Beck and Beamsdorfer, 1974; Beck, 1978). Study 1 confirmed that self-oriented and other-oriented perfectionism were associated with both higher desire for control and greater perceived personal control. In study 2, the authors report that subjects characterized by both high levels of self-oriented
perfectionism and life stress tended to report higher levels of depression, as predicted by the diathesis-stress model which maintains that perfectionists exposed to life stress are vulnerable to symptoms of depression.

In summary, the authors here report correlations among various psychological constructs and perfectionism. However, whether the variables are antecedents or consequences is not evident from this type of analysis. Presented here, is proof of the existence or non-existence of relationships among constructs, lacking evidence of the direction and strength of these relationships.

**Research on Procrastination**

While my review of the literature found that there was not as much research on procrastination, what I found proved insightful.

To compare the differential roles of two mechanisms of psychological change (reactance and perceived self-efficacy) under a wide variety of therapeutic injunctions and directives (referred to as paradoxical interventions), Shoham-Salomon, Avner, and Neeman (1989) administered self-developed, pre-treatment self-reports: a study log: the Procrastination Inventory (Sroloff, 1983); and the PSE inventory (Perceived Self-Efficacy) (Sroloff, 1983) and observed reactance of 64 undergraduate students in introductory psychology classes. They discovered that students higher on initial reactance benefited more from therapy than did subjects with low reactance; that, while non-reactant subjects did not increase their effective study time, they improved in perceived efficacy to control their procrastination; and that increased study time was negatively correlated with increased self-efficacy. In self-control treatment, increased study time was accompanied by increased self-efficacy. The paradoxical interventions employed by the therapists (graduate students
in clinical psychology) seemed to reduce procrastination through the mechanism of
reactance in some clients. whereas in others they led to a cognitive change. possibly
mediating a subsequent behaviour change.

According to Covington (1993). academic procrastination is a coping behaviour for
managing academic stress. From his research. we learn that academic procrastination in
students may fulfil the important goal of protecting feelings of self-worth by avoiding
situations in which they might fail. It seems. however. that some people are naturally more
inclined toward procrastinatory behaviour than are others. From this observation.
Covington classified two categories of students: failure-accepting students and failure-
avoiding students.

In 1991. Tuckman carried out an investigation using his self-developed
Procrastination scale and the GSE (General Self-Efficacy Scale) (Sherer. Maddux.
Mercandante. Prentice-Dunn. Jacobs. and Rogers. 1982) on two separate samples of college
students (sample 1: 50 college juniors and seniors between the ages of 19 and 22 who were
preparing to become teachers: sample 2: 183 subjects drawn from the same population). His
objective was to develop a self-report measure of procrastination tendencies and investigate
its relationship to a behavioural measure of procrastination and a self-report measure of
general self-efficacy. A factor analysis of the original 72- item version of the scale yielded
two factors. on the basis of which he reduced the scale to 35 items with a reliability of .90.
The relationship between scores on the 35-item instrument and performance on the VHS
yielded a correlation of -.54. In addition. a correlation of -.47 was observed between the 35-
item scale and the GSE. The correlation between GSE and VHS scores was .29 (p<.05). In
Study 2. a factor analysis of scores on the 35-item scale yielded a single-factor structure and a condensed scale of 16 items with a reliability of .86. Procrastination scores were also significantly related to scores on the General Self-Efficacy Scale in both Study 1 and Study 2.

Ferrari, Parker, and Ware (1992) also studied the relationship between procrastination and self-efficacy, but from a different angle. They administered the MBTI (Myers-Briggs Type Indicator, Form F) (Briggs and Myers, 1976), the PASS (Procrastination Assessment Scale: Students) (Solomon and Rothblum, 1984), the GSE (General Self-Efficacy Scale) (Sherer et al., 1982), and the ALC scale (Academic Locus of Control) (Trice, 1985) to 319 college students (78 male and 241 female) to differentiate academic from non-academic procrastinators. Frequent procrastination and reasons for procrastination were, overall, not significantly related to the typologies or locus of control, but were negatively related to general self-efficacy. Task aversiveness as a motive for procrastination was also negatively related to general self-efficacy. Multiple regression analyses of self-reported scales indicated that only general self-efficacy predicted procrastination frequency, procrastination reasons, and task aversiveness. Ferrari et al. (1992) concluded that academic procrastination could be related to low self-efficacy and that frequent procrastinators tended to believe that they had little control over their own behaviour.

While the studies reviewed above reveal the possible antecedents of perfectionism and procrastination, they do not bear on the major focus of my thesis: the relationship between perfectionism and procrastination. The following review summarizes studies considering this relationship.
Research on the Relationship between Perfectionism and Procrastination

Research that has failed to adopt a multidimensional approach produces a great deal of uncertainty about the link between perfectionism and procrastination. Two of the studies in my review indicate that these variables are positively related while three studies report little or no association.

Solomon and Rothblum (1984), who examined the correlates of procrastination in a sample of 342 university students, provided the initial evidence of an association between the two constructs. Subjects completed two sections of the PASS (Procrastination Assessment Scale: Students) (Solomon and Rothblum, 1984). After completing the second section of the PASS which provided typical procrastination scenarios (i.e. delay in writing a term paper), students were provided with a list of possible explanations for why they would procrastinate in this type of situations, including perfectionism, evaluation anxiety, difficulty making decisions, dependency, aversiveness of the task, lack of self-confidence, fear of success, and so on. Perfectionism was defined in this study as overly perfectionist standards for one's performance. Factor analyses revealed that the perfectionism items loaded on a fear-of-failure factor that also included lack of self-confidence and anxiety about the ability to meet other people's expectations. Additional analyses uncovered a group of procrastinators characterized by excessive levels of fear of failure and perfectionism, revealing the association between perfectionism and procrastination.

In 1992, Ferrari had 307 college students complete a set of inventories on procrastination, perfectionism, self-presentation (SLP), self-awareness, and self-handicapping. Separate exploratory factor analyses were performed for 168 procrastinators and 139 nonprocrastinators. It was found that perfectionism behaviour for procrastinators
may be motivated by external or social expectations about what others may think. But for nonprocrastinators it is a striving for excellence motivated by "getting ahead" of others.

These results support the positive connection between socially prescribed perfectionism and procrastination also reported by Flett and Hewitt (1990) and Frost, Marten, Lahart, and Rosenblate (1990).

However, other studies have failed to detect an association between perfectionism and procrastination. Muszynski and Akamatsu (1991) examined tendencies to procrastinate in a sample of 151 graduate students. Students were divided into one of three groups on the basis of the speed with which they completed their doctoral dissertations. The three groups were: (1) early completers (i.e., less than 5 years to complete degree); (2) average completers (i.e., 5-6 years to complete degree); and (3) delayed completers (i.e., 7 or more years to complete degree). Subjects were asked to complete a modified version of the PASS (Procrastination Assessment Scale: Students) (Solomon and Rothblum, 1984) that contained content relevant to the process of completing the dissertation. Numerous characteristics of the respondent, including perfectionism, frustration, tolerance, rebellion, need for approval, difficulty making decisions, and self-denigration were measured. Analyses of the mean scores showed that the three groups varied substantially in frustration tolerance, rebellion, self-denigration, lack of structure, and task aversiveness. Muszynski and Akamatsu reported that the high-delay group tended to be distinguished by more negative responses on all of the measures except perfectionism. As well, they did not find any association between the perfectionism and procrastination measures.

In another study, Johnson and Slaney (1992) administered a 62-item perfectionism scale to a sample of 1,329 students. This perfectionism scale contained items that referred
specifically to self-oriented perfectionism, as well as factors believed to be related to
perfectionism, including procrastination. Factor analyses of this scale yielded three distinct
factors: (1) perfectionism, (2) procrastination, and (3) interpersonal discomfort. Samples of
100 perfectionists and 100 non-perfectionists were compared in terms of their mean scores
on the three dimensions. Subjects were classified as high or low perfectionists on the basis
of their own self-identification as a perfectionist or non-perfectionist. The validity of this
procedure was confirmed by the substantial differences in the perfectionism scores of each
group, as assessed by the 62-item perfectionism scale.

Schouwenburg (1992) examined the relationship between perfectionism and
procrastination in a roundabout way. In this research, a sample of 278 students completed a
measure of reasons for procrastination, along with measures of trait procrastination,
behavioural procrastination, and fear of failure. A factor analysis of the reasons for
procrastination yielded six factors, including a fear of failure factor that closely resembles
perfectionism. Path analyses of the data from the total sample revealed a slightly positive
effect of the fear of failure factor and indices of procrastination which led Schouwenburg
(1992) to conclude no substantial relationship exists between procrastination and fear of
failure.

In summary, of the five studies that have examined perfectionism as a one-
dimensional construct, two reported evidence of a positive association between
perfectionism and procrastination. However, the results of these studies may be due to the
presence of social-evaluation anxiety or, in the case of Ferrari (1992), the use of the BPS
(Burns Perfectionism Scale) (Burns, 1980) which includes items that reflect a fear of
negative evaluation.
More recent research with multidimensional measures of perfectionism has clarified the association between perfectionism and procrastination, suggesting that the relation between perfectionism and procrastination is more complex than previously thought. Presently, there are two multidimensional measures of perfectionism (Frost, Martin, Lahart, and Rosenblate, 1990; Hewitt and Flett, 1989, 1991). Both distinguish the personal and social aspects of the perfectionism construct.

In a study by Flett, Blankstein, Hewitt, and Koledin (1992), the relationship between individual differences in perfectionistic and procrastinatory behaviour was examined in a sample of 131 college students. Subjects completed the MPS (Multidimensional Perfectionism Scale) (Hewitt and Flett, 1989, 1991), the BPS (Burns Perfectionism Scale) (Burns, 1980), the Lay Procrastination Scale (Lay, 1986), and a modified version of the PASS (Procrastination Assessment Scale: Students) (Solomon and Rothblum, 1984). The Lay Procrastination scale is a measure of generalized-arousal procrastination tendencies, while the PASS is a more directed measure that considers situational procrastination with hypothetical academic situations. Correlational analyses revealed that socially prescribed perfectionism was correlated positively with generalized procrastination, the frequency of academic procrastination, the extent to which academic procrastination is perceived to be a problem, and a pervasive fear of failure. The socially prescribed perfectionism dimension was found to be most closely correlated with both generalized and academic procrastination, especially among males. Few significant correlations involving self-oriented and other-oriented perfectionism were uncovered.

By employing different measures of the same constructs, analyses comparing the measures were possible. Comparisons of the self-oriented perfectionism measures (i.e. the
MPS and the BPS) provide some meaningful information about the nature of the relationship between perfectionism and procrastination. Significant correlations were obtained between procrastination and the BPS measure of perfectionism, but there were no significant correlations between procrastination and the MPS measure of self-oriented perfectionism. Perhaps the most logical explanation for this discrepancy is that the MPS measure includes a salient motivational component that is missing from the BPS. It seems that individuals with high standards, who are actively striving to meet them, do not appear to exhibit procrastinatory tendencies: procrastination is exhibited only by those who value perfect performance but lack the required motivation and determination to attain these standards. These findings suggest that an analysis of related differences in motivational orientations might enrich our understanding of the nature of procrastination.

The need to distinguish self-oriented and socially prescribed perfectionism was demonstrated clearly in a recent investigation by Martin, Flett, and Hewitt (1993). A sample of 178 college students completed the MPS and Lay's Procrastination Scale. Subjects also completed the Generalized Expectancies of Success Scale (Fibc and Hale, 1978) in order to test the possibility that self-expectancies moderate the link between perfectionism and procrastination. This hypothesis stems from self-regulation models and self-efficacy models, which assume that maladaptive responses are especially likely to be present if an individual with perfectionistic standards is also characterized by a tendency to be pessimistic about outcomes involving the self (Bandura, 1986; Kanfer and Hagerman, 1981). Consistent with Flett et al. (1992), correlational analyses revealed that greater procrastination was associated with higher levels of socially prescribed perfectionism. Also, procrastination and socially prescribed perfectionism were both associated with negative
self-expectancies. Analyses with the other perfectionism dimensions revealed that there was a significant negative correlation between procrastination and self-oriented perfectionism.

Frost, Marten, Lahart, and Rosenblate (1990) developed a multidimensional measure of perfectionism (also entitled the MPS) and tested its reliability and validity in four studies with 672 female college students. The major dimension of this measure was excessive concern over making mistakes. Five other dimensions were identified, including high personal standards, the perception of high parental expectations, the perception of high parental criticism, the doubting of the quality of one's actions, and a preference for order and organization. In one of the studies, they administered their Multidimensional Perfectionism Scale and a multidimensional measure of academic procrastination to 106 female college students. Their analyses of overall perfectionism scores and frequency of procrastination indicated no significant association between the two constructs. However, from analyses with perfectionism sub-scales, they found that self-oriented perfectionism is associated negatively with procrastination and imposed perfectionism from others is associated positively with procrastination. They also report a significant negative correlation between procrastination frequency and high personal standards and a positive correlation between procrastination and parental criticism and parental expectations. Overall, these findings are consistent with the view that procrastination may be a response to the expectation that parents will respond to self-characteristics and behaviour in a harsh and controlling manner.

Saddler and Sacks (1993) studied the relationship between perfectionism and procrastination with depression, employing 42 undergraduate and 150 graduate students. Analyses showed that only the socially prescribed dimension of perfectionism was correlated with procrastination. Although both perfectionism and procrastination were
important in accounting for depression in these students. Relationships were strong between perfectionism and depression and between procrastination and depression. In addition, students with lower grades tended to be more perfectionistic, more depressed, and to procrastinate more, which, with respect to procrastination, is not consistent with some previous research by Semb, Glick, and Spencer (1979). Mean differences revealed that men reported more procrastination than women, regardless of grades, a finding that is at variance with previous research by Ferrari (1992) and Solomon and Rothblum (1984). The findings regarding perfectionism and procrastination substantiate previous research. (Ferrari, 1992: Flett et al., 1992; Martin et al.) while they also afford the opportunity to extend our understanding of these cognitive-behavioural factors and their relationship to depression in university students. Analyses show that the self, other, and socially prescribed types of perfectionism, as well as procrastination, were positively correlated with depression. However, only socially prescribed perfectionism was positively related to procrastination.

The prevalent finding throughout the research reviewed is that perfectionism and procrastination are correlated, the most evident association being a positive association between socially prescribed perfectionism and both the general and academic aspects of procrastination.

THE THEORETICAL MODEL

From this review of the research literature bearing on the problem of the relationship between perfectionism and procrastination I developed a path analysis model specifying the antecedents of self-oriented perfectionism and academic procrastination, a reciprocal relationship between the two constructs, and their effects on academic accomplishment (see Figure 1). The model consists of ten exogenous variables (X's), including social
psychological (parental authority and self-efficacy). social demographic (socio-economic status background, number of siblings and population of the community of origin). and individual-level (age, gender, and semester level) variables, and three endogenous variables (Y's): self-oriented perfectionism, academic procrastination and academic accomplishment.

In order to make the model for estimating the reciprocal relationship between perfectionism and procrastination identifiable, I employed socially prescribed perfectionism (X_9), and general procrastination (X_{10}) as instrumental variables for self-oriented perfectionism (Y_1) and academic procrastination (Y_2), respectively. The model specifies that these two constructs, in turn, affect accomplishment as measured by hours spent studying.

My initial intention was to use parental authority (X_1) as an instrumental variable for self-oriented perfectionism (Y_1) and self-efficacy (X_2) as an instrumental variable for academic procrastination (Y_2). Unfortunately, while the relationship between parental authority and self-oriented perfectionism and that between self-efficacy and academic procrastination were in the expected direction, the effects were weak. Therefore, they could not serve as instrumental variables in my analysis. Fortunately, two other constructs [socially prescribed perfectionism (X_9) and general procrastination (X_{10})] were available to employ as instrumental variables.

As I worked on my exploratory LISREL model, it became clear that socially prescribed and other-oriented perfectionism were not indicators of a single latent construct. Moreover, I was interested in the perfectionism of individuals, as measured by self-oriented perfectionism. As a result, I dropped other-oriented perfectionism from my analysis and, as
discussed above, adopted socially prescribed perfectionism as an instrumental variable for
self-oriented perfectionism.

For the procrastination construct, I adopted the general procrastination measure as an
instrumental variable for academic procrastination, not because the two measures might not
be used as indicators of the same construct, but because it seemed more reasonable to
consider general procrastination as an antecedent of academic procrastination. To expound.
I consider general procrastination as a long standing, enduring trait, and academic
procrastination as a manifestation of this trait in a particular social context.

Now that I have described the model, I will explain its origins. The model is a result
of my initial interest in the relationship between perfectionism and procrastination coupled
with relationships among variables identified through my review of the literature. In the
next four sections I will relate my literature review to each of the endogenous variables (Y_1,
Y_2, and Y_3) as well as to the relationship between Y_1 (self-oriented perfectionism) and Y_2
(academic procrastination).

**Antecedents of Self-oriented Perfectionism (Y_1)**

With respect to the path from parental authority (X_1) to self-oriented perfectionism
(Y_1) Flett et al. (1995) report a positive association between an authoritative style of
parenting (X_1) and self-oriented perfectionism (Y_1) for females.

Whereas I have not specified a causal relationship between parental authority (X_1)
and socially prescribed perfectionism (X_0), there may quite possibly be an effect of parental
authority (X_1) on socially prescribed perfectionism (X_0) and therefore, if self-oriented
perfectionism (Y_1) effects socially prescribed perfectionism (X_0), parental authority (X_1)
may affect self-oriented perfectionism (Y_1) indirectly through socially prescribed
perfectionism ($X_0$). Flett et al. (1995) indicated that parental authority styles contributed to levels of perfectionism in university students. They found that, for males, socially prescribed perfectionism ($X_0$) was positively associated with high ratings of authoritarian parenting behaviours ($X_1$); and for females, socially prescribed perfectionism ($X_0$) was positively associated with permissiveness ($X_1$) from subjects' fathers. While the direction of the effect is dictated by my theory, these correlational findings support the path of parental authority ($X_1$) affecting self-oriented perfectionism ($Y_1$).

As for the effect of self-efficacy ($X_2$) on self-oriented perfectionism ($Y_1$), there is no direct evidence to support this path. However, indirect support can be found from the correlation between self-efficacy ($X_2$) and socially prescribed perfectionism ($X_0$). Flett et al. (1996) confirmed that socially prescribed perfectionism ($X_0$) was associated with more negative self-perceptions ($X_2$) of problem-solving orientation. While I have not specified a causal path between self-efficacy ($X_2$) and socially prescribed perfectionism ($X_0$) in my model, it is possible that socially prescribed perfectionism ($X_0$) affects self-efficacy ($X_2$), in turn transmitting an effect to self-oriented perfectionism ($Y_1$). The finding provided by Flett et al. supports the possibility that socially prescribed perfectionism ($X_0$) affects self-efficacy ($X_2$).

The paths of socio-economic status background ($X_3$), number of siblings ($X_4$), population of community of origin ($X_5$), age ($X_6$), gender ($X_7$), and semester level ($X_8$) affecting self-oriented perfectionism ($Y_1$) were considered as possible antecedents of perfectionism. Many of the studies included these exogenous ($X$) variables as well, but rarely did they contribute to significant findings.
The path of socially prescribed perfectionism ($X_0$) affecting self-oriented perfectionism ($Y_1$) came about as a result of statistical analysis and theoretical thinking. It seems logical that if perfectionistic traits are imposed on someone by others, they are going to proceed to impose them on themselves. This perspective has not been considered previously; however, it is one worth exploring.

Both Martin et al. (1993) and Frost et al. (1990) reported a significant negative correlation between procrastination ($X_{10}$) and self-oriented perfectionism ($Y_1$). Their evidence of the relationship supports the path between general procrastination ($X_{10}$) and self-oriented perfectionism ($Y_1$) with the direction of the effect being dictated by my theory.

In summary, the correlational findings of previous studies coupled with the specification of the direction of the effects from my theory, supports the paths of the exogenous ($X$) variables affecting self-oriented perfectionism ($Y_1$).

**Antecedents of Academic Procrastination ($Y_2$)**

For my path of parental authority ($X_1$) affecting academic procrastination ($Y_2$), I found evidence of a positive correlation. Frost et al. (1990) reported that high parental criticism and high parental expectations ($X_1$) were associated positively with increased academic procrastination ($Y_2$). Frost et al. (1990) concluded that procrastination might be a response to the expectation that parents will respond to self-characteristics in a harsh and controlling manner.

As for the effect of self-efficacy ($X_2$) on academic procrastination ($Y_2$), multiple regression analyses of self-reported scales by Ferrari et al. (1992) revealed that low self-efficacy ($X_2$) negatively affects academic procrastination ($Y_2$) and that frequent procrastinators tended to believe that they had little control over their own behaviour.
The correlation of exogenous ($X_2$ and $X_{10}$) variables in my model may mask an indirect effect of self-efficacy ($X_2$) on academic procrastination ($Y_2$) via general procrastination ($X_{10}$). Ferrari et al. (1992) also reported that general self-efficacy ($X_2$) predicted the stated reasons for and frequency of general procrastination ($X_{10}$). Tuckman (1991) and Ferrari et al. (1992) report a negative correlation between self-efficacy ($X_2$) and general procrastination ($X_{10}$). However, Shoham-Salomon et al. (1989) report a positive correlation between perceived self-efficacy ($X_2$) and general procrastination ($X_{10}$). While these findings support the existence of a relationship between $X_2$ and $X_{10}$, quite clearly their inconsistent nature with respect to direction (+ or -) demands future research.

The paths of socio-economic status background ($X_3$), number of siblings ($X_4$), population of community of origin ($X_5$), age ($X_6$), gender ($X_7$), and semester level ($X_8$) affecting $Y_2$ were considered as possible antecedents of procrastination. Many of the studies reviewed above included these exogenous variables.

My path of socially prescribed perfectionism ($X_9$) affecting academic procrastination ($Y_2$) was added to the model mainly because of theoretical possibility. However, Flett et al. (1992) and Frost et al. (1990) report evidence of a positive correlation between socially prescribed perfectionism ($X_9$) and academic procrastination ($Y_2$). There is also correlational evidence for a possible causal relationship between socially prescribed perfectionism ($X_9$) and general procrastination ($X_{10}$), therefore a possible indirect affect of socially prescribed perfectionism ($X_9$) on academic procrastination ($Y_2$) via general procrastination ($X_{10}$).

Martin et al. (1993), Saddler and Sacks (1993) and Ferrari (1992) all report a positive correlation between socially prescribed perfectionism ($X_9$) and general procrastination ($X_{10}$). While these correlational findings suggest that socially prescribed perfectionism ($X_9$) may
have a direct and indirect effect on academic procrastination \((Y_3)\). the theoretical model (Figure 1) dictates the direction of its effects.

My model specifies that general procrastination \((X_{10})\) affects academic procrastination \((Y_2)\). This is supported by Covington’s (1991) suggestion those individuals who procrastinate in everyday situations are inclined to procrastinate in specific situations (e.g., an academic one). To summarize, the correlational findings of studies reviewed coupled with the specification of the direction of the effects presented in Figure 1, supports the paths of the exogenous \((X)\) variables affecting academic procrastination \((Y_2)\).

**The Relationship between \(Y_1\) and \(Y_2\)**

A main objective of this thesis is to explore the relationship between self-oriented perfectionism \((Y_1)\) and academic procrastination \((Y_2)\). One could argue that self-oriented perfectionism \((Y_1)\) affects academic procrastination \((Y_2)\) because those who are concerned about doing something perfectly could understandably avoid things to escape the disappointment of not being able to satisfy their own high expectations. On the other hand, one could also argue that academic procrastination \((Y_2)\) affects self-oriented perfectionism \((Y_1)\) because by putting things off they may establish high standards for themselves that they simply cannot meet.

Through my review of the literature, I did not come across any studies that explored this reciprocal relationship from a causal perspective. As a result, I felt it was even more important to explore a possible causal relationship between the two constructs. While many studies consider the relationship between perfectionism and procrastination, their findings are correlational in nature. Moreover, the findings of these studies are inconsistent.
With regards to the paths between self-oriented perfectionism ($Y_1$) and academic procrastination ($Y_2$), Frost et al. (1990) report a negative correlation between self-oriented perfectionism ($Y_1$) and academic procrastination ($Y_2$), while Solomon and Rothblum (1984) found a positive correlation and Johnson and Slaney (1992), Muszynski and Akamatsu (1991) and Schouwenberg (1993) report finding no substantial relationship between the variables. These findings show that a relationship exists between the variables, however, the direction of the effects can not be identified through the correlational analyses employed by the researchers.

In the previous section, correlations between socially prescribed perfectionism ($X_a$) and self-oriented perfectionism ($Y_1$) as well as those between general procrastination ($X_{ii}$) and academic procrastination ($Y_2$) were considered. Theoretically, it is important to consider the possibility that these relationships may indirectly contribute to the effects of self-oriented perfectionism ($Y_1$) on academic procrastination ($Y_2$) as well as to those effects of academic procrastination ($Y_2$) on self-oriented perfectionism ($Y_1$).

The inconsistent findings among the studies with respect to the relationship between perfectionism and procrastination (that they are positively, negatively or not at all, related) could be credited to either sampling error, variations in the measurement instruments employed in the studies, or the researchers’ exploring the perfectionism and procrastination constructs differently (one dimensionally or multidimensionally).

Nonetheless, all of these findings are important for the support of my paths of $Y_1$ affecting $Y_2$ and $Y_2$ affecting $Y_1$.

**Antecedents of Academic Accomplishment ($Y_3$)**
The academic accomplishment variable ($Y_3$) was added to the model to take the research one step further, to consider a behavioural outcome. Unfortunately, I found no studies that considered behavioural outcomes for neither perfectionism nor procrastination. This additional construct then, is explored mainly as a result of theoretical thinking and personal interest with respect to influence of the relationship between perfectionism and procrastination. Since it has not been considered previously, it is an angle worth exploring.

In the next chapter I will describe the similarities and differences between the findings of previous research and those from my study.
To enhance readability, the $\phi$'s (covariances among exogenous variables) and $\gamma$'s (effects of exogenous on endogenous variables) are represented in a global fashion.
FIGURE 2: ORIGINS OF THE THEORETICAL CAUSAL MODEL

Social Psychological Variables
X₁ - Parental Authority
X₂ - Self-Efficacy

Social Demographic Variables
X₃ - Socio-Economic Status Background
X₄ - Number of Siblings
X₅ - Population of Community of Origin

Individual Level Variables
X₆ - Age
X₇ - Gender
X₈ - Semester Level

Instrumental Variables
X₉ - Socially Prescribed Perfectionism
X₁₀ - General Procrastination

Y₁ Self-Oriented Perfectionism
Flett, Hewitt & Singer, 1995
Flett, Hewitt, Blankstein, Solnik & VanBrunschoot, 1996
Statistical analysis & theoretical thinking

Ferrari, Parker & Ware, 1992; Tuckman, 1991; Shoham-Salomon, Avner & Neeman, 1989

Y₂ Academic Procrastination
Flett, Blankstein, Hewitt & Koledin, 1992; Frost, Marten, Lahart & Rosenblate, 1990
Covington, 1991

Y₃ Academic Accomplishment
Frost, Marten, Lahart & Rosenblate, 1990; Solomon & Rothblum, 1984; Johnson & Slaney, 1992; Muszynski & Akamatsu, 1991; Schouwenberg, 1992

Theoretical thinking & personal interest

Theoretical thinking & personal interest
CHAPTER 2: METHODOLOGY

SUBJECTS

A total of 112 undergraduate students (33 men, 79 women) from the University of Guelph participated in this study. The mean age was 22.36 years with a standard deviation of 1.38. Questionnaires were completed during first and third year social science classes (59 first year students, 53 third year students). 105 of the subjects were enrolled in full-time studies.

MEASUREMENT

The measurement instrument consists of 26 open-ended questions (i.e. age, gender) and 89 statements requiring a response ranging from disagree (1) to agree (7), measured by a 7-point Likert scale. The questionnaire comprised the MPS (Multidimensional Perfectionism Scale) (Hewitt and Flett, 1989, 1991), measuring three dimensions of perfectionism (socially prescribed, self-oriented, and other-oriented): the Student Procrastination Indices, a scale developed by myself and my advisor, measuring both general and academic procrastination: the GSE (General Self-Efficacy Scale) (Sherer et al. 1982): an index based on a few questions selected from the PAQ (Parental Authority Questionnaire) (Buri, 1991): questions concerning how students spent their time (studying, reading, with family, with friends, at the bar, participating in sports, attending sporting events, and working at a job) and single-item questions pertaining to the social demographic background of respondents and academic performance.

Table 1 provides a more detailed description of the constructs employed in this study, and their measurement.
<table>
<thead>
<tr>
<th>Concept Name</th>
<th>Conceptualization</th>
<th>Operationalization</th>
</tr>
</thead>
</table>
| **Procrastination** | - a tendency to delay or avoid tasks that should be completed  
- academic: the self-reported tendency to always or nearly always put off academic tasks  
- general: to nearly always or always experience problematic levels of anxiety associated with this procrastination | - Student Procrastination Scale (a self-developed scale by myself and my advisor): a 28-item self-report measure of procrastination tendencies which is made up of 2 sub-scales considering the academic (16 items) and the general (12 items) aspects of procrastination |
| **Perfectionism** | - a set of self-defeating thoughts and behaviours aimed at achieving excessively high impractical goals  
- socially prescribed perfectionists: believe that significant others hold unrealistic standards for them, harshly evaluate them, and pressure them to be perfect  
- self-oriented perfectionists: set exacting standards for themselves and engage in harsh self-evaluation while striving to be perfect and to avoid failure  
- other-oriented perfectionists: hold unreasonable standards for significant others, place importance on being perfect, and harshly evaluate their performance (Hewitt and Flett, 1989, 1991: Saddler and Sacks, 1993) | - Multidimensional Perfectionism Scale (MPS) (Hewitt and Flett, 1989, 1991): a 45-item self-report measure of perfectionistic tendencies: it assesses 3 dimensions: (1) self-oriented perfectionism, (2) other-oriented perfectionism, and (3) socially prescribed perfectionism |
| **Activity and Productivity** | - the outcomes of perfectionism and procrastination considering  
- academic activities  
- social activities  
- extra-curricular activities  
- academic performance | - single item indicators  
- time spent studying, reading  
- time spent with family and friends and at the bar  
- time spent participating in sports, attending sporting events and working at a job  
- completing the degree in time specified by the university, semester grades, university career grades |
| **Parental Authority** | - significance of the influence of significant others (parents) measured by the type of parental authority style: permissive, authoritarian, or authoritative. (6 indicators derived from Flett, Hewitt, and Singer’s article Perfectionism and Parental Authority Styles. | - 6 questions were selected from the Parental Authority Questionnaire (Buri, 1991): a 30-item measure in which the scores are derived from the appraisals of the parents’ authority by their son or daughter. The scale was developed for the purpose of measuring Baumrind’s (1971) permissive, authoritarian, and authoritative parental authority prototypes |
SES background

Population of community of origin

Number of siblings

Age

Gender

Present level of education

Self-efficacy

* one's perception of their own competence and ability

* socio-economic background measured by the occupation(s) of parent(s) of the subject

* number of brothers and sisters in one's immediate family

* in order to establish rural urban residence

* male or female

* age (in years) at date of survey participation

* year of degree presently enrolled in

* 10 questions were selected from the adaptation of the General Self-Efficacy Scale (Zhang, and Schwarzer, 1995); of which the original was a 23-item measure which considered elements of both general and social self-efficacy (Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, and Rogers, 1982).

* The 1981 Socio-economic Index for Occupations in Canada (Blishen, Carroll, and Moore, 1987): an socio-economic index for the total Canadian labour force, based on 1981 census data: these indexes portray the occupational structure as a hierarchy based on a set of intercorrelated variables, chiefly prestige, income and education.

* single item indicator

* single item indicator

* single item indicator

* single item indicator

METHOD OF ANALYSIS

Following the collection and coding of the completed surveys, the data were recorded and statistical analysis was performed using SPSS (Statistical Package for the Social Sciences) (Norusis. M.J./SPSS Inc.. 1989-1995).

Descriptive statistics were obtained on each of the variables in the study. The statistics collected include the mean (average of all of the responses), standard deviation (distance of the individual response from the mean), kurtosis (peakedness of the distribution of the responses), skewness (the symmetry of the responses), minimum and maximum responses, range (distance between the minimum and maximum), standard error of the mean.
(the average sampling error of the mean for the particular sampling distribution), and the variance of responses (the standard deviation squared). The output collected through descriptive statistics is helpful in understanding the sample from which the data was collected.

Internal consistency reliabilities of each of the multiple indicator constructs were computed using the Cronbach (1951) alpha coefficient. Those tested were the parental authority construct, the self-efficacy construct, the three aspects of perfectionism (self-oriented, other-oriented and socially prescribed), the 2 sub-scales of procrastination (general and academic), and the three areas of accomplishment (academic, social and extra-curricular).

LISREL (linear structural relation) (Joreskog and Sorbom, 1993) was employed to estimate the theoretical causal model presented in Figure 1. I conducted this analysis in two stages: the first to explore the reciprocal relationship between self-oriented perfectionism and academic procrastination; the second to explore the outcomes of the process represented by the model on an outcome variable, academic accomplishment.

My objective here was to estimate the reciprocal relationship between self-oriented perfectionism and academic procrastination, while considering the effects of the exogenous (X) variables on each variable in that relationship. My first step was to run the LISREL program with all of the variables in the model. By considering all paths in the model, the weak ones could be identified and dropped from the model to obtain a more parsimonious model. Measurement error values were incorporated for the parental authority (.405), self-efficacy (.077), self-oriented (.119) and socially prescribed (.112) perfectionism and general (.191) and academic (.123) procrastination constructs. I specified psi [correlation among the
error of the endogenous variables \((Y_1 \text{ and } Y_2)\) to equal 0 \((\psi_{12}=0)\). Two gammas \((\gamma_{11} \text{ and } \gamma_{24})\) with near 0 effects on \(Y_1\) and \(Y_2\), respectively, were eliminated to make the model identifiable. I ran the model again and inspected the gammas. I dropped two more gammas \((\gamma_{18} \text{ and } \gamma_{25})\) which had values near 0 and ran the model again with the six remaining gammas.

At this point I examined the gammas with the smallest \(t\) values \((\gamma_{14}, \gamma_{15}, \gamma_{16}, \gamma_{28}, \text{ and } \gamma_{29})\) and eliminated them from the equation. After running the model again, the small and insignificant coefficient for \(\beta_{12} (Y_2 \rightarrow Y_1)\) suggested that I drop this path in subsequent analysis. At this stage, all of the gammas had \(t\) values \(\geq 1\). \(R^2 = .382\) for \(Y_1\) and \(.611\) for \(Y_2\). The probability \((P = .0658)\) for chi square (the goodness of fit test) suggests that the model is a reasonably good fit to the data. That is, that I could not reject the null hypothesis (that the model fits the data). The GFI (goodness of fit index) was \(.973\) and the MI (modification index) was \(1.681\) for \(\gamma_{16} (\text{age } \rightarrow \text{ self-oriented perfectionism})\), a path dropped from the model in previous analysis), suggesting that this path be reconsidered in the model. I ran the model one more time deleting \(\beta_{12}\) and adding \(\gamma_{16}\) back in.

For the final model exploring the reciprocal relationship between \(Y_1\) (self-oriented perfectionism) and \(Y_2\) (academic procrastination), all gammas have \(t\) values greater than or equal to 1. \(R^2 = .403\) for \(Y_1\) and \(.609\) for \(Y_2\), explaining 40% and 60% of the variance). The probability \((P = .0731)\) for chi square suggests an improved fit from the previous run and the GFI (goodness of fit index) = \(.976\). Since the largest MI (modification index) was only \(1.00\) (for \(\gamma_{28}\)) I made no additional revisions on the model.
Following the exploration of the reciprocal relationship between perfectionism and procrastination I added an outcome variable (academic accomplishment) to the model and took my exploration one step further. I attempted the analysis with the composite 'academic accomplishment' variable (made up of time spent studying, time spent reading, completion of degree in specified amount of time, semester grades and career grades). This composite had low reliability so when included as an outcome variable in the exploratory analysis, it was not surprising that peculiar coefficients were obtained [e.g., negative R² values and a negative psi value (ψ33)]. Hence, since these items did not constitute a good composite, I tried each item of the composite separately. I settled upon hours spent studying as a single indicator of academic accomplishment, postponing the development of a new adequate composite until future research.

For the initial run all of the gammas (γ) were included and none of the gammas (γ) were fixed to 0. For the next run of the model, I dropped all gammas (γ) with t values <1 (γ36, γ38, γ39, γ310) and freed up γ28 (set to 0 in first model) since it was the largest MI at 1.029. Now all t values were greater than 1 except for γ28 (t = .99). So, the final model includes all gammas (γ) with t values greater than 1 (except for γ28). R² = .403 for Y1 and .621 for Y2 and .481 for Y3 (40% and 62% and 48% of the variance is explained). The probability (P = .262) for chi square represents a good fit of the model to the data. The GFI (goodness of fit index) = .98, and the largest MI (modification index) is only .386 for γ25 (population of community of origin → academic procrastination) so I made no additional revisions on the model. The next chapter details the results of these analyses.
CHAPTER 3: FINDINGS

DESCRIPTIVE FINDINGS

Means and standard deviations of all of the variables for the sample are reported in Table 2. Also included are values of Cronbach (1951) alpha coefficient measuring the internal consistency of the self-oriented and socially prescribed subscales of the MPS (Multidimensional Perfectionism Scale) (Hewitt and Flett, 1989, 1991), the general and academic subscales of the Student Procrastination Index (Busko and MacKinnon, 1997), the PAQ (Parental Authority Questionnaire) (Buri, 1991), the GSE (General Self-Efficacy Scale) (Sherer et al., 1982), and the academic accomplishment measure. As reported in Table 2, the alpha coefficients indicate high internal consistency for all but two variables: parental authority and academic accomplishment. For parental authority, the lower alpha ($\alpha = .5942$) may be a result of an incomplete measure since we selected 6 questions from the total 30 of the PAQ (Parental Authority Questionnaire) (Buri, 1991). For academic accomplishment, I had initially created an index based on hours spent studying, hours spent reading, semester and career grades, and expectation of completion in suggested time frame. Obviously, this measure did not turn out to be an homogenous one ($\alpha = .2859$). Therefore, I decided that for the model predicting accomplishment I would use a single indicator, hours spent studying (which should be an indication of academic accomplishment). The low reliability for academic accomplishment can be attributed to the restrictive nature of my sample (the use of 1st and 3rd year students), and possibly the use of self-reported grades.
TABLE 2: MEANS, STANDARD DEVIATIONS, AND RELIABILITIES OF THE VARIABLES EMPLOYED IN THE STRUCTURAL EQUATION MODEL

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Alpha (α) (Standardized alpha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y₁ - Self-oriented perfectionism</td>
<td>4.395</td>
<td>.961</td>
<td>.8722 (.8706)</td>
</tr>
<tr>
<td>Y₂ - Academic procrastination</td>
<td>3.813</td>
<td>.974</td>
<td>.8648 (.8692)</td>
</tr>
<tr>
<td>Y₃ - Academic Accomplishment (hours spent studying)</td>
<td>9.495</td>
<td>8.258</td>
<td>-</td>
</tr>
<tr>
<td>X₁ - Parental authority</td>
<td>3.189</td>
<td>.984</td>
<td>.5942 (.5783)</td>
</tr>
<tr>
<td>X₂ - Self-efficacy</td>
<td>5.457</td>
<td>.850</td>
<td>.8851 (.8937)</td>
</tr>
<tr>
<td>X₃ - Socio-economic status background</td>
<td>48.481</td>
<td>12.034</td>
<td>-</td>
</tr>
<tr>
<td>X₄ - Number of siblings</td>
<td>.878</td>
<td>.688</td>
<td>-</td>
</tr>
<tr>
<td>X₅ - Population of community of origin</td>
<td>470324.096</td>
<td>912055.155</td>
<td>-</td>
</tr>
<tr>
<td>X₆ - Age</td>
<td>2.929</td>
<td>1.380</td>
<td>-</td>
</tr>
<tr>
<td>X₇ - Gender</td>
<td>.705</td>
<td>.458</td>
<td>-</td>
</tr>
<tr>
<td>X₈ - Semester level</td>
<td>4.369</td>
<td>2.136</td>
<td>-</td>
</tr>
<tr>
<td>X₉ - Socially prescribed perfectionism</td>
<td>3.177</td>
<td>.819</td>
<td>.8222 (.8325)</td>
</tr>
<tr>
<td>X₁₀ - General procrastination</td>
<td>3.982</td>
<td>1.025</td>
<td>.8219 (.8202)</td>
</tr>
</tbody>
</table>

MODEL FINDINGS

Figure 3 reports the results of the estimation of effects in my theoretical model. The main finding with respect to the relationship between self-oriented perfectionism (Y₁) and academic procrastination (Y₂) is that self-oriented perfectionism (Y₁) has a negative effect (-.292) on academic procrastination (Y₂). As for the effects of the exogenous variables employed as instrumental variables to estimate the reciprocal effects of Y₁ and Y₂, socially prescribed perfectionism (X₉) has a strong positive effect (.558) on self-oriented perfectionism (Y₁), and general procrastination (X₁₀) had a significant positive effect (.670) on academic procrastination (Y₂). The modest negative effect (-.318) of general procrastination (X₁₀) on self-oriented perfectionism (Y₁) somewhat weakens its effectiveness as an instrumental variable for academic procrastination (Y₂).

Figure 4 reports my re-estimation of effects when an outcome variable (Y₃, academic accomplishment measured by hours spent studying) is added to the model.
The only change from Figure 3 with respect to the influence of exogenous variables on self-oriented perfectionism ($Y_1$) and academic procrastination ($Y_2$) is the appearance of an effect of semester level ($X_8$) on academic procrastination ($Y_2$). The values of other effects also change to some extent. Most noteworthy, the influence of age ($X_6$) on academic procrastination ($Y_2$) increases from -.094 to -.207 and the influence of parental authority ($X_1$) on academic procrastination ($Y_2$) increases from .084 to .120.

As for the effects of the exogenous variables ($X_1$ to $X_{10}$) and earlier endogenous ($Y_1$ and $Y_2$) on academic accomplishment ($Y_3$), parental authority ($X_1$) and socio-economic status background ($X_3$) have significant positive effects (.349 and .239, respectively), while academic procrastination ($Y_2$) has a significant negative effect (-.451).

To add greater insight into the relationships implied by the model, I have conducted a decomposition of effects analysis, reported in Table 3. Table 3 reports the direct, indirect, and total standardized effects of earlier on later variables in the model. This enables me to take indirect effects into account when considering the effects of variables on one another.

Because the effects illustrated on Figures 3 and 4 are direct effects only.

**Effects of exogenous (X) variables on $Y_1$**

The total effects of all exogenous variables on self-oriented perfectionism ($Y_1$) consist of direct effects, because there are no intervening variables between the exogenous variables and $Y_1$. Among the effects, self-efficacy ($X_2$), gender ($X_7$) and socially prescribed perfectionism ($X_9$) have positive effects on $Y_1$ (.142, .187, and .559, respectively). while socio-economic status background ($X_3$), age ($X_6$) and general procrastination ($X_{10}$) have negative effects on $Y_1$ (-.126, -1.22, and -.317, respectively).


Effects of exogenous (X) variables on \( Y_2 \)

The paths between the exogenous variables and academic procrastination (\( Y_2 \)) involve an intervening variable (\( Y_1 \)). Thus, the effects of exogenous variables on \( Y_2 \) consist in some cases of both direct and indirect effects. The total effect (.120) of parental authority (\( X_1 \)) is direct. The total effect of self-efficacy (\( X_2 \)) is .114 (.157 direct and -.042 indirect). For socio-economic status background (\( X_3 \)) the total effect on \( Y_2 \) is .171 (.133 direct and .038 indirect). For age (\( X_6 \)) the total effect is -.170 (-.207 direct and .036 indirect). For gender (\( X_7 \)) the total effect is -.175 (-.119 direct and -.056 indirect). For semester level (\( X_8 \)) the total effect (.139) is direct and for socially prescribed perfectionism (\( X_9 \)) the total effect (-.166) is indirect. For general procrastination (\( X_{10} \)) the total effect on \( Y_2 \) is .772 (.678 direct and .094 indirect).

The relationship between \( Y_1 \) and \( Y_2 \)

The total effect of self-oriented perfectionism (\( Y_1 \)) on academic procrastination (\( Y_2 \)) is direct (-.297), because there are no intervening variables between the two variables.

Effects of exogenous (X) variables and earlier endogenous (\( Y_1 \) and \( Y_2 \)) on \( Y_3 \)

The paths between all exogenous variables (\( X_1 \) to \( X_{10} \)) and academic accomplishment (\( Y_3 \)) involve intervening variables (\( Y_1 \) and \( Y_2 \)). Hence, the total effects involve, in some cases, indirect as well as direct effects.

Of the exogenous variables, parental authority (\( X_1 \)) has a total effect of .295 on academic accomplishment (\( Y_3 \) (.349 direct and -.054 indirect). For self-efficacy (\( X_2 \)) the total effect is -.230 (-.202 direct and -.028 indirect). For socio-economic status background (\( X_3 \)) the total effect is .141 (.239 direct and -.098 indirect). For both number of siblings (\( X_4 \))
and population of community of origin (X_5). The total effects (-.180 and .132, respectively) are direct. For age (X_6) the total effect of .056 is indirect. For gender (X_7) the total effect is .286 (.176 direct and .110 indirect). For both semester level (X_8) and socially prescribed perfectionism (X_9) the total effects on Y_3 (-.063 and .169, respectively) are indirect. For general procrastination (X_{10}) the total effect of -.401 is indirect.

The path between academic procrastination (Y_2) and academic accomplishment (Y_3) does not encounter an intervening variable and, therefore, the total effect (-.451) of academic procrastination (Y_2) on academic accomplishment (Y_3) is direct. The total effect of self-oriented perfectionism (Y_1) on academic accomplishment (Y_3) involves academic procrastination (Y_2) as an intervening variable. The total effect (.168) consists of direct (.302) and indirect (.134) effects.

Having reported the findings from the study, I discuss their substantive importance and practical implications in the following chapter.
FIGURE 3 - STRUCTURAL EQUATION MODEL

Social Psychological Variables

\( \delta_1 \rightarrow X_1 \) - Parental Authority
\( \delta_2 \rightarrow X_2 \) - Self-Efficacy

Social Demographic Variables

\( \delta_3 \rightarrow X_3 \) - Socio-Economic Status Background
\( \delta_4 \rightarrow X_4 \) - Number of Siblings
\( \delta_5 \rightarrow X_5 \) - Population of Community of Origin

Individual Level Variables

\( \delta_6 \rightarrow X_6 \) - Age
\( \delta_7 \rightarrow X_7 \) - Gender
\( \delta_8 \rightarrow X_8 \) - Semester Level

Instrumental Variables

\( \delta_9 \rightarrow X_9 \) - Socially Prescribed Perfectionism
\( \delta_{10} \rightarrow X_{10} \) - General Procrastination

\( \epsilon_1 \)
\( \zeta_1 \)

\( Y_1 \) Self-Oriented Perfectionism
\( \zeta_2 \)
\( \epsilon_2 \)

\( Y_2 \) Academic Procrastination

\( \phi \)'s

\( \delta_1 \rightarrow .405 \)
\( \delta_2 \rightarrow .077 \)
\( \delta_3 \rightarrow .161 \)
\( \delta_4 \rightarrow .084 \)
\( \delta_5 \rightarrow -.127 \)
\( \delta_6 \rightarrow .136 \)
\( \delta_7 \rightarrow .187 \)
\( \delta_8 \rightarrow -.123 \)
\( \delta_9 \rightarrow .558 \)
\( \delta_{10} \rightarrow .670 \)
FIGURE 4 - STRUCTURAL EQUATION MODEL FOR THE EFFECTS OF PERFECTIONISM AND PROCRASTINATION ON ACADEMIC ACCOMPLISHMENT

Social Psychological Variables

X₁ - Parental Authority
X₂ - Self-Efficacy

Social Demographic Variables

X₃ - Socio-Economic Status Background
X₄ - Number of Siblings
X₅ - Population of Community of Origin

Individual Level Variables

X₆ - Age
X₇ - Gender
X₈ - Semester Level

Instrumental Variables

X₉ - Socially Prescribed Perfectionism
X₁₀ - General Procrastination

Y₁ - Self-Oriented Perfectionism
Y₂ - Academic Procrastination
Y₃ - Academic Accomplishment (Studying)

[Diagram with arrows and coefficients showing the relationships between variables]
Table 3: Decomposition of Effects – Standardized Total, Direct and Indirect Effects on Endogenous Variables (Y₁, Y₂, Y₃) \(^a\)

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Total Effects</th>
<th>Direct Effects</th>
<th>Indirect Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Y₁_MPS_SELF</td>
<td>Y₂_PROC_ACA</td>
<td>Y₁_STUDYING</td>
</tr>
<tr>
<td>Y₁_MPS_SELF</td>
<td>-0.297</td>
<td>0.302</td>
<td>-0.297</td>
</tr>
<tr>
<td>Y₂_PROC_ACA</td>
<td>-0.451</td>
<td></td>
<td>-0.451</td>
</tr>
<tr>
<td>Y₃_STUDYING</td>
<td>-0.317</td>
<td>0.772</td>
<td>-0.401</td>
</tr>
<tr>
<td></td>
<td>0.678</td>
<td></td>
<td>0.094</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Y₁_MPS_SELF</th>
<th>Y₂_PROC_ACA</th>
<th>Y₃_STUDYING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.134</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a:\) Legend:

Y₁\_MPS\_SELF: self-oriented perfectionism  
Y₂\_PROC\_ACA: academic procrastination  
Y₃\_STUDYING: hours spent studying  

X₁\_PAQ\_AVG: parental authority  
X₂\_GSE\_AVG: self-efficacy  
X₃\_SES: socio-economic status background  

X₄\_SIBLINGS: number of siblings  
X₅\_POP: population of community of origin  
X₆\_AGE1: age  
X₇\_GENDER: gender  
X₈\_SEMELVE: semester level  
X₉\_MPS\_SP: socially prescribed perfectionism  
X₁₀\_PROC\_GEN: general procrastination
CHAPTER 4: DISCUSSION/CONCLUSION

The purpose of my thesis was to investigate the relationship between procrastination and perfectionism in an academic environment, considering antecedent influences on each of these variables, and the effects of procrastination and perfectionism in turn, on academic, social and extra-curricular accomplishments. After preliminary statistical analysis, I narrowed my focus on the relationship between self-oriented perfectionism and academic procrastination. As a consequence, I eliminated other-oriented perfectionism from consideration and specified socially prescribed perfectionism and general procrastination as exogenous variables, acting as instrumental variables for self-oriented perfectionism and academic procrastination, respectively. I also narrowed my concern to the effects of self-oriented perfectionism and academic procrastination on a single indicator of academic accomplishment (hours spent studying) because I could not construct a reliable composite measure of this construct from the available data.

As specified by my theoretical model, I was interested in the following questions:
(1) What are the influences on self-oriented perfectionism and academic procrastination? (2) What is the nature of the causal relationship between self-oriented perfectionism and academic procrastination? and (3) What are the effects of self-oriented perfectionism and academic procrastination on academic accomplishment or productivity?

I explored these questions with a path analysis model specifying the antecedents of self-oriented perfectionism and academic procrastination, a reciprocal relationship between the two constructs, and their effects on academic accomplishment.
With respect to the first question, the most notable effects on self-oriented perfectionism ($Y_1$) were socially prescribed perfectionism ($X_9$) (0.558) and general procrastination ($X_{10}$) (-0.318). The finding that socially prescribed perfectionism ($X_9$) has a positive effect on self-oriented perfectionism ($Y_1$) implies, as expected, that if others impose perfectionistic expectations on a person, he or she will tend to internalize them. The finding that general procrastination ($X_{10}$) has a negative effect on self-oriented perfectionism ($Y_1$) coincides with the correlational findings of both Martin et al. (1993) and Frost et al. (1990), allowing for the fact that I specified the direction of the causal relationship between the two constructs.

I also found that general procrastination ($X_{10}$) had a strong positive effect (0.670) on academic procrastination ($Y_2$). This finding coincides with the findings of Covington (1991) that those individuals who procrastinate in everyday situations are inclined to procrastinate in specific situations (e.g., academic).

The second question pertains to the central question of my thesis research: the relationship between self-oriented perfectionism ($Y_1$) and academic procrastination ($Y_2$). My estimation of the model with LISREL revealed that self-oriented perfectionism ($Y_1$) has a negative effect (-0.292) on academic procrastination ($Y_2$), while the reciprocal effect of academic procrastination ($Y_2$) on self-oriented perfectionism ($Y_1$) proved negligible. This finding coincides with the negative correlation between the two constructs found by Frost et al. (1990), while contradicting Solomon and Rothblum’s (1984) finding of a positive correlation between self-oriented perfectionism ($Y_1$) and academic procrastination ($Y_2$). In any case, my findings suggest that the relationship between self-oriented perfectionism ($Y_1$) and academic procrastination ($Y_2$) is not a reciprocal one.
The third question concerns the behavioural outcomes of perfectionism and procrastination on academic accomplishment, here measured by a single indicator (hours spend studying). Self-oriented perfectionism ($Y_1$) had a positive effect (.168) on academic accomplishment ($Y_3$) while academic procrastination ($Y_2$) had a significant negative effect (-.451). Another noteworthy effect on academic accomplishment ($Y_3$) is from parental authority ($X_1$) with a positive effect of .349. These findings suggest that individuals who are self-oriented perfectionists or responsive to authoritarian or authoritative parental authority would spend more hours studying. At the same time, those who procrastinate academically would spend fewer hours studying.

**SUBSTANTIVE and THEORETICAL IMPLICATIONS**

Most of the studies I reviewed consider the perfectionism and procrastination constructs multidimensionally; however, they neglect to explore how the separate dimensions affect each other. I believe that it is important to examine these effects. My theoretical model specifies that socially prescribed perfectionism affects self-oriented perfectionism and that general procrastination affects academic procrastination.

With respect to the methods of statistical analysis employed in the research I reviewed, many of the findings reported are correlational in nature. These findings are important in that they reveal the existence of an association and its direction (+ or -). What is lacking in these analyses, however, is the specification of causal effects. To estimate the causal effects specified in my model, I employed LISREL.

With regards to the relationship between self-oriented perfectionism ($Y_1$) and academic procrastination ($Y_2$), some believe that perfectionistic standards ($Y_1$) leads people to academically procrastinate ($Y_2$). Interestingly, I found the opposite: that self-oriented
perfectionism (Y₁) negatively affects academic procrastination (Y₂). This means that, the more a person is a self-oriented perfectionist, the less they procrastinate academically or the less a person is a self-oriented perfectionist, the more they procrastinate academically. Also implied by my findings is that academic procrastination (Y₂) does not lead to a significant increase (or decrease) in self-oriented perfectionism (Y₁); which some believe to be a common process of rationalization.

The findings with respect to the behavioural outcome variable, academic accomplishment (Y₃), as measured by hours spent studying, have logical implications. The positive effect of self-oriented perfectionism (Y₁) on academic accomplishment (Y₃) implies that high personal standards increase hours spent studying, while the negative effect of academic procrastination (Y₂) on academic accomplishment (Y₃) implies that high academic procrastination decreases hours spent studying.

**PRACTICAL IMPLICATIONS**

At the practical level, my findings have implications for enhancing academic accomplishment, as measured by hours spent studying. My results indicate that an individual who receives authoritarian (highly directive – exercise authority over their children) or authoritative (clear and firm direction, discipline is moderated by warmth, reason and flexibility) parental authority (X₁) or who is a self-oriented perfectionist (Y₁), will spend more hours studying. While one cannot easily change parental authority experienced by students, my finding that those who procrastinate academically will tend to spend less time studying suggests a point of intervention. By focusing on their study habits, time management, and setting goals, academic counselors could help increase the time students spend studying, hence their academic accomplishment. The many workshops and
seminars currently offered by most academic institutions could be suggested to these procrastinating students to address their needs. Additionally, with respect to the positive effect of self-oriented perfectionism ($Y_1$) on academic accomplishment ($Y_2$) which suggests that enhancing self standards would also lend to an increase of hours studying, focusing some attention to self standards and self esteem may be beneficial.

LIMITATIONS OF THE STUDY

The limitations of my study must be acknowledged. Perhaps the most significant limitation of this study is that the findings are based on a sample of university students and therefore, not generalizable to individuals in the general population. Additionally, since the results are based solely on self-report measures, they may contain a certain level of bias. If different data collection methods (e.g., focus groups or personal interviews) were consistent with my findings from survey research, this would attest to the validity of my theoretical model.

IMPLICATIONS FOR FUTURE RESEARCH

My results suggest several directions for future research. Most importantly, a more reliable instrument for measuring academic accomplishment needs to be developed. As discussed above, the multiple indicators I employed in my survey did not provide a reliable (internally consistent) measure of academic accomplishment. Because of its low reliability of .286, I could not employ this composite measure in my theoretical model and in its estimation using LISREL.

In addition, a more comprehensive sample of undergraduate students is required. Having only first and third year students may have been partially responsible for the low
reliability of my initial measure of academic accomplishment. Moreover, my limited sample restricts the generalization of my results to the population of undergraduate students as a whole.

Finally, a more reliable measure of parental authority needs to be developed. The use of too few items contributed to the low reliability of the measure (.594). Moreover, the self-reporting of subjects may have influenced the validity of data collected with this measure. To obtain more valid information regarding parental authority, future studies might collect parental authority data from both children and parents. However, while ideal, this strategy might not prove feasible.

In conclusion, the results of my study have shed some light on the questions proposed by my thesis, in particular the issue of the relationship between perfectionism and procrastination. The main finding of the study was that self-oriented perfectionism ($Y_1$) negatively affects academic procrastination ($Y_2$) and that the relationship between the two constructs is unidirectional rather than reciprocal. With regard to the influences on these variables, it is worth noting that socially prescribed perfectionism positively affects self-oriented perfectionism and that general procrastination positively affects academic procrastination. Finally, with respect to the influences of self-oriented perfectionism ($Y_1$) and academic procrastination ($Y_2$) on an outcome measure, self-oriented perfectionism ($Y_1$) positively affects academic accomplishment ($Y_3$) while academic procrastination ($Y_2$) has a negative effect.
REFERENCES


APPENDIX A: MEASUREMENT SCALES

MULTIDIMENSIONAL PERFECTIONISM SCALE (MPS)
(Paul L. Hewitt, Ph.D., & Gordon L. Flett, Ph.D., 1988)

Self-Oriented Perfectionism

1. When I am working on something, I cannot relax until it is perfect.
6. One of my goals is to be perfect in everything I do.
8. I never aim for perfection in my work.
12. I seldom feel the need to be perfect.
14. I strive to be as perfect as I can be.
15. It is very important that I am perfect in everything I attempt.
17. I strive to be the best at everything I do.
20. I demand nothing less than perfection of myself.
23. It makes me uneasy to see an error in my work.
28. I am perfectionistic in setting my goals.
32. I must work to my full potential at all times.
34. I do not have to be the best at whatever I am doing.
36. I do not have very high goals for myself.
40. I set very high standards for myself.
42. I must always be successful at school or work.

Socially Prescribed Perfectionism

5. I find it difficult to meet others' expectations of me.
9. Those around me readily accept that I can make mistakes too.
11. The better I do, the better I am expected to do.
13. Anything I do that is less than excellent will be seen as poor work by those around me.
18. The people around me expect me to succeed at everything I do.
21. Others will like me even if I don't excel at everything.
25. Success means that I must work even harder to please others.
30. Others think I am okay, even when I do not succeed.
31. I feel that people are too demanding of me.
33. Although they may not show it, other people get very upset with me when I slip up.
35. My family expects me to be perfect.
37. My parents rarely expected me to excel in all aspects of my life.
39. People expect nothing less than perfection from me.
41. People expect more from me than I am capable of giving.
44. People around me think I am still competent even if I make a mistake.
Other-Oriented Perfectionism

2. I am not likely to criticize someone for giving up too easily.
3. It is not important that the people close to me are successful.
4. I seldom criticize my friends for accepting second best.
7. Everything that others do must be of top-notch quality.
10. It doesn't matter to me when someone close to me does not do their absolute best.
16. I have high expectations for the people who are important to me.
19. I do not have very high standards for those around me.
22. I can't be bothered with people who won't strive to better themselves.
24. I do not expect a lot from my friends.
26. If I ask someone to do something, I expect it to be done flawlessly.
27. I cannot stand to see people close to me make mistakes.
29. The people who matter to me should never let me down.
38. I respect people who are average.
43. It does not matter to me when a close friend does not try their hardest.
45. I seldom expect others to excel at whatever they do.

STUDENT PROCRASTINATION SCALE
(self-developed scale)

General procrastination

1. When I have a deadline to meet, I wait until the last minute.
2. I can always find an excuse for not doing something I have to do.
3. I tend to waste a lot of time.
4. I put off making tough decisions.
5. I am almost always on time for appointments.
6. When I get tired or bored of a task I tend to put it off.
7. I dislike strict guidelines.
8. I needlessly put off important tasks.
9. I can't seem to change my habit of wasting time.
10. I tend to neglect tasks that I have difficulties with.
11. I get easily distracted when I am trying to focus on doing something.
12. When I make a decision I follow it through.

Academic Procrastination

1. When I have a term paper to write, I usually leave it until the last minute.
2. I generally prepare well in advance for exams.
3. When I have assigned readings I do them the night before or the day that they are due.
4. When I am having trouble understanding my work, I immediately seek help.
5. I regularly attend the classes that I am registered for.
6. I complete assigned work as soon as possible.
7. I usually send or hand in my registration package at the last minute.
8. If I need to add or drop a class I do it right away.
9. I put off starting assignments or readings for classes that I do not like.
10. I constantly try to improve my work habits.
11. I invest the necessary time into studying even if I find it boring.
12. I motivate myself to keep up with my work.
13. I finish important assignments with time to spare.
14. I allow time to check over assignments or papers before turning them in.
15. I rarely put off until tomorrow what I can do today.
16. I enjoy the challenge and excitement of waiting until the last minute to complete a task or assignment.

GENERAL SELF EFFICACY
(Jian Xin Zhang & Ralf Schwarzer, 1995)

1. I can always manage to solve difficult problems if I try hard enough.
2. If someone opposes me, I can find means and ways to get what I want.
3. It is easy for me to stick to my aims and accomplish my goals.
4. I am confident that I could deal efficiently with unexpected events.
5. Thanks to my resourcefulness, I know how to handle unforeseen situations.
6. I can solve most problems if I invest the necessary effort.
7. I can remain calm when facing difficulties because I can rely on my coping abilities.
8. When I am confronted with a problem, I can usually find several solutions.
9. If I am in a bind, I can usually think of something to do.
10. No matter of what comes my way, I am usually able to handle it.

PARENTAL AUTHORITY
(John R. Buri, 1991)

1. My mother/father has always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable. (authoritative)
2. As the children in my family were growing up, my mother/father consistently gave us direction and guidance in rational and objective ways. (authoritative)
3. As I was growing up my mother/father would get very upset if I tried to disagree with her/him. (authoritarian)
4. As I was growing up my mother/father let me know what behavior she/he expected of me, and if I didn’t meet those expectations, she/he punished me. (authoritarian)
5. As I was growing up, my mother/father allowed me to decide most things for myself without a lot of direction from him/her. (permissive)
6. As I was growing up, my mother/father seldom gave me expectations and guidelines for my behavior. (permissive)
Appendix B: Student Work and Study Habits

Today you are being asked to participate in a study of work standards and habits of university students. This study is completely voluntary and anonymous. The survey will only take 15 to 20 minutes. If you choose to complete the questionnaire, please follow all instructions provided and answer as many questions as accurately and as completely as possible. We thank you in advance for your time and participation in our study.

1. Sex: □ male    □ female

2. Age: _____

3. Marital status: _____

4. Number of siblings in your immediate family: sisters ___  brothers ___

5. Mother's occupation: ____________
   Father's occupation: ____________

6. Approximate population size of the community where you were brought up: _____

7. Enrolment status: □ full-time    □ part-time

   □ B.Sc. Akademia  □ B.A. Akademia  □ B.Sc.(Agr.)  □ B.Sc.(Eng.)
   □ B.Sc.(Env.)  □ B.L.A.  □ D.V.M.
   □ M.A.  □ M.Sc.  □ Ph.D.  □ other _____

9. Major: ____________

10. Semester level: _____

11. Average grade level achieved this past semester (your best guess): ____________

12. Average grade achieved throughout university career (your best guess): ____________

13. Will you complete your degree requirements in the recommended time of completion? (ie. 3 years for general, 4 years for honours)
   □ yes    □ no

14. In an average week, about how many hours do you spend on the following activities?
   ___ studying  ___ going to the show
   ___ reading  ___ playing sports (working out)
Listed below are a number of statements concerning work and study habits. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree, circle 7; if you strongly disagree, circle 1; if you feel somewhere in between, circle any one of the numbers between and 7.

<table>
<thead>
<tr>
<th>Item</th>
<th>Disagree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. When I have a term paper to write, I usually leave it until the last minute.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>16. I generally prepare well in advance for exams.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>17. When I have assigned readings I do them the night before or the day that they are due.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>18. When I am having trouble understanding my work, I immediately seek help.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>19. I regularly attend the classes that I am registered for.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>20. My mother/father has always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>21. I complete assigned work as soon as possible.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>22. I usually send or hand in my registration package at the last minute.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>23. If I need to add or drop a class I do it right away.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>24. I put off starting assignments or readings for classes that I do not like.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>25. When I have a deadline to meet, I wait until the last minute.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>26. I constantly try to improve my work habits.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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</tbody>
</table>
27. I can always find an excuse for not doing something I have to do.

28. I invest the necessary time into studying even if I find it boring.

29. I motivate myself to keep up with my work.

30. As the children in my family were growing up, my mother/father consistently gave us direction and guidance in rational and objective ways.

31. I tend to waste a lot of time.

32. I finish important assignments with time to spare.

33. I allow time to check over assignments or papers before turning them in.

34. I rarely put off until tomorrow what I can do today.

35. I put off making tough decisions.

36. I am almost always on time for appointments.

37. When I get tired or bored of a task I tend to put it off.

38. I dislike strict guidelines.

39. I needlessly put off important tasks.

40. As I was growing up my mother/father would get very upset if I tried to disagree with her/him.

41. I can't seem to change my habit of wasting time.

42. I tend to neglect tasks that I have difficulties with.

43. I get easily distracted when I am trying to focus on doing something.

44. When I make a decision I follow it through.

45. I enjoy the challenge and excitement of waiting until the last minute to complete a task or assignment.

<table>
<thead>
<tr>
<th>Disagree</th>
<th>Agree</th>
</tr>
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<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

57
46. When I am working on something, I cannot relax until it is perfect.

47. I am not likely to criticize someone for giving up too easily.

48. It is not important that the people close to me are successful.

49. I seldom criticize my friends for accepting second best.

50. As I was growing up my mother/father let me know what behavior she/he expected of me, and if I didn't meet those expectations, she/he punished me.

51. I find it difficult to meet others' expectations of me.

52. One of my goals is to be perfect in everything I do.

53. Everything that others do must be of top-notch quality.

54. I never aim for perfection in my work.

55. Those around me readily accept that I can make mistakes too.

56. It doesn't matter to me when someone close to me does not do their absolute best.

57. The better I do, the better I am expected to do.

58. I seldom feel the need to be perfect.

59. Anything I do that is less than excellent will be seen as poor work by those around me.

60. As I was growing up, my mother/father allowed me to decide most things for myself without a lot of direction from him/her.

61. I strive to be as perfect as I can be.

62. It is very important that I am perfect in everything I attempt.

63. I have high expectations for the people who are important to me.

64. I strive to be the best at everything I do.

65. The people around me expect me to succeed at everything I do.
66. I do not have very high standards for those around me.  
Disagree  Agree
1 2 3 4 5 6 7

67. I demand nothing less than perfection of myself.  
Disagree  Agree
1 2 3 4 5 6 7

68. Others will like me even if I don't excel at everything.  
Disagree  Agree
1 2 3 4 5 6 7

69. I can't be bothered with people who won't strive to better themselves.  
Disagree  Agree
1 2 3 4 5 6 7

70. As I was growing up, my mother/father seldom gave me expectations and guidelines for my behavior.  
Disagree  Agree
1 2 3 4 5 6 7

71. It makes me uneasy to see an error in my work.  
Disagree  Agree
1 2 3 4 5 6 7

72. I do not expect a lot from my friends.  
Disagree  Agree
1 2 3 4 5 6 7

73. Success means that I must work even harder to please others.  
Disagree  Agree
1 2 3 4 5 6 7

74. If I ask someone to do something, I expect it to be done flawlessly.  
Disagree  Agree
1 2 3 4 5 6 7

75. I cannot stand to see people close to me make mistakes.  
Disagree  Agree
1 2 3 4 5 6 7

76. I am perfectionistic in setting my goals.  
Disagree  Agree
1 2 3 4 5 6 7

77. The people who matter to me should never let me down.  
Disagree  Agree
1 2 3 4 5 6 7

78. Others think I am okay, even when I do not succeed.  
Disagree  Agree
1 2 3 4 5 6 7

79. I feel that people are too demanding of me.  
Disagree  Agree
1 2 3 4 5 6 7

80. I must work to my full potential at all times.  
Disagree  Agree
1 2 3 4 5 6 7

81. Although they may not show it, other people get very upset with me when I slip up.  
Disagree  Agree
1 2 3 4 5 6 7

82. I do not have to be the best at whatever I am doing.  
Disagree  Agree
1 2 3 4 5 6 7

83. My family expects me to be perfect.  
Disagree  Agree
1 2 3 4 5 6 7

84. I do not have very high goals for myself.  
Disagree  Agree
1 2 3 4 5 6 7

85. My parents rarely expected me to excel in all aspects of my life.  
Disagree  Agree
1 2 3 4 5 6 7

86. I respect people who are average.  
Disagree  Agree
1 2 3 4 5 6 7
<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>Disagree</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>87</td>
<td>People expect nothing less than perfection from me.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>88</td>
<td>I set very high standards for myself.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>89</td>
<td>People expect more from me than I am capable of giving.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>I must always be successful at school or work.</td>
<td>1 2 3 4 5 6 7</td>
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<tr>
<td>91</td>
<td>It does not matter to me when a close friend does not try their hardest.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>92</td>
<td>People around me think I am still competent even if I make a mistake.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>93</td>
<td>I seldom expect others to excel at whatever they do.</td>
<td>1 2 3 4 5 6 7</td>
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<tr>
<td>94</td>
<td>I can always manage to solve difficult problems if I try hard enough.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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<tr>
<td>95</td>
<td>If someone opposes me, I can find means and ways to get what I want.</td>
<td>1 2 3 4 5 6 7</td>
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<tr>
<td>96</td>
<td>It is easy for me to stick to my aims and accomplish my goals.</td>
<td>1 2 3 4 5 6 7</td>
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<tr>
<td>97</td>
<td>I am confident that I could deal efficiently with unexpected events.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>98</td>
<td>Thanks to my resourcefulness, I know how to handle unforeseen situations.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>99</td>
<td>I can solve most problems if I invest the necessary effort.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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<tr>
<td>100</td>
<td>I can remain calm when facing difficulties because I can rely on my coping abilities.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>When I am confronted with a problem, I can usually find several solutions.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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<tr>
<td>102</td>
<td>If I am in a bind, I can usually think of something to do.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>No matter of what comes my way, I am usually able to handle it.</td>
<td>1 2 3 4 5 6 7</td>
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</tbody>
</table>

Thank you for your time and contribution to our study. Your participation is greatly appreciated. If you are interested in obtaining any of the findings of this study, a copy will be available in the department of Sociology and Anthropology by August 1997. Thank you again.