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ABSTRACT

THE INFLUENCE OF SOCIAL SUPPORT AND BASIC  
PSYCHOLOGICAL NEEDS SATISFACTION ON  
STUDENT ACADEMIC MOTIVATION  
AT A CAMEROONIAN UNIVERSITY:  
STRUCTURAL EQUATION  
MODELING

by

Samuel Adamou

Chair: Larry D. Burton

## ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

Andrews University

School of Education

Title: THE INFLUENCE OF SOCIAL SUPPORT AND BASIC PSYCHOLOGICAL NEEDS SATISFACTION ON STUDENT ACADEMIC MOTIVATION AT A CAMEROONIAN UNIVERSITY: STRUCTURAL EQUATION MODELING

Name of researcher: Samuel Adamou

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Date completed: November 2018

### Problem

The growing number of students at the university level in Cameroon created maladaptive behaviors including lack of behavior adaptation, interests, respect, happiness, self-esteem, which led to strikes, vandalism, academic failure and resulting in school dropout (Nwaimah, 2008). The Cameroonian government proposed a number of reforms to solve these issues. One of the major proposed reforms consisted of implementing the Bologna Model in higher education through borrowing and transferring of policies, ideas, and practices from a European higher education area (Eta, 2015; Mngo, 2011). Yet despite the surface progress, the question of how to enhance student learning and improve instruction always remains unsolved. While enrollment numbers are increasing, gaps persist in degree attainment (Eta et al., 2017). This is evidence that the

phenomenon of academic motivation is one of the main problems of student success, especially among college students who have negative feelings separation from their parents during college. As a result, these students experience low academic performance and achievement leading to school dropout. Kelly (1988) pointed out that even if best developmental and remedial instructions could improve the learning skills of an academically weak and unprepared student, they could not do so for unmotivated and unprepared students.

### Purpose

The purpose of this study was to investigate the influence of social support and basic psychological needs on student academic motivation of first-year, second-year, and third-year students in the Faculty of Arts, Letters, and Social Sciences (FALSS) at University of Ngaoundéré in Cameroon.

### Research Design

The study utilized a quantitative, non-experimental, correlational, cross-sectional, survey design. Structural equation modeling was the statistical technique used to analyze the data. The sample included first- year, second-year, and third-year students from the Departments of History, Geography, and Sociology/Anthropology in the FALSS at University of Ngaoundéré. There were 388 students who completed the questionnaire; however, five missing cases had to be deleted which resulted in 383 study participants. The data was analyzed using SPSS AMOS version 25 to estimate the parameters and to determine the fit of the structural model with the observed data. A statistical significance level of .05 was established for the study.

## Results

Results from the analysis of the hypothesized model showed that the initial model did not fit the observed data. However, an adjusted model provided an adequate fit to the data ( $\chi^2 = 128,094$ ,  $DF = 55$ ,  $GFI = .95$ ,  $CFI = .97$ ,  $NFI = .95$ , and the  $SRMR = .05$ ). Following the re-specification of the model, there were relatively strong path coefficients for the structural model. There were two predictors with direct effect on student academic motivation: peer support and basic psychological needs. Peer support was the strongest direct predictor for the outcome variable of student academic motivation with a statistically significant coefficient of .67. The direct path from the predictor variable of social support to the mediating variable of basic psychological needs had a strong, positive, statistically significant coefficient of .70. This indicated that the mediating variable of basic psychological needs was a potential contributor to student academic motivation. The direct path coefficient from the mediating variable of basic psychological needs to the outcome variable of student academic motivation was weak with a coefficient of .18. In spite of this weak direct path coefficient from basic psychological needs to student academic motivation, the total indirect effect from the exogenous variable of social support to the outcome variable of student academic motivation was a strong, positive, and statistically significant coefficient of .65.

The squared multiple correlation coefficients estimate the magnitude of the results, also called effect size or practical significance, of the statistical findings. The interpretation of the squared multiple correlation coefficients from the structural model indicated that the indirect effects of the exogenous variable of social support accounted for approximately 49% of the variance in the mediating variable of basic psychological

needs. The primary finding from this study was the strong direct effect of the predictor variable of peer support on the outcome variable of student academic motivation. This direct effect accounted for approximately 45% of the variance in student academic motivation.

### Conclusions

The initial theoretical model, based on a comprehensive literature review and self-determination theory, did not predict a direct effect of peer support on student academic motivation. Thus, the findings did not support the hypothesized pattern of relationships depicted on the initial model. As previous studies with this instrument had been conducted in “Western,” Anglophone cultures, it should not be surprising to learn that self-determination theory is not a good fit for an African, Francophone culture. The findings of this study suggest the need for Cameroonian university teachers and administrators to promote teaching and learning practices that rely on relationship building and peer interaction. Also, this study points to the necessity of continuing research to look for additional factors that may contribute to student motivation in Francophone Africa. This will help create a robust, culturally sensitive theory of student academic motivation for the region.

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School of Education

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STUDENT ACADEMIC MOTIVATION  
AT A CAMEROONIAN UNIVERSITY:  
STRUCTURAL EQUATION  
MODELING

A Dissertation

Presented in Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Philosophy

by

Samuel Adamou

November 2018



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## LIST OF ABBREVIATIONS

BNT	Basic Needs Theory
BP	Bachelor's program
BPN	Basic psychological needs
BPNS	Basic psychological needs satisfaction
CFA	Communauté Financière Africaine
CFI	Comparative Fit Index
CET	Cognitive Evaluation Theory
DET	Developmental-Ecological Theory
FALSS	Faculty of Arts, Letters, and Social Sciences
GCE	General Certificate Examinations
GFI	Goodness of Fit Index
IMF	International Monetary Fund
NFI	Normed Fit Index
OIT	Organismic Integration Theory
PCS	Peer Competence Support
PS	Peer support
PSRS	Peer Social Relatedness Support
SAM	Student academic motivation
SAPs	Structural Adjustment Programs
SEM	Structural equation modeling



SDT	Self-determination theory
SPSS	Statistical Package for the Social Sciences
SRMR	Standardized Root Mean Residual
SS	Social support
TS	Teacher support
TSRS	Teacher Social Relatedness Support
WB	World Bank

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## CHAPTER 1

### INTRODUCTION

#### **General Introduction and Background**

Increasing ways to provide students with the best opportunity to learn meaningfully and successfully has always been the principal focus of the worldwide educational community. An increasingly growing research base points to many questions on how various characteristics of students, teachers, social and physical environments influence student learning (Berliner, 2006). Because of the influences of various factors that determine student learning, teaching profession has always been considered as “unforgivingly complex” and requires in-depth knowledge in a number of areas (Cochran-Smith, 2003). In so doing, the National Board for Professional Teaching Standards (n.d.) mentioned five main goals of learning to consider in order to meet the requirement needed to help support learners in their academic trajectory: (1) teachers’ commitment to their students and learning, (2) teachers’ knowledge of the subjects they teach and their teaching methods and strategies, (3) teachers’ monitoring and managing aspects of student learning, (4) systematic thinking of teacher’s practice and of teacher’s experience, and (5) teacher’s relationships with learning communities. Since the primary target of education is to improve student learning, all these five goals can be a starting point of educational conversation to student learning.

Also, research literature contains many studies (Berliner & Casanova, 1993; Marzano, Norford, Paynter, Pickering, & Gaddy, 2001; Marzano, Pickering, & Pollock, 2005) that explored how some factors such as classroom conditions such as using more advanced students to tutor less advanced students, giving positive reinforcement to students whose performance meets or exceeds the classroom's objective, and giving correct feedback to students who don't meet course's objectives can improve student learning. The American federal government and other policymaking organizations also have found the importance of applying research on learning and teaching issues. For example the Institute of Education Sciences (n.d.), part of the U.S. Department of Education maintained a What Works Clearinghouse, and that website was designed to provide educators with information about how well instructional programs they might be interested are supported by research.

In similar vein, to promote student learning, the American Psychology Association fostered classroom learning by creating the Applications of Psychological Science to Teaching and Learning Force and the Psychology in the School and Education to help K-12 teachers used research- based practices (American Psychological Association, n.d.). Ultimately, improving student learning is the main objective of teaching practices. However, these practices of teaching and learning should be holistic. This means that teaching should not be only limited to improving instructional strategies, but should also take into consideration, for example, motivational strategies to foster student learning.

## **The Importance of Academic Motivation for Student Learning: An Overview of Learning Theories**

Because student motivation is one of the important aspects of the learning process and schooling, many learning theories have been developed to understand and find ways to engage students in learning. Having said that, it is important to trace the overview and expansion of these learning theories in order to highlight the importance of student academic motivation (SAM) in this study.

In the beginning of the twenty-century, behavioral learning theories dominated the psychology of learning. John Watson (1913) was the influential psychologist who redirected psychology of learning from its internal, mental and emotional orientations to what could directly be observed and objectively measured. Behavioral learning theories culminated in the work of Skinner (1953) who put together a theory he called operant conditioning. Through the notion of operant conditioning, Skinner showed that human free will is an illusion because of the influence of external motivation on human choices.

Further in his explanation of the notion of operant conditioning the author used the term reinforcement that is a strategy for strengthening a target behavior by presenting a positive reinforce or a negative reinforce after the behavior occurs. This gave the opportunity to many schools to use programs based on operant conditioning principles through some software packages and combine tutorial programs. Research findings suggest that when these programs are properly designed and used they can effectively reinforce knowledge and skills depending on the nature of the subjects, the quality time, and the circumstances that determine the response of the learner (Cassady & Smith, 2005). But the downside of it is that the application of operant conditioning can result to

human free will alienation. Therefore, the behavioral psychology is limited on the role of external factors in learning that can be of considerable value to teachers.

After freeing itself from the behaviorist views that were dominant in the 1950s, cognitive psychology emerged in the 1960s and also contributed to student learning. Cognitive psychologists study how the mind works and influences behavior. Contrary to behavioral psychologists, cognitive psychologists are convinced that it is possible to study nonobservable behavior such as thought sequences and processes in a scientific manner. The cognitive psychologists are interested in information-processing theory, which seeks to understand how people acquire new information, how they store information and recall it from memory, and how what they already know guides and determines what and how they learn (Linell, 2007). Many information-processing studies showed interaction between the learner and the environment.

A number of cognitive psychologists studied language-acquisition, altered states of mind and consciousness, visual perception, auditory perception, short-term memory, long-term memory, storage, retrieval, perceptions of thought and much more (e.g., Rogers, Pak, & Fish, 2007; Schunk, 2004). In their studies, these authors mentioned the influence of the cognitive processes (perception, recognition, imagining, remembering, thinking, judging, reasoning, problem solving, conceptualizing, and planning to name just a few) on the learning process. For them, information-processing theory supports students in learning to be organized, and to solve problems, to better comprehend studies and be self-regulated.

Different from information-processing theory that explains how the mind works and influence the behavior, social cognitive theory takes into consideration the social

context of learning. It explains how learning occurs in educational settings involving three main factors: behavioral factors, personal factors, and the social settings. Bandura (1986, 1997, 2001, 2002) is one of the proponents of this theory, explaining, through a term of triadic reciprocal causation, how learning results from interactions among personal characteristics (such as the cognitive processes, self-perceptions, and emotional states), behavioral patterns, and the social environment (such as interactions with others). The social cognitive theory assumes that students have control over their environment, their beliefs and behaviors (Martin, 2004). For example, students have the ability to control their actions through self-control in the absence of external reinforcement. Through self-regulation, the students can personally set their own performance standards, evaluate their performance and reinforce themselves when needed (Zimmerman, 1990, 2000). Through self-efficacy, which is an ability of successfully performing a task students are more likely to use self-regulating skills as concentrating on the task, creating strategies, using appropriate tactics, managing time effectively and monitoring their own performance to improve their learning effort.

Social cognitive theory is one of the learning theories that help educators improve educational outcomes by explaining how the interaction of students' personal characteristics, social and physical environment, and behavioral patterns influence and improve learning effort. For example, research findings suggest that more students are likely to use effective learning skills when they get older (Greene & Azevedo, 2009; Schneider, Knopf, & Stefanek, 2002). In addition, researchers estimate students will need at least several years of systematic strategy instruction to become highly proficient regulated self-learners (Harris, Alexander, & Graham, 2008).



Constructivist learning theories are one of the main theories of learning contributing to improve instruction and learning by increasing learning effort. Scholars such as John Dewey, Jean Piaget, Lev Vygotsky, and Jerome Bruner had promoted these theories that led to three main orientation of constructivism: Cognitive constructivism, social constructivism, and critical constructivism. Because students need to find, apply, evaluate, and create what they need to know in order to accomplish their goals, constructivist learning theories are ones of the best theories that help students to produce ability to face life's uncertainties and changes through the amount of effort learners put on their studies. Teachers should confront students with problems and help them find solutions independently or by engaging in a group discussion for a meaningful discovery (Bruner, 1983; Mayer, 2008). Four main elements explain the constructivist frame: meaningful learning through active creation of knowledge, social interactions and negotiations of understanding with others, self-regulation, and authentic problems through realistic context and multiple perspectives that contribute to the construction and transfer (Loyens, Rikers, & Schmidt, 2007). Research findings showed that classroom learning is likely to be meaningful when it is embedded in a realistic context (Duffy & Cunningham, 1996), leading learners to expend a certain amount of effort to achieve a particular goal under a particular set of circumstances. So, constructivist views of learning provide the opportunity to learning, which occurs when learners use existing knowledge patterns and the perspectives of others to interpret the world around them.

Using this overview of learning theories, it appears that academic motivation is mostly made up of learning theories in the field of educational and social psychology. The role of psychology in learning theories such as behavioral learning theory,

information-processing theory, social cognitive theory, and constructivist learning theory highlights the behavioral factor, psycho-social factor, and psycho-environmental factor that determine the success of the learner.

### **Statement of the Problem**

With the ever-increasing number of students at the college and university level educators have a big concern about how to motivate these students who are even unprepared for the demand of college life. Students exhibit maladaptive behaviors such as a lack of interests, respect, and happiness mostly leading to anger, vandalism, strikes, academic failure, and a higher rate of school dropout (Konings, 2009). In Cameroon, to address low completion rates and dropout of students, the Biya administration has spurred a national movement focused on increasing the number of individuals seeking and completing postsecondary credentials. Cameroonian educational policymakers have united around this agenda, leading to a number of initiatives at the national and regional levels to resolve the overcrowded problem of the public universities in order to increase college completion by allowing the creation of many public and private universities and institutes of higher education (Nwaimah, 2008).

Yet despite the surface progress, the question of how to enhance student learning and improve instruction always remains unsolved (Mvesso, 2005). For example, a limited number of students enrolled in three-year institutions graduate within five years. The situation is even worse because most of those who graduate do not have a chance for employment in the marketplace. This situation has brought to an elite system in education where those who get employed are those who are either in the ruling party or associated with those in power. While enrollment numbers are increasing, gaps persist in degree

attainment. A very limited number of students seeking a bachelor's degree graduate within six years. In addition, there is also the issue of harmonization of the educational sub-systems in Cameroon in a multicultural context where English and French are two official languages (Ngalim, 2014).

Instead of solving these issues by adapting the Cameroonian school curriculum to the local knowledge and practices (Tangwa, 2011; Tchombe, 1999), the leaders of Cameroonian higher education were interested in solving the issue by adopting the standard approach, which is to address the problem by implementing the school programs borrowed from the European educational system. This brought them up to lean on the project of the implementation of the Bologna Model of educational reforms, which is the borrowing and transferring of policies, ideas and practices from the Bologna Process- the intention of creating a European higher education area (Eta, Kallo, & Rinne, 2017; Mngo, 2011).

In general, many educators at university level addressed learning problem and academic failure through the lack of academic skills and school unpreparedness. In so doing, they provide the solution through to the lens of developmental and remedial instructions (Astin, 1984; Boylan, Bonham, Claxton, & Bliss, 1992). However, developmental education programs do not tackle the whole problem. Even though research demonstrated that best developmental and remedial instructions could improve the learning skills of an academically weak and unprepared student, they could not do so for unmotivated and unprepared students. Kelly (1988) stated that when students are both underprepared and unmotivated, the greater problem of the two is motivation. While those who are unprepared and weak can improve their academic skills when there are

motivated, those who are capable do not have the chance to succeed when they are not motivated. The problem becomes even more complex when instructors do not have time and capacity to address difficult motivational issues and find remedies to them in the classroom. Consequently, these unmotivated students fall to advisors, tutors, counselors, and others who do not know how to combine learning and instructional methods with motivational strategies.

The seminal studies in motivation focused on behavioral learning theories that culminated in the work of Skinner (1953). The behavioral studies were not addressing the whole problem of student learning. This was due to the fact the investigators did not include social and cognitive factors to explain how human mind works. Therefore, studies of motivation in education moved away from its behavioral theories from reinforcement contingencies to the more current social-cognitive perspective, which is focused on the learners' constructive interpretations of events and the role that their beliefs, cognitions, affects, and values play in achievement (Pintrich & Schunk, 1996).

Many research have been done in academic motivation using the social-cognitive framework (e.g., Kelly, 1988; Reeve, 2002; Vallerand, Fortier, & Guay, 1997; Vallerand et al., 1993). The influence of basic psychological needs (BPN) on postsecondary student motivation, associated with teacher and peer support (PS) that could enhance educational outcomes remains unclear, as investigators have focused predominantly on middle and high school student populations (Tracie, Adena, Carly, & Michael, 2013).

There is empirical evidence that personality traits such openness and consciousness affect the academic motivation and performance (e.g., Chamorro-Premuzic & Furnham, 2003, 2008; Komarraju & Karau, 2005). The research results indicated that

conscientiousness and openness to experience can predict academic performance, suggesting that students who score high in conscientiousness and openness will be more successful at university. Even though these studies highlight some factors that are associated with academic motivation, they were not holistic and did not include the variables of the current study. Therefore, there is a gap in this literature that needs to be addressed.

Williams and Deci (1996) have related the motivational processes defined in self-determination theory (SDT) to educationally relevant outcomes. Self-determination theory (Deci & Ryan, 1980, 1985, 2000, 2002, 2008; Deci, Vallerand, Pelletier, & Ryan, 1991) provides a framework within which researchers can examine needs, goals, support, motivation, and performance. Lack of autonomy, competence, and relatedness leads largely to low academic motivation, poor performance, and unsuccessful achievement, which can result to school dropout. Following the patterns of SDT, this study will show the influence of the BPN on these two types of motivation (intrinsic and extrinsic motivation). Since these authors used only an experimental design to address the motivation issue, there is a gap in their studies. The current study will use a non-experimental study to address the gap in SDT.

Previous studies have been investigated the influence of BPN on types of academic motivation to address students' lack of motivation. Result findings concerning types of extrinsic motivation, showed that more autonomous extrinsic motivation and intrinsic motivation are associated with greater engagement (Connell & Wellborn, 1990), better performance (Miserandino, 1996), less dropping out (Vallerand & Bissonnette, 1992), higher quality learning (Grolnick & Ryan, 1987), and greater psychological well-

being (Sheldon & Kasser, 1995), among other outcomes. This means that autonomous extrinsic motivation play the same role with intrinsic motivation because both and increase student engagement, resulting in better performance and learning. The gap in this literature is that these studies limited the variables of their studies to teacher support (TS) only.

Despite student success ties to personal connection satisfaction (e.g., with autonomy satisfaction, competence satisfaction, and relatedness satisfaction), few studies have empirically demonstrated the ways perceived support from teachers and peers contribute to college motivation in the classroom (e.g., Faye & Sharpe, 2008; Frymier & Houser, 2000; Legault, Green-Demers, & Pelletier, 2006; Levesque, Stanek, Zuehlke, & Ryan, 2004). Also, there are a few studies that investigated the influence of TS and PS on academic motivation through the mediation of BPN (Orsini & Binnie, 2016). So, there is a gap in the literature. This gap will be addressed in the current student by investigating the influence of the combined effect of TS and PS on academic motivation through the mediation of BPN.

Research by Williams and Deci (1996) investigated the self-regulated learning of medical students that conveyed a psychosocial orientation toward patient care. This study revealed that being more autonomous in one's learning is associated with adopting the educationally relevant values that are extant in the learning environment and then behaving in ways that are consistent with those values. This orientation emphasizes that health is a function not only of biotechnical (i.e., biological and pharmacological) factors, but also of psychological and social factors and that physicians should be attuned to these factors to provide high-quality patient care. This study used an experimental and

longitudinal design to measure the impact of psychosocial and developmental variables on motivational processes. There is a need that the current study will address. By using a non-experimental and cross-sectional design the variables of the current study will indicate the influence of psychosocial variables on academic motivation.

A laboratory experiment by Deci, Eghrari, Patrick, and Leone (1994) indicates that autonomy support versus control also affects internalization and integration. Autonomy support not only enhances intrinsic motivation but also promotes internalization of extrinsic structures (Williams & Deci 1996). Research work suggested that to be intrinsically motivating, a target activity must provide an optimal challenge (Csikszentmihalyi, 1975; Deci, 1975). The literature suggests that optimally challenging activities attracted students by providing them the opportunity to experience a sense of competence (Deci, 1975). The gap in this literature is related to the inclusion of the competence variable only, which is limited in the previous studies.

Consequently, there is a crucial need to address a plan for improving academic motivation using a structural equation model of the influence of the BPN and social support (SS) on academic motivation. This is the contribution of the current study, which seeks to enhance student-peer and student-teacher relationships and BPN in order to foster SAM for a high quality learning and teaching.

### **Purpose of the Study**

The purpose of the study was to test a theoretical model of the influence of BPN satisfaction (BPNS) and SS on SAM of the first-, second-, and third-year university students seeking a Bachelors' degree in the Departments of History, Geography, and

Sociology in the Faculty of Arts, Letters, and Social Sciences (FALSS) at the University of Ngaoundéré in Cameroon.

### **Research Question**

In this exploratory study, BPNS and SS influence the SAM of college students (first, second, and third-year university students). The research question sought to investigate whether the empirical data supported the theoretical model, and was stated as, “Is the theoretical covariance matrix equal to the observed covariance matrix?”

### **Hypothesis**

The research hypothesis states “the theoretical covariance matrix represented in the structural model and the empirical covariance matrix are equal.” In simple terms, this means that the structural model would be a good fit with the observed data. Using the conceptualized model depicted in Figure 1, this study hypothesized (1) the direct effect of the predicting variable of SS on the mediating variable of BPN, (2) the direct effect of the mediating variable of BPN on the outcome variable SAM, and (3) the indirect effect of the predicting variable SS on the outcome variable of SAM.

Structural equation modeling (SEM) was the statistical analysis technique used to test the direction and magnitude of relationships among constructs in the hypothesized model of study.

### **Significance of the Study**

The present study was a starting point to expand knowledge about how BPN and SS possibly influence academic motivation in Cameroonian higher education. The



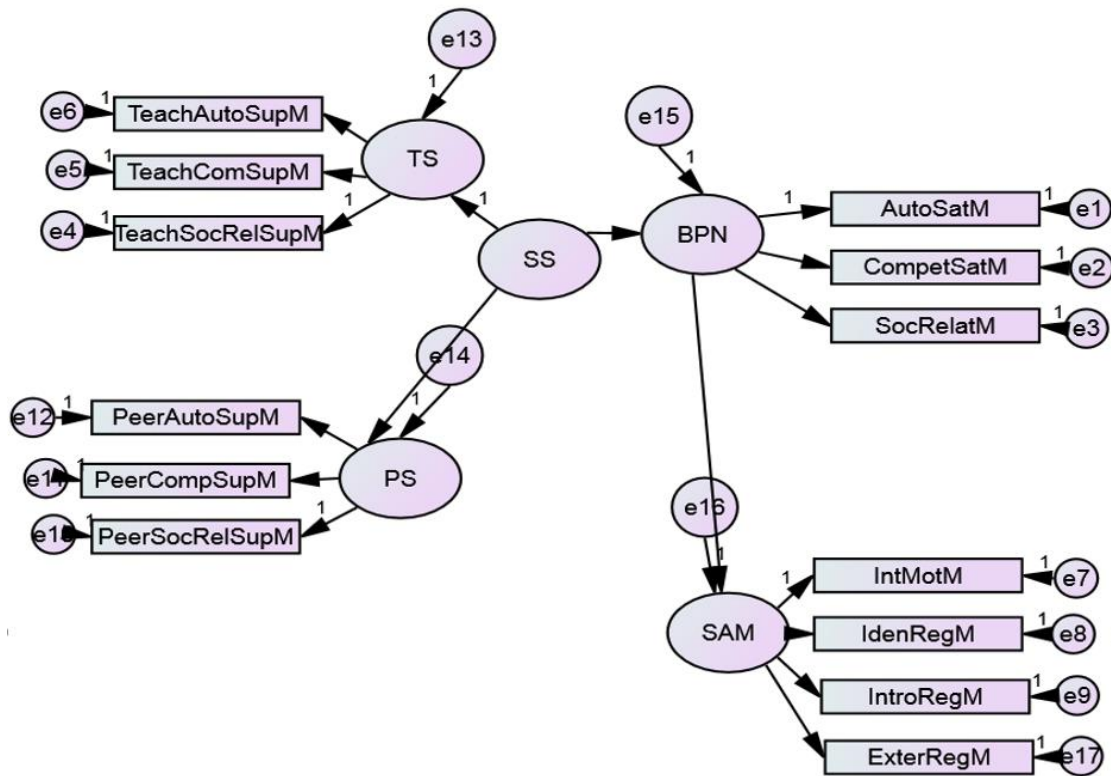


Figure 1. Hypothesized Theoretical Model of SAM

findings of this study could contribute to bring attention of Cameroonian scholars, researchers, educators, and other educational professionals to raise awareness on how it is beneficial to lean on personal and contextual factors that could enhance SAM. The current study findings could equip instructors with motivational strategies that could improve instruction and student learning. At the same time, students will have the opportunity to get involved in a deep active learning through vigorous student-teacher and student-peer relationships based on confidence, mutual respect, and efficacy (Perry, Turner, & Meyer, 2006).

## **Theoretical Framework of the Study**

Self-determination theory is the essential groundwork on which the present study is built (Deci & Ryan, 1985, 2000, 2002, 2008; Deci et al., 1991; Ryan & Deci, 2000a). Self-Determination Theory is a broad theoretical framework that addresses the personal and contextual factors that elicit differing forms of motivation in various settings (Deci & Ryan, 1985, 1991b; Ryan & Deci, 2002). It explains that learning success involves not only instructional strategies and academic skills, but also motivational strategies in the classroom dynamics. In its essence, SDT is a macro theory of human motivation, personality, development and well-being (Ryan & Deci, 2000a). Self-Determination Theory is made up of different theoretical contributions of scholars. White's (1959) research proposed that one's desire for control over his or her environment drives behavior. This idea served as a basis for many motivational theories, including Bandura's self-efficacy theory (1982), Seligman's learned helplessness theory (1975), deCharms' (1968) study of perceptions of control, and Deci & Ryan's SDT (1985). Self-Determination Theory highlights the self-regulation and volitional behavior regardless of culture or stage of human development. The theory is composed of five different sub-theories that describe the genesis of intrinsic motivation, extrinsic motivation, and amotivation: (1) the Cognitive Evaluation Theory (CET; Deci & Ryan, 1985), (2) the Organismic Integration Theory (OIT; Deci & Ryan, 1991; Ryan & Deci, 2002), (3) the Basic Needs Theory (BNT; Deci & Ryan, 1985; Ryan & Deci, 2002), (4) the Causality Orientation Theory (Deci & Ryan, 1985), (5) and the Goal Content Theory (Vansteenkiste, Lens, & Deci, 2006). This study was focused on the first three sub-theories of SDT.

Basic Psychological Needs Theory highlights how environmental factors can affect the integration and organization of the self through the working of three BPN: autonomy, competence, and relatedness (Deci & Ryan, 2000; Vallerand, 2000). Basic psychological needs have been the focus of research in numerous domains, such as education (Vansteenkiste et al., 2006), health care and sports and exercise (Edmunds, Ntoumanis, & Duda, 2006). These three psychological needs represent the nutrients that are necessary for effective, healthy functioning of a human being (Ryan, 1995). Autonomy refers to feelings of choice and action. Individuals need to feel that they may choose and implement their own actions. Competence refers to feelings of effectiveness. Individuals need to feel that they have some control over outcomes and that they have the ability to exert some impact on their environment. Relatedness refers to the experience of healthy social connection and satisfying social relationships. The three BPN are an integrated system that allocates a permanent feedback about the quality and function of person-environment interactions. Ultimately, environments that enhance the satisfaction of autonomy, competence, and relatedness needs produce self-regulated behaviors and intrinsic motivation, whereas environments that impede these needs result in non-self-determined behaviors or extrinsic motivation (Faye & Sharpe, 2008).

Cognitive Evaluation Theory is a sub-theory of SDT that is designated to explain the influences social and interpersonal interactions either enhance or hinder intrinsic motivation (Deci, 1975). Cognitive Evaluation Theory highlights the role of competence to intrinsic motivation, and states that events that are perceived to detract from social contexts will lessen intrinsic motivation. Cognitive Evaluation Theory focused on three propositions to explain how consequences influence intrinsic motivation.

1. Events that foster greater perceived competence would enhance intrinsic motivation, whereas those that diminish perceived competence would decrease intrinsic motivation (Deci & Ryan, 1985).
2. Events correlated to the initiation and regulation of behavior have three potential aspects, each with a significant function: (a) the informational aspect of events facilitates an internal perceived locus of causality (a person's perception of the cause of the success is self) and perceived competence, thus positively influencing intrinsic motivation, (b) the controlling aspect of events facilitates an external perceived locus of causality (a person's perception of the cause of success or failure is the alter ego), thus negatively influencing intrinsic motivation and increasing extrinsic compliance or defiance, and (c) the amotivating aspect facilitates perceived incompetence, and undermining intrinsic motivation while promoting disinterest in the task (Deci & Ryan, 1985).  
The amotivating aspect of motivation will not be involved in this study because amotivation involves the total lack of motivation that leads to a zero degree of performance of academic activities by students. Since the study is aiming at factors that rely on performing activities that include at least a minimum level of motivation to perform them, this study will not include amotivation among the variables of study.
3. Personal events differ in their qualitative aspects and, like external events, can have different functional significances. Events deemed internally informational facilitate self-determined functioning and

maintain or enhance intrinsic motivation. Events deemed internally controlling events are experienced as pressure toward specific outcomes and undermine intrinsic motivation. Internally amotivating events make incompetence significant and also undermine intrinsic motivation (Deci & Ryan, 1985).

Cognitive Evaluation Theory and intrinsic motivation is also linked to relatedness through the proposition that intrinsic motivation increases if associated with a sense of security and relatedness (Grolnick & Ryan, 1989).

Organismic Integration Theory is a sub-theory of SDT that deals with the explanation of extrinsic motivation. It describes four different ways extrinsically motivated behavior is regulated and the contexts in which they come about.

1. Externally regulated behavior: Is the least autonomous, it is performed because of external demand or possible reward. Such actions can be seen to have an externally perceived locus of causality (deCharms, 1968).
2. Introjected regulation of behavior: describes engaging on regulations to behavior but not fully accepting the regulations as your own. According to Deci and Ryan (1995), such behavior normally represents regulation by contingent self-esteem. In such introjected regulation people feel motivated to demonstrate ability to maintain self-worth or punishment. While this is internally driven, introjected behavior has an external perceived locus of causality or not coming from one's self. Since the causality of the behavior is perceived as external, the behavior is

considered non-self-determined

3. Regulation through identification: Is a more autonomously driven form of extrinsic motivation. It involves consciously valuing a goal or regulation so that the involved action is accepted as personally important.
4. Integrated Regulation: Is the most autonomous kind of extrinsic motivation. Occurring when regulations are fully assimilated with self so they are included in a person's self-evaluations and beliefs on personal needs. Because of this, integrated motivations share qualities with intrinsic motivation but are still classified as extrinsic because the goals that are trying to be achieved are for reasons extrinsic to the self, rather than the inherent enjoyment or interest in the task.

The present study did not use integrated regulation because integrated regulations and identified regulations are almost similar. The only difference is in terms of degree of acceptance. While integrated regulations involve fully accepted regulations, identified regulations involve accepted regulations only.

Definitely, SDT designs a theoretical framework to investigate the influence of personal and contextual supportive needs on motivation of university students. Self-Determination Theory shades light to the importance of personal growth, social development and well-being of students. Furthermore, the correlations between these personal needs and the contextual factors highlight the importance of motivating students. The present study expands to the limited body of literature by exploring factors that enhance or undermine intrinsic motivation, identified regulation, introjected regulation,

and external regulation using the influence of teachers and peers in the process of supporting competence, autonomy, and relatedness of university students in the classroom. This study aims to investigate how TS and PS of BPN affects students' academic motivation.

### **Delimitations of the Study**

Instead of using many other personality traits that contributed to explain the role that played various basic needs on intrinsic motivation and academic achievement outside the classroom, this study focused on the influence of students' needs satisfaction (competence, autonomy, relatedness) and SS (TS and PS) on academic motivation (intrinsic and motivations) in the classroom. Additionally, the study relied on self-report data, which carries with it the threat of participants selecting socially acceptable or "expected" responses. I attempted to minimize this threat through cross-checking of information via multiple items measuring a single variable.

### **Definition of Terms**

*Academic Motivation.* Academic motivation refers to inherent enjoyment or interest in academic task and levels through which a student interacts with his or her environment in order to regulate his or her behavior toward learning (Deci & Ryan, 1985; Ryan & Connell, 1989; Ryan, Connell, & Grolnick, 1992).

*Autonomy.* Autonomy refers to being the perceived origin or source of one's own behavior (Deci & Ryan, 2000).

*Basic Psychological Needs.* Basic psychological needs refer to the three innate and universal basic needs of autonomy, competence, and relatedness that when satisfied they are associated with greater student motivation (Deci & Ryan, 1985).

*Competence.* Competence refers to feeling effective in one's ongoing interactions with the social environment and experiencing opportunities to learn and express one's capacities (Deci & Ryan, 2000).

*Controlled Regulation.* Controlled regulation is the regulation or behavior that occurs to gain external rewards or to avoid negative consequences.

*Organismic Integration Theory.* Organismic Integration Theory concerns internalization and integration of values and regulations to the self. Organismic Integration Theory explains the process of internalization (Deci & Ryan, 2002).

*Relatedness.* Relatedness refers to feeling connected to others, caring for and being cared for by those others and having a sense of belongingness both with other individuals and within a community (Deci & Ryan, 2002).

*Social Support.* Social support refers to support that students have from teachers and peers who may help them do well in school (Lee, Smith, Perry, & Smylie, 1999).

## **Organization of the Study**

Chapter 1 provides an introduction into the background of the problem, the importance of academic motivation for student learning, the statement of the problem, the purpose of the study, the research question, the research hypothesis, the significance of the study, the study's theoretical framework, delimitations of the study, and a definition of key terms.



Chapter 2 presents the review of the literature relevant to this study. It presents literature specific to the historical and contemporary educational situation in Cameroon. It also presents an extensive review of the literature relative to the components of the theoretical framework undergirding the study.

Chapter 3 focuses on the research methodology components that guided the study from the data collection to the data analysis. Sections include the presentation of the research design, the description of the population and sample, the research hypothesis, the definition of the variables, and the instrumentation. Chapter 4 provides the description of the sample, the statistics of the variables, the presentation of the variables of correlation, the scales validation, the hypothesis testing, the hypothesis testing of the re-specified model, the analysis of the model, the analysis of the re-specified model.

Chapter 5 presents the summary of the study. It includes a brief literature review, a restatement of the research problem and the purpose of the study. It then describes the research method briefly. It includes a summary of the research findings with a discussion of the results. The findings are interpreted in light of the literature in the field. Chapter 5 ends with conclusions from the study, limitations of the study, and recommendations for further research and implications for practice.

### **Summary**

Previous studies revealed that contextual factors and personal factors are key to influencing SAM. Self-determination theory provides the sub-theories that address the need satisfaction, the supportive needs and their influence on academic motivation of students. According to one of the SDT premises, need satisfaction is innate, universal, and essential for all people's healthy development, commitment to work, motivation, and

well-being (Deci & Ryan, 1985, 2000; Gagné et al., 2014). As such, SDT assumes that when the BPN of autonomy, competence, and relatedness are satisfied and supported individuals are more likely to initiate and sustain in a wide range of motivational behaviors that may influence their success (Rejeski, Ip, Katula, & White, 2006; Vallerand & Losier, 1999). Using the SDT framework, the present study the influence of the predicting variable of SS and mediating variable of BPN to seek to understand better the outcome variable of SAM. This may highlight the importance of using SDT in teaching and student learning.

## CHAPTER 2

### REVIEW OF THE LITERATURE

#### **Introduction**

##### Sources for Material Included in This Literature Review

To come up with this literature review the researcher did the searches at James White Library of Andrews University. He used computerized Catalogs and databases, including Dissertations and Theses at Andrews University, ERIC, ProQuest and Dissertations Global, ProQuest Psychology Journals, ProQuest PsycINFO, Sage journals, ProQuest ebrary e-books, and Social Services Abstracts.

The literature searches include key words such as BPN, academic motivation, autonomous regulation, controlled regulation, intrinsic motivation, extrinsic motivation, self-regulation, teachers' autonomous support, peers' autonomous support, students' perception of competence, students' perception of relatedness, students' perception of autonomy, BPNS, Cameroonian educational system, colonial education, neocolonial education, modern education, and post-colonial education. To limit a number of citations I performed a number of combinations using these key words to get a reasonable number of citations. When the researcher located the sources through library searches, he started reading and reviewing them. The researcher also used bibliographies of important articles and books to get additional studies important for my study.

## Purpose of the Literature Review

To establish a conceptual framework that examines how perceived SS (TS and PS) and BPNS (autonomy, competence, and relatedness) influence SAM (intrinsic and extrinsic motivation), the present study reviews studies that highlight the importance of these variables and connections between them. Previous studies found that when there is a stronger perceived social/contextual support in the classroom, students are more likely to have high motivation, which leads to improve their school performance (Deci & Ryan, 1985, 1991b, 2000). Basic psychological needs satisfaction and SS are deemed as educational strategies to help foster academic motivation. The core of the present study focuses on the importance of developing a self-determined strategy that builds up on emotional and cognitive aspects of students in order to respond positively to the daily challenges these students meet in the classroom. Therefore, the discussion looked at the research that highlight the relation between BPNS and SAM, the relation between BPN, TS and PS, and the relation between BPNS, TS and PS, and SAM. The analysis of the interaction between the exogenous variable of SS and the endogenous variables of BPN and SAM shed light on the importance of developing a self-determined strategy to improve instruction and learning. This analysis was guided by SDT of Deci and Ryan (2002), which highlighted the association of personal and contextual factors that need to boost the SAM, which may improve teaching and learning. This literature review is crucial because only a few current studies have directly investigated the influence of BPN support on student motivation at the university level. However, before exploring the perceived needs support and its relationship with SAM, it is important to present the overview of the field of motivation and the context of the study.

This literature review is divided into ten sections. The first section is related to the historical overview of education in Cameroon. The second section deals with the historical development of the field of motivation. The third section explained the relationship between academic domains and academic motivation. The fourth section highlights student motivation grounded in the SDT. The fifth section presents the BPN grounded in SDT. The sixth is associated with the role of SS in education. The seventh section deals with the relation between intrinsic motivation and BPN. The eighth is involved in the relation between extrinsic motivation and BPN. The ninth section presents the influence of perceived SS of BPN on SAM. The tenth attempted to answer the following question: why academic motivation in Cameroon?

### **Historical Overview of Education in Cameroon**

Education in Cameroon is important because it gives learners the skills and knowledge they need to navigate the world. Quality education in Cameroon can improve peoples' lives by providing the need of the production system with human capital capable of supporting economic growth. Previous studies pointed out that academic motivation is a key determinant to academic performance and achievement (Green, Nelson, Martin, & Marsh, 2006; Linnenbrink & Pintrich, 2002). Therefore, the study of SAM and its factors can lay a foundation for a quality education that can support the production of human resources for a holistic growth in Cameroon.

The historical overview of this study is made of the following sections: Education in pre-colonial era in Cameroon, education in colonial era in Cameroon, independence in post-colonial era in Cameroon, neoliberalism and the Cameroonian education system, challenges and solutions in higher education in Cameroon.

### Education in Pre-Colonial Era in Cameroon

Before the influence of the French and British colonization, the Cameroonian educational system was based on African cultural systems. As many African countries which educational system was based on indigenous education, Cameroonian education during the pre-colonial era was grounded in norms, values and tradition handed down from generations past. Interwoven theories and practices, communalism in African social thoughts and practices, philosophical thoughts built on stories, anecdotes and proverbs are the main characteristics that define pre-colonial African education (Kano, 2006).

In indigenous education, Achebe (1959) highlighted the role distribution in African education when he claimed that it was the role of the father to bring up his sons in a manly manner while the woman taught her daughters what it meant to be a woman. There was always a male teacher in the village for the education of the men, supplementing from the role played by the father as well as a female teacher for the girls. Ultimately, Cameroonian education as part of African education was mostly promoting the preservation of the tribe's cultural heritage, the family, and the clan.

### Education in Colonial Era in Cameroon

Before its independence in 1960, on July 12, 1884, Cameroon was a German protectorate. In 1886, the European colonial powers divided Africa between them in Berlin and agreed to the new borders for the entire African continent without considering differences in culture and language for the inhabitants. When the World War I broke out in 1916, Britain and France forced Germany out of Cameroon. Therefore, Cameroon was officially shared between Britain and France. France occupied the largest area and Britain

kept the area bordering their colony in Nigeria. British Cameroon and Nigeria were then administered as one colony.

In 1945 after World War II, United Nations renewed the French and British mandates to the colonies in Cameroon. Before the Cameroonian independence of 1960, many political parties emerged in both the French and British parts of Cameroon. Some of them in the British part wanted to be united to the English-speaking Nigeria. A referendum was held and most of the English-speaking inhabitants voted to be united to the French speaking part of Cameroon (Konings, 2011).

However, colonialism introduced by Britain and France caused a discontinuity in the Cameroonian indigenous education. Prior to colonialism was the curiosity of some Portuguese explorers whose primary purpose at the time was to explore the world (Tambo, 2003). Then, colonialism began with the religious role that Britain, France played in converting the pagans through what they called “mission civilisatrice” or civilizing mission as Kano (2006) mentioned it. They organized military campaigns against the resistant Africans. They conquered the people and took control of them and their land (Bell, 1986).

This period of oppression departed from 1884 with the invasion of Cameroon by Germans to 1960 when Cameroon got its independence. Fanon (1967) defines colonialism as a situation of invasion where one territory takes control of another, either through force or by acquisition. Therefore, the colonizer endorses and enforces his own form of schooling within the colony he is colonizing, imparting his own philosophy, law, lifestyle, and culture on the conquered. The Cameroonian colonial situation looked like what Freire (2000) described when he said that the colonized or oppressed people are

victimized by alienation, lack of freedom, and unconsciousness caused to them by the colonizer.

Colonialism altered Cameroon's way of education. The conquerors introduced the Western logic and objectivity of education, meaning that the Western style of education was considered an investment on human capital associated with the increase in productivity through scientific methods. To fit the need of the colonizers, the colonized Cameroonians as many other Africans were educated using European languages, literature, history and geography. In general, Africans were made to recite European rhymes and tell stories of European heroes (the same people who savaged Africans in some cases) whom they were expected to emulate while African civilization and development was considered primitive and ineffective (Abdi, 2012).

#### Independence and Postcolonial Era in Cameroon

Between the 1950s to mid-1960s the majority of African countries were granted independence from colonial rule. French and Britain reluctantly granted independence to the Cameroons in 1960 (for French-speaking Cameroon) and 1961 (for English-speaking Cameroon). The two Cameroons were united, as one people, again under a two-state federal system as part of the agreement granting independence to the English-speaking part in 1961. In 1972, was born the United Republic of Cameroon. In 1982, Cameroon became the Republic of Cameroon.

Like the independence of many other African countries, the independence of Cameroon in 1960 was a farce because it generated post-colonialism to the end. Independence freed Cameroon symbolically from domination by the Europeans who were occupying mostly the leadership roles within the political, military, judicial,



economic, financial and other institutions of State. The colonizers did not want to give this independence to Cameroon because of the resources they were getting from it. Even though African elites seized the opportunity to play the leadership roles of their country, the colonizers were still behind the scene discovering new ways of keeping the Africans subordinate. They created a new form of domination and occupancy called neocolonialism in which the black political, economic, and financial elites have remained puppets for a system still anchored on the good, old time colonial roots.

Neocolonialism or post-colonialism is a new system of control that belonged to imperial powers that controlled the “independent nations.” Konings (2001) highlighted that neocolonialism or post-colonialism is primarily associated with paying allegiance and attention to the imperial process in neo-colonial societies, and with a development of the strategies to subvert the actual material and discursive effects of that process. To subvert African independent nations, the imperialists used many ways including economic means, political means, cultural means, and educational means.

Concerning the economic means, it had already been agreed before the 1884 Berlin Conference that the colonies would trade only with the super powers that ruled them and especially in raw materials, like cocoa, coffee, and cotton. They also controlled the African colonies through economic and monetary means. For example, in Cameroon, the currency in use is a lower quality French franc, known as the Communauté Financière Africaine (CFA) franc. Nkrumah (1965) unveiled this machiavelistic economic practice of foreign companies and governments when he said that the imperial powers were enriching themselves at the expense of the African people. During the long period of post-colonization in Cameroon in particular and in Africa in general, the colonialists took

charge of the running cost of the states, providing civil servants and assigning them in positions where they would dictate policy. They exerted monetary control over exchange rates through a banking system controlled by the imperial powers. Foreign capital was used for exploitation of the colony rather than for its growth. Nkrumah (1965) describes neocolonialism as the socio-economic and political control exercised by the colonialists who continued to control their former colonies economically, politically linguistically, and culturally.

Under the Ahidjo's administration rule of the United Republic of Cameroon in 1972, the country's economy was booming with a specific target of instituting domestic capital (Konings, 2011), which was obviously absent. Employment rates were high and social prosperity was growing. But, shortly all this came to an end. Though official decolonization had taken place, in reality the colonies were still being controlled by the former colonialists. A crucial area of control was the request that Cameroon (and other underdeveloped nations) maintain their role as primary producers in the world market and that they sell their produce only to the former colonialists. The purpose of this rule was to promote dependency, which kept the colonies underdeveloped and needy (Rodney, 1982). Cameroon experienced the negative effects of having the prices of its products determined by the buyers who at this time were strictly former colonizers, France and Britain.

The unprecedented drop in the export prices of its cash crops was a very grievous blow to this young Cameroonian economy. Unfortunately, this led Cameroon, like many other African countries, to accrue a high foreign debt since its imports always out priced its exports. This situation was made worse when Volcker, the Chairman of the United

States Federal Reserve instituted a draconian shift in United States monetary policy by increasing interest rates to about 20 percent by July 1981, which were almost zero before (Harvey, 2005). This brought many of the developing countries to be hungry for credit. The International Monetary Fund (IMF) and the World Bank (WB) were ready with huge sums of money available as loans on very complicated terms (Diang, 2013). The IMF and WB became centers for the propagation and enforcement of neoliberal theories: free market fundamentalism, privatization and a cut in welfare expenditures. Cameroon with the advice of Britain and France turned to the Bretton Woods institutions for help following the deteriorating economic situation (Diang, 2013). In 1987 it was forced to turn to the IMF and the WB for loans (Tchoaungui et al, 1995). That is where education in Cameroon followed unprecedented the official pattern of Western assimilation.

#### Modern Education and Role of Colonization in Postcolonial Cameroon

The first Cameroonian Head of State, Ahmadou Ahidjio promoted modern education at all levels. For example, he opened many state primary schools as well as secondary schools to promote education, making education more easily accessible when compared to his African peers. Ecole Normale Superiere was opened in 1961 for the formation of teachers followed by the first state university in 1962 (Tambo, 2003). Cameroonian students were subsidized to learn at the tertiary level until the late 1980s and were motivated to embrace the modern Western education system, handing down the tradition, culture, customs and other important values to the youth, preparing them to become responsible people in the community (Mbiti, 1989). Therefore, through the educational approach of absorption such promoted by modern education in Cameroon the

Western knowledge, skills, values and culture started supplanting the indigenous education.

The dominant characteristic of Western education can be explained by the fact that the roots of the modern education system are found in Prussian military system, where children were ripped away from their parents to be molded into submissive soldiers who would not question the status quo (Diang, 2013). So the capacity to form original ideas and think critically from those children was obliterated through the methodical destruction of imagination, desires, and goals. As Bacchus (2006) points out, the challenge of the ideological state device was to educate and indoctrinate the colonized to accept the inferior role both in status and the jobs they were allowed to fill. The colonized were brought to a certain level where they believed in the cultural and intellectual superiority of the colonizers and denigrated their own abilities and cultures. For example, for several years the students' scripts for the General Certificate Examinations (GCE) in Cameroon were graded in Britain by the British. It is only in recent years that the exams are set and student answers corrected in Cameroon by Cameroonians (Bacchus, 2006).

Since Cameroon was partitioned between the English and the French after World War I, it was exposed to the educational systems that were prevalent in both metropolises. It is important to recall again that the education systems of both nations were instituted in Cameroon purely for domination purposes (Bell, 1986; Rodney, 1982). Apart from the fact that an educational system was an easy way to assimilation and marginalization of the cultures of the colonized, it was also meant for easy communication with the indigenes and easy exploitation of resources.

At independence the French speaking part of Cameroon, commonly referred to as Francophone Cameroon, held on to its inheritance of the French system of education while the English speaking part of Cameroon, also known as Anglophone Cameroon, held on tightly to their heritage from the British (Tambo, 2003). Two out of ten regions, the North West and South West regions are mostly English-speaking citizens and are therefore referred to as Anglophones, practicing the English system of education. Rote learning and memorization known for its ability to prohibit creative thinking was the ordinary approach to teaching and learning (Kano, 2006). Unfortunately, such an obsolete method of teaching and learning has been perpetuated over the 50 years since independence. Even after the independence the influence of colonialism brought Cameroonians to love foreign things more than their own. As Sartre (2001) declared, colonialism denies human rights to people it has subjugated by violence, and whom it keeps in poverty and ignorance by force. It keeps them in a state of “sub-humanity.” Such is one of the major reasons for the underdevelopment in Cameroon and most of Africa. The French-speaking citizens dominate the rest of the eight regions and they practice the French system of education. Tchombe (1989) laments the fact that although education is a tool for development, Cameroon schools and Universities continue to respond more and more to colonialism rather than to a growth in context. This continuous response of schools to imperialism questions the very basis of educational structures to address national needs.

### Neoliberalism and Cameroonian Educational System

Neoliberalism or post-colonialism is a new face of colonialism. It influenced the Cameroonian educational system in many ways. First of all, the educational systems in

Cameroon followed the British and French systems of education. The Anglophone and Francophone educational systems are divided into primary (six years, compulsive), middle school (five years for the Anglophone system and four years for the Francophone system), secondary (high school, two years for the Anglophone system and three years for the Francophone system), and tertiary (University). There are two separate secondary schooling systems, depending on whether the French or British colonial models apply. In broad terms though, the secondary phase comprises a lower level (middle school) and an upper level (high school). The academic year officially runs from September to June, at which time, end-of-year-examinations are always written. The GCE, both Ordinary and Advanced levels, are the two qualifying examinations in the Anglophone part of Cameroon, while the Baccalauréat examination is used to the Francophone regions. Students who graduate from the Anglophone middle school program sit for the GCE Ordinary Level and those who graduate from the two-year high school program sit for the GCE Advanced Level. The GCE advanced level and the Baccalaureate are the two main entrance qualifications into institutions of higher learning. After secondary school, there is the possibility of undertaking vocational studies, courses aimed to unemployed people under the responsibility of the Ministry of employment.

Another influence of the colonial context on Africa in general and Cameroon in particular is marked by the marketist role of neoliberalism on education. Harvey (2005) defines neoliberalism as a theory of political economic practices that promote human well-being through individual entrepreneurial freedoms and skills within an institution characterized by strong private property rights, free markets, and free trade. Cooke (2003) stated that neoliberalism is a new face of colonialism. It is an economic

development plan not conceived indigenously but it came to Africa from outside and is implemented through the supervision of its agents, the IMF and the WB, codified as structural adjustment (Stiglitz, 2002). So, neoliberalism operates through privatization, and the role of the state consists only in creating and preserving the institutional conditions appropriate and favorable to such practices.

In promoting privatization of institutions, freedom, and free market, neoliberalism appears to be a form of recolonization because operating through Structural Adjustment Programs (SAPs), which are a big tool of recolonization in the hands of the WB and the IMF. Since education is a tool of change advocates of neoliberal ideas understand this and are paying particular attention to education, public opinion, and knowledge, producing institutions like schools and mass media (Saltman, 2006). Hence, the state no longer has the duty to subsidize education, health or infrastructure. This helped neoliberals use the great mechanism of privatization to bring education under their control. The consequence is that the school curriculum of the developing countries demands for the alignment of curriculum with the new global economy.

According to Compton and Weiner (2008) education has been made into a commodity and as such the entrepreneurs, who set up schools, determine what is taught and how it is taught in order to make profit. In such a neoliberal situation Giroux (2008) points out that corporate power takes over and instills a new kind of pedagogy with commodity effect of the production, dissemination, and circulation of ideas emerging from the educational force of the dominant culture. Therefore, education is commercialized and corporate intervention encouraged, in this way, allowing for the adoption of business models in the management of education.

This situation has brought about instrumentalism of education. Hence, the role of the teacher is compromised. Instead of being the architect in the teaching profession the teacher becomes a mere medium of business commercials in the form of developed curricula. In this perspective, the teacher is not a curriculum developer and has nothing to do with questioning the sources, purposes, and relevance of these ideological materials, but is expected to apply effective technical skills and strategies of knowledge delivery (Kano, 2006).

Economic and political forces have control of the world of education in many ways. One of such ways is designing and implementing education policies that are aimed at achieving global economic competitiveness and imposing privatization of education as the solution (Saltman, 2014). Moreover, this situation becomes worst when the WB stresses that only universal primary education is free, leaving tertiary education to those who cannot afford to pay for it. Diang (2013) pointed out that economic development requires researchers, engineers, agronomists, and doctors at all levels and spheres; primary school leavers cannot accomplish such research. Rather, the WB should be promoting economic development in developing countries by subsidizing higher education. If nothing is done the poor cannot afford to pay high learning.

### Challenges and Proposed Solutions in Higher Education in Cameroon

The Cameroonian government is implementing neoliberal ideology of no state financing of higher education. The Washington Consensus is promoting the neoliberal ideology by stating that public funds should not be used and enforced by the IMF and the WB for education (Diang, 2013). This practice generated violent protests in the



University of Yaoundé I, including the lack of basic infrastructures to accommodate the growing number of students enrolled, the deteriorating standards of education, the deteriorating living and study conditions, and the increasing withdrawal of state support (Konings, 2011). The students also protested violently against the idea of tuition and fees resulting in a number of students losing their lives.

In addition to that, the lack of separation between politics, academics, and ethnicity also has affected the lives of students. Professional appointments and students' success were very complex to assess because they were not, as always it should, based on academic qualifications but mostly on political affiliations and ethnic discrimination. Loyalty to the ruling regime was enough to earn a post of responsibility even without the right qualifications to carry out the functions demanded by the position. In the same vein, academic mobilities and students' achievements became more a tribal problem predominantly between the Anglophone/Bamileke students versus the Beti students Diang, (2013). The imposition of SAPs and the severe economic crisis made conditions worse. It opened up another phase of struggle among the students. The appointments of lecturers as leaders of the political campaigns and students as activists in the political parties made the situation worse. The universities experienced more cuts in the budget. Finally, it was declared that students should pay tuition of 50,000frs CFA (about \$100) per year and other levies (Diang, 2013). Dissatisfaction reigned everywhere in and out of the university campuses. With time, students especially Anglophone students, a minority group stood up for their rights. Under this difficult situation, Konings (2011) reports that a letter was addressed to the head of state declaring that higher education in Cameroon was sick and without repairs, characterized by inadequate infrastructures, anachronism

and arbitrariness. Although the introduction of SAPs led to the deterioration of the economic life and consequently to other aspects of life in the country, new lessons had been learned.

The protest of the students had been fruitful. Some of their requests were granted. For example, their strikes led to the opening of state universities in other parts of the country like Buea, Ngoundere and Douala. The university in Buea was a particularly welcome idea because it embraced the Anglo-Saxon system of education thus creating space for the Anglophone students to study in a language they were at least comfortable with. This partly solved the problem of accommodation in Yaoundé. Students also learnt how to work together as a group to make their voices heard. In fact, without the student's protest the few changes effected might never have happened so soon. Meanwhile the WB and the IMF encouraged the creation of private universities (Konings, 2011). A number of privately owned universities were opened in Bamenda and other regions of the country.

Johnstone, Arora, and Experton (1998) points out that underlying the market orientation of tertiary education is the ascendance, almost worldwide, of market capitalism and the principles of neoliberal economics. Such has been the case in Cameroon. The programs of these national universities to be recognized and accepted by the majority of European higher education should follow the procedure of implementing the educational standards promoted by the Bologna process (Mngo, 2011). The Bologna process is a harmonized European model of higher education. African countries have not only embraced the Bologna process. African countries of North, West, and Central Africa have also embraced reforms largely modeled after the Bologna Process. Notwithstanding,

the expansion of the Bologna process, especially on the continent of Africa, has been based largely on excolonial lines so far (MacGregor, 2008).

### **Historical Development of the Field of Motivation**

The field of motivation is made up of motivational theories that interested many researchers in psychology. The field has evolved from early 20<sup>th</sup> century to the beginning of 21<sup>st</sup> century through many theoretical interpretations in education. Motivational theorists of the early 20<sup>th</sup> century searched for general principles of behavior. Theories of the period focused primarily on the motivations triggered by organismic physiological drives or needs such as food, sleep, procreation, and security (e.g., Hull, 1943).

Organisms were perceived to be motivated to behave in ways that reload biological deficits and secure survival. Because behavior that aims to satisfy a physiological deficit is done in order to achieve a goal and not for its own sake, it represents a type of extrinsic motivation.

Taking a different approach to motivation, behaviorist psychologists (Skinner, 1953) argued that behavior could be explained by the organisms' motivation to approach pleasant and desirable outcomes and to avoid unpleasant and undesirable outcomes. Pleasant outcomes constitute a reward, and enhance the chance that a behavior will recur, whereas unpleasant outcomes constitute a punishment and reduce the chance that a behavior will recur. Behaviorist psychologists argued that human (and animal) behavior could be explained by the various rewards and punishments in the environment (Skinner, 1953). The field of motivation included behavioral studies that emphasized the role of stimuli and reinforcement possibilities. This explains students' behaviors in applied behavior analysis. In addition, this attempted to identify functional relationships between

the environments (Miltenberger, 2003). This helps to determine why people engage in particular behavior. Skinner (1938), one of the main proponents of behaviorism believes that motivation is influenced by observable environmental conditions, rather than internal causal theories proposed by psychologists such as Freud and Piaget.

Then, the field of motivation moved away from behavioral explanations of motivation to learners' constructive interpretations of realities, using their beliefs, perceptions, cognition, affects, and values play in achievement situations. In so doing, in the middle of the 20<sup>th</sup> century, several theorists challenged the mechanistic models of the drive and behaviorist perspectives. These theorists relied on observations indicating that sometimes people (and animals) engage in behavior without an apparent reward. This engagement was seen to manifest universally early in life in children's exploration and play (White, 1959). But it also appears among older people who engage in games and hobbies. These observations seemed to suggest that such engagement is inherently enjoyable and satisfying. This type of motivation was contrasted with behavior propelled by "extrinsic" forces, and was labeled "intrinsic" motivation (Hunt, 1965).

Taking a different ideological approach, humanistic psychologists of the mid 20<sup>th</sup> century such as Maslow (1954) and Rogers (1954) challenged the drive and behaviorist perspectives by suggesting the existence of human needs that give rise to intrinsic motivation. Maslow, for example, argued that the physiological and safety needs, which he labeled "deficiency needs," are distinct from self-actualization needs, such as the need to develop talents, achieve comprehension, and fulfill potential, which he labeled "growth" needs. While the former provides the basis for extrinsic types of motivation, the latter provide the basis for intrinsic types of motivation.

At the beginning of the 21<sup>st</sup> century, many theorists still hold that intrinsic and extrinsic motivations are based in organismic needs. One such comprehensive theoretical framework—SDT (Deci & Ryan, 1985; Ryan & Deci, 2000)—explicitly asserts that humans are motivated by three BPN: for competence, relatedness, and autonomy. The need for competence in SDT is what White (1959) called effectance motivation. The need for relatedness refers to people’s need to belong and to feel accepted by others. The need for autonomy refers to people’s need to feel self-determined— to be the source of their own action (deCharms, 1968). Like physiological needs, these psychological needs are thought to represent necessary nourishment for psychological development and growth. When an individual’s three needs are fully satisfied, engagement in action is intrinsically motivated and promotes adaptive development and well-being (Deci & Ryan, 1985). When one of the needs is unsatisfied, engagement is likely to be extrinsically motivated and development may be hindered (Deci & Ryan, 1985).

Broadly defined, motivation affects decision-making related to one’s goals, but the concept of motivation carries different meanings for different researchers (Gagne & St. Pere, 2002). Motivation has been thought of as the psychological processes that interact with one’s environment to shape people’s actions (Heckhausen & Dweck, 1998). The causes of goal-oriented activity are also involved in understanding motivation (Atkinson, 1964; Dollard & Miller, 1950; Dweck, 1986; Hull, 1943).

Early motivational psychologists tended to study motivation through what initiates or activates behavior. These researchers looked at observable actions and focused on general traits or motives in their studies on motivation. Different from the early psychologists, more contemporary motivational psychologists have focused on what

activities a person undertakes or specific cognitive and affective mediators (Heckhausen & Dweck, 1998; Weiner, 1992). Recent research includes beliefs, attitudes, perceptions, judgments and feelings that are internal (Ryan & Deci, 2000b).

### **Development of Academic Domains and Academic Motivation**

Academic domain refers to a content area or a defined domain of knowledge and skills in an academic program. Academic domains are one of the important targets of the subject of academic motivation. Mostly, when conducting research on motivation, researchers marked preference for the content or the tasks pertinent to the domains of mathematics (27.8%) and science (14.0%) as stated by Murphy and Alexander (2000). Also, these authors pointed out that there are researchers focusing particularly on student motivation in the fields of reading (8.3%), writing (6.9%), social studies (4.2%), psychology (4.2%), educational psychology (4.2%), English (2.8%), computer technology (2.8%), and business or sports (1.4% each). However, 22% of the studies conducted on academic motivation did not specify any particular subject area or topic. These studies focused, instead, on general academic and motivational indicators such as the effects of students' performance standards and classroom goals on their grade-point average and performance on the Scholastic Aptitude Test, students' academic goals and self-efficacy in relation to their school grades (Wentzel, 1998).

Also, many research have been done in academic motivation using the social-cognitive framework (e.g., Kelly, 1988; Reeve, 2002; Vallerand et al., 1997; Vallerand et al., 1993). Researchers' attention to motivation studies has been focused on situational and contextual factors in the broader psychological literature (e.g., Alexander & Murphy,

1998) and toward more domain specificity (Eccles, Wigfield, & Schiefele, 1998).

However, most of them remain broad in their perspective on academic learning and development (e.g., Skinner & Belmont, 1993).

Alexander and Murphy founded that the distinction between a domain-general or domain-specific position may well be associated with the construct under investigation. For example, several researchers, investigating intrinsic/extrinsic distinctions, student attributions, or social goals (e.g., Wentzel & Asher, 1995), elected to take a general, cross-domain look at these constructs. Other constructs, however, such as interest and self-efficacy, appear to require a more domain-specific or task-specific research design. Also, many researchers who have focused on the construct of interest have been specifically concerned with text-based interest (e.g., Benton, Corkill, Sharp, Downey, & Khrantsova, 1995; Schraw, Bruning, & Svoboda, 1995; Wade, Schraw, Buxton, & Hayes, 1993). The domains of choice for these researchers, therefore, are reading and writing, or the application of these processes to domain-specific texts.

Mathematics and science were the most evident domains and were the preferred domains for researchers investigating several motivation constructs, including self-efficacy, self-competence, and goal orientation (Randhawa, Beamer, & Lundberg, 1993). These choices toward these domains can be explained by the fact that mathematics and science have been characterized as rather well structured and distinguished by problems that are often solved through more formulaic procedures. By presenting students with potentially challenging or demanding problems from these domains (e.g., Nichols, 1996; Pajares, 1996), the researchers are perhaps more likely to bring judgments of capability or competence to the focal point. Moreover, American students' performance in

mathematics and science has long been regarded as problematic and in need of diagnosis and remediation (Rock, Owings, & Lee, 1994; US Department of Education, 1991). Efforts to understand the motivational dimensions of student learning and development in mathematics and science, therefore, may well shed light on students' learning and development in these difficult domains. The present study will focus on general, cross-domain look of student motivation. This will help understand whether the motivational dimensions affect student learning across the disciplines or not.

### **Academic Motivation in Cameroon Schools**

Even though academic motivation is a central part of students' educational experiences and learning it is has received not only limited attention, but also almost inexistent attention amid an education reform agenda focused mainly on curriculum design, curriculum implementation, and school management in Cameroonian tertiary education (Mngo, 2011). Education reform can benefit from an engaging conversation about the overlooked elements of academic motivation. This is not meant to be a comprehensive review of the research or programs on this broad and complex topic. Rather, it is intended to start a conversation about the importance of academic motivation and the policies and practices that might better engage students.

Because of the influence of the Cameroonian context, the role of student motivation in this study is crucial. In general, SAM is one of the factors that can affect the whole schooling system, including how students relate to each other, to teachers and parents, how much time and effort they devote to their studies, what kind of learning is appropriate for their studies, how much support they seek when they're struggling, how they perform on tests, and many other aspects of education. No matter how good the



teacher, the curriculum or the school is, if students are unmotivated, unprepared and do not have the desire to learn it is difficult, if not impossible, to improve their academic achievement and learning. Moreover, unmotivated students can disengage other students from academics, which can affect the environment of an entire classroom or school (Kelly, 1988).

The main reason to investigate about potential factors that may influence SAM is related to the concern of student achievement and school dropout. Higher motivation to learn has been linked to higher school completion rates associated with better academic performance, better conceptual understanding, increased level of satisfaction with school, self-esteem, and social adjustment (Deci & Ryan, 2000). However, motivation often declines as students' progress from primary school to higher education because these students are disengaged from learning, are inattentive, bored, and exert little effort on schoolwork leading ultimately to school dropout (Bridgeland, Dilulio & Morison, 2006). In order to maintain student motivation for a successful learning, Williams and Williams (2011) suggested five key ingredient areas influencing student motivation: student, teacher, content, method/process, and environment. For example, the student must have ability and interest to education. The teacher must be well trained, must focus and monitor the educational process, be dedicated and responsive to his or her students, and be inspirational. The content must be accurate, timely, stimulating, and pertinent to the student's current and future needs. The method or process must be inventive, encouraging, interesting, beneficial, and provide tools that can be applied to the student's real life. The environment needs to be accessible, safe, positive, personalized as much as

possible, and empowering all these educational ingredients are important to student motivation.

In addition, Cameroon is an important setting to study factors that influence SAM because it is marked by a unique history of political, cultural, economic, and social transformations. This may have a huge impact on students' educational success. That is why it is important to know Cameroonian education in pre-colonial era. In addition, it is significant to understand the role that played politics in colonial and postcolonial periods in order to apprehend better the historical context in which education emerged in Cameroon.

### **Self-Determination Theory and Student Academic Motivation: A Conceptual Framework**

Research revealed that academic motivation is a key determinant of academic performance and achievement (Green, Nelson, Martin, & Marsh, 2006; Linnenbrink & Pintrich, 2002). A greater understanding of academic motivation and its factors can provide instructors and researchers alike with valuable information regarding how students adjust to a school environment. The purpose of SAM in SDT consists of demonstrating the influence of intrinsic motivation and extrinsic motivation for academic performance and achievement (Pelletier, Tuson, Green-Demers, Noels, & Beaton, 1998). Three broad categories of motivation According to SDT (Deci & Ryan, 1985, 1991b), three broad categories of motivation describe the process through which a student interacts with his or her environment in order to regulate his or her behavior toward learning. These three categories are intrinsic motivation, extrinsic motivation, and amotivation.

In SDT, these three broad theoretical types of motivation fall along a continuum of self-determination, with amotivation comprising the lowest extreme and intrinsic motivation the highest one. Individuals become more self-determined as they increasingly internalize their reasons for executing a given behavior.

### Intrinsic Motivation

Intrinsic motivation is defined as the innate tendency to engage in an activity for the sole pleasure and satisfaction derived from its practice. An intrinsically motivated individual acts out of personal choice and interest. The behavior is an end in itself (Deci & Ryan, 1985). It has also been defined as (a) the participation in an activity purely out of curiosity, that is, for a need to know about something; (b) the desire to engage in an activity purely for the sake of participating in and completing a task; and (c) the desire to contribute (Dev, 1997). Intrinsic motivation requires much persistence and effort put forth by an individual student. Students with intrinsic motivation would develop goals such as, the goal to learn and the goal to achieve. A mastery goal, the desire to gain understanding of a topic, has been found to correlate with effective learning strategies, positive attitudes toward school, the choice of difficult tasks as opposed to a simple task, perceived ability, effort, concern of future consequences, self-regulation, the use of deep cognitive processes, persistence, achievement, choice and initiative (Archer, 1994; Garcia & Pintrich, 1996; Miller, Greene, Montalvo, Ravindran, & Nichols, 1996).

Past research on intrinsic and extrinsic motivation group students into three main academic dimensions: those who have a (a) mastery or task orientation, (b) ego orientation, and (c) work avoidant orientation. Mastery or task orientation refers to the student who engages in an activity simply to gain knowledge, skill, or to contribute to the

field of knowledge. This type of motivation can be seen as a non-need approach to education: The motive behind task engagement is not to fulfill a personal need. However, two prominent motivation researchers, Deci and Ryan (1985), found that intrinsic motivation could stem from the organism's need to be competent and self-determining.

The study of intrinsic motivation was first recognized in experimental studies of animal behaviors, where it was discovered that many organisms engage in exploratory, playful, and curiosity-driven behaviors even in the absence of reinforcement or reward (White, 1959). Behaviorists acknowledged that behaviors are motivated by rewards. According to them, intrinsically motivated activities represented the ones for which the reward was in the activity itself (Skinner, 1953). In contrary, for learning theorists (Hull, 1943), all behaviors are motivated by physiological drives. Consequently, intrinsically motivated activities represented the ones that provide satisfaction of innate psychological needs such as feelings of competence, autonomy, and relatedness (Deci, 1975; Deci & Ryan, 1985).

### Extrinsic Motivation

There are four categories of extrinsic motivation (external regulation, introjected regulation, identified regulation, and integrated regulation) that describe levels through which a student interact with his or her environment in order to regulate his or her behavior toward learning (Deci & Ryan, 1985). Extrinsic motivation deals with instrumental behaviors (Deci, 1975). This means the individual is not interested in the task for its own sake. The goal of the extrinsic motivation behavior is to bring about positive consequences or to avoid negative ones. Extrinsic motivation does not necessarily involve the sacrifice of self-determination. Indeed, according to some studies

(Deci & Ryan, 1985; Ryan et al., 1992), extrinsic motivational subtypes would coexist on a self-determination continuum.

The category Ryan and Deci (2000a) labeled external regulation represents the least autonomous forms of motivation and is governed by sources of control originating from the individual's environment (e.g., reward or punishment). At this level, individuals experience externally regulated behavior as controlled or alienated, and their actions have an external perceived locus of causality (deCharms, 1968). A second category of extrinsic motivation is introjected regulation. It describes a type of intrinsic regulation that is still at certain point controlling because there is pressure on those who are performing such actions to maintain self-esteem or to avoid guilt or anxiety (Nicholls, 1984; Ryan, 1982). Although the regulation is internal to the person, introjected behaviors are not experienced as fully part of the self and thus still have an external perceived locus of causality. An advance degree of autonomy or self-determination form of extrinsic motivation is regulation through identification. At this level, the student identifies himself to the regulation because of the personal importance he gives to the behavior and has thus accepted its regulation as his or her own. The most autonomous form of extrinsic motivation is integrated regulation that occurs when identified regulations have been fully incorporated to the self. But this part should not be taken into account in this study because it is allegedly difficult to make practically a difference between identification regulations and integrations. The more one identifies the reasons for an action and assimilates them to the self, the more one's extrinsically motivated actions become self-determined.

Even though extrinsic motivation is not highly desirable, many of the activities in which students being engaged are directly influenced by extrinsic rather than intrinsic motivation (Csikszentmihalyi & Larson, 1984; Csikszentmihalyi & Nakamura, 1989). More often, when students advance to higher education, intrinsic motivation declines and needs to be backed up by extrinsic motivation to keep students involved in academic tasks at hand. Research findings point quite consistently to a gradual decline in students' academic intrinsic motivation, and sometimes also extrinsic motivation, over years of schooling (Harter, 1981; Lepper, Corpus, & Iyengar, 2005; Sansone & Morgan, 1992;). These trends have been attributed to the prevalence of extrinsic forces in schools such as tests and token economies, to the irrelevance of school tasks to students' lives and, more generally, to the growing mismatch between characteristics of school environments and the needs of students for competence, autonomy, self-expression, and meaningful social interaction (Eccles et al., 1993; Lepper & Henderlong, 2000).

### **The Importance of Social Support in Education**

Researchers focused on SS as one of the main factors of SS in SDT (Cauce, Mason, Gonzales, Hiraga, & Liu, 1996). Elias and Haynes (2008) found two key factors that determine the SS of students in the classroom: the perceived SS of teachers and the perceived support of peers. Many previous studies have included factors such as instructional methods, communication of expectations, power and control structures, competition, safety, and other school demands of classroom environment in the definition of SS (Evans, Harvey, Buckley, & Yan, 2009). In this study, SS, as perceived in teacher-student and student-student relationships, is an essential dimension of student motivation (Bear, 2010; Gregory, Skiba, & Noguera, 2010).

## Teacher Support

Teacher support system plays a key role in the student motivation process during the course of students' academic success. Previous studies posited that the social environment can be more or less 'empowering' and/or 'disempowering' depending on which social–environmental characteristics are emphasized. An empowering environment is one that is more autonomy supportive (teachers provide rationale, promote meaningful choice, and solicit input; Mageau & Vallerand, 2003), task-involving (teachers positively reinforce student development, encourage co-operation, and emphasize self-referenced competence (Ames, 1992; Newton, Duda, & Yin, 2000), and socially supportive (teachers value their students as individuals). Teachers should be able to understand subject matters deeply and flexibly so that they can help students create useful cognitive maps, relate ideas to one another, and address misconceptions (Shulman, 1987).

According to Patrick, Williams, and Fortier (2007), teacher emotional support and academic support are important for students' success. The emotional support involves the perception that the teacher personally loves and cares about the student. The academic support deals with the caring of student learning strategies and academic skills. Research demonstrated that TS, to be effective and efficient in the classroom, should be absolutely in compliance with student effort, classroom rules, and applying self-determination strategies (Dearnley & Matthew, 2007; Patrick, Ryan & Kaplan, 2007; Ryan & Patrick, 2001, 2005; Wentzel, Battle, Russell, & Looney, 2010).

## Peer Support

The definition of PS of learning, also called peer learning, includes the support of the emotional and academic aspects that learners offer each other, as much as the learning

task itself (Topping, 1996). Peer support can be conceptualized as a way of moving beyond independent to interdependent or mutual learning (Boud, 1988). This involves students explaining their ideas to others and participating in activities in which they can learn from their peers. Peer support leads to the development of the metacognition processes such as developing skills in organizing and planning learning activities, working collaboratively with others, giving and receiving feedback and evaluating their own learning (Boud, 1988). In addition, when peer learning is formalized it can help students learn effectively.

Peer support is not a distinct, homogenous educational strategy. It includes a wide broad of activities. For example, researchers from the University of Ulster identified 10 different models of peer learning (Griffiths, Houston, & Lazenbatt, 1995). These ranged from the traditional proctor model, in which senior students tutor junior students, to the more innovative learning cells, in which students in the same year form partnerships to assist each other with both course content and personal concerns (Boud, 1988). Other models deal with discussion seminars, private study groups, counseling, peer-assessment schemes, collaborative project or laboratory work, projects in different sized groups, workplace mentoring and community activities (Boud, 1988).

Peer support through peer teaching, or peer tutoring, is a strategy in which advanced students, or those in later years, take on a limited instructional role. Peer teaching is a well-established practice in many universities, whereas reciprocal peer learning is often considered incidental-a component of other more familiar strategies, such as the discussion group (Brookfield & Preskill, 1999). The present study is



investigating on more innovating learning cells, in which students in the same year form partnership to assist each other.

### **Influence of Perceived Social Support of Basic Psychological Needs on Student Academic Motivation**

The role of SS (TS and PS) is important in determining the nature of BPN (autonomy, competence, and relatedness) and their effect on students' well-being and success (Deci & Ryan, 1985; Roorda, Koomen, Split, & Oort, 2011). The relationship between BPN and SS fosters positive teacher-student relationships and student-student relationships, creates classroom environments more conducive to learning, and meets students' developmental, emotional and academic needs. In addition, when SS provided is low support in terms of autonomy, competence and relatedness, students can experience negative outcomes on their motivation to learn successfully (Boggiano & Katz, 1991).

### **Influence of Perceived Teacher Support of Competence, Autonomy, and Relatedness on Intrinsic and Extrinsic Motivation**

Studies have revealed that teachers who provide high autonomy support for their students are more likely than those who provide low autonomy support (i.e., those who use controlling methods) to explain the relevance of learning activities, create student-centered climates, encourage student initiative, inquire about students' desires and needs, and attempt to understand students' emotional states (Assor, Kaplan, & Roth, 2002; Reeve & Jan, 2006). Additionally, students in classrooms with teachers who use autonomy-supportive strategies tend to have higher intrinsic motivation, perceived

competence, engagement, and self-esteem than students in classrooms of teachers who use more controlling strategies (Cheon & Reeve, 2014; Guay & Vallerand, 1996). Controlling methods are associated with negative student outcomes such as lower grades, preferences for easy work, and high dependence on others' evaluations of students' work (Boggiano & Katz, 1991).

In terms of understanding why some teachers are more autonomy-supportive than others, SDT and research suggest that teachers who feel pressured or constrained at work are more likely to use controlling, maladaptive, and less effective teaching methods compared to teachers who are not pressured (Flink, Boggiano, & Barrett, 1990; Pelletier, Séguin-Lévesque, & Legault, 2002; Taylor, Ntoumanis, & Standage, 2008). Further, Roth, Assor, Kanat-Maymon, and Kaplan (2007) reported teachers' autonomous motivation predicted their use of autonomy-supportive instructional methods, which in turn predicted students' autonomous motivation. Teacher support is effective and efficient in the classroom when it complies with student effort, classroom rules, and applying self-determination strategies (Ryan & Patrick, 2001, 2005).

Self-determination theory suggests that teachers might be more likely to reach out and try to understand their students and to use strategies to establish a friendlier and more supportive learning community if their own needs for relatedness are being met in their work environment. That being said, research indicates that teachers' perceptions of pressure and support at work predict students' motivation, their sense of accomplishment, and emotional state at work, which, in turn, have been found to influence their teaching effectiveness, choice of instructional strategies, beliefs about their teaching abilities, and support of students (Flink et al., 1990).

A number of evidence suggests that teachers' perceived efficacy for teaching is also related to important student outcomes, including students' motivation (Midgley, Feldlaufer, & Eccles, 1989; Woolfolk & Hoy, 1990) and achievement (Ashton & Webb, 1986; Goddard, Hoy, & Woolfolk, 2000). In addition, teachers with a high sense of efficacy tend to be more open-minded, more willing to implement new teaching strategies, more apt to develop challenging materials, more likely to persist when students are having problems, and more likely to address students' individual needs than teachers with a weaker sense of efficacy (Ashton & Webb, 1986; Guskey, 1988; Stein & Wang, 1988; Tschannen-Moran, Woolfolk, & Hoy, 1998).

Students' level of motivation and participation, whether or not in class, is influenced by student- teacher relationships and interactions (Skinner & Belmont 1993). The authors have identified three primary dimensions of teacher that are associated with student motivation and subsequent learning gains: involvement/relatedness, structure/competence, and autonomy. They suggest that teacher's affection, attunement, and dependability are all indicative of the level of teacher involvement. When a teacher exhibits affection, he likes, appreciates, and enjoys students. Students' level of affection determines how strong student-teacher relationships are. Teachers' level of attunement reflects whether teachers try to understand students, sympathize with students, and have knowledge about students. Teachers' dependability refers to whether teachers are available when students need them. Teachers' structure ability refers to the volume and clearness of information that teachers offer to students about expectations and ways of effectively achieving desired educational outcomes (Skinner & Belmont, 1993). And teachers' autonomy refers to increasing students' perspective; identifying and nurturing

the students' needs, interests, and preferences; providing optimal challenges; highlighting meaningful learning goals; and presenting interesting, relevant, and enriched activities students (Jang, Reeve, & Deci, 2010).

Positive feedback, on the other hand, has been found to be the most important factor in increasing one's sense of efficacy (Reeve, 2005). In a study of college students and their academic experiences, Deci (1975) found that students' sense of competence was enhanced most by teachers who provided specific, supportive, and non-demeaning feedback.

Sansone, Thoman, and Smith (2010) also examined the relationship between providing choice to undergraduate students in a learning task and their feelings of competence and intrinsic motivation. Their findings revealed that exercising even minimal choice over one aspect of participation in a learning task made individuals feel more competent and intrinsically motivated. Teachers' instructional orientation often falls along a continuum of needing to control students' behavior to wanting to support students' autonomous learning. Teachers' ability to balance these competing demands influences the kind of classroom practices they used to influence students' motivation and self-perception. Research findings revealed that students of autonomy-oriented teachers tend to be more intrinsically motivated (Deci, Schwartz, Sheinman, & Ryan, 1981; Green & Foster, 1986) and perceive themselves as more competent (Deci et al., 1981) than students of control-oriented teachers. Moreover, researchers have also found that students who perceive their teachers as facilitating their sense of personal responsibility for performing in the classroom made attributions of academic responsibility, better grades, and higher perceived academic competence (Sadowski & Woodward, 1993).

Teacher involvement can also foster students' interest and the value and importance students placed on academic work (Goodenow, 1993; Midgley et al., 1989). Additionally, students are more likely to prefer teachers who are more involved with them. Research evidence suggests that merely liking teachers foster positive motivational outcomes for students. Miller et al.'s (1996) study of the effect of liking or disliking a teacher on subsequent student motivation, students put forth more effort for teachers they liked versus teachers they disliked. Students were also persistent and felt competent. The authors argued that when students liked their teacher they put forth more effort for that teacher because they valued their teacher's opinions of them as a good student. It is reasonable to think that students who feel their teachers are involved are likely to have feelings of relatedness in the context of the classroom environment.

Research findings support that teacher training for autonomy support increases students' motivation to learning because trained teachers display significantly more autonomy-supportive behaviors than do nontrained teachers (Reeve, Deci, & Ryan, 2004). Autonomy-supportive teachers are characterized by three categories of instructional behavior during learning activities: (a) nurture inner motivational resources, (b) rely on noncontrolling informational language, and (c) acknowledge the students' perspective and feelings (Deci et al., 1994; Reeve & Jang, 2006; Ryan & La Guardia, 1999). In the context where autonomy supportive teachers support students' inner motivational resources, these teachers generate opportunities for students to take the initiative during learning activities by building instruction around students' interests, preferences, personal goals, choice making, and sense of challenge and curiosity, rather than relying on external sources of motivation such as incentives, consequences,

directives, and deadlines (Jang et al., 2010). In the context of autonomy-supportive, teachers rely on noncontrolling informational language. For example, they provide explanatory rationales for requested tasks and communicate through messages that are informative, flexible, and rich in competence-related information, rather than neglecting rationales and by communicating through messages that are evaluative, controlling, pressuring, or even rigidly coercive (Jang et al., 2010). Ultimately, when autonomy-supportive teachers recognize the students' perspectives and feelings, they promote a valuing of the students' perspectives during learning activities, inquire about and acknowledge students' feelings, and accept students' expressions of negative affect as a potentially valid reaction to classroom demands, imposed structures, and the presentation of uninteresting or devalued activities (Jang et al., 2010).

The classroom management literature about teacher-provided structure has also been studied extensively in the area of establishing order (Doyle, 2006), introducing procedures (Emmer, Evertson, & Anderson, 1980), communicating policies about how to get things done (Carter & Doyle, 2006), and minimizing misbehavior while encouraging engagement and achievement (Brophy, 1989). Teacher-provided structure from a motivational point of view helps students to develop a sense of perceived control over school outcome and develop perceived competence, an internal locus of control, mastery motivation rather than helplessness, self-efficacy, and an optimistic attributional style (Skinner, Marchand, Furrer, & Kinderman, 2008).

Gorham and Christophel's (1992) found eight specific factors students perceived as motivators in college classes. The most frequently listed motivators were interest in perceived relevance of the material, teacher's effectiveness and enthusiasm in lecturing,

grade or credit motivation, teacher's use of student-centered behaviors, positive responses to the organization of the course and material, opportunity to participate and feedback from the instructor, personal achievement motivation, and teacher competence/knowledge. For these authors, the eight categories accounted for 74% of the motivator descriptions. They also concluded that students are more likely to attribute their lack of motivation in a college class to what the teacher does and to attribute their being motivated to more personal factors such as interest in the subject, general achievement motivation, or desire/need to earn the credit and/or a good grade. Conversely, control-oriented classrooms in which teachers' focus was on organization and order produced students who were likely to dislike schoolwork (Fry & Coe, 1980) and showed little intrinsic interest in the subject being taught (Grolnick & Ryan, 1987). Most of the previous studies were limited to the influence of BPN on study motivation. The present study examined the relationship between BPN, SS, intrinsic motivation and extrinsic motivation in the classroom because of the limited studies done on these variables.

#### Influence of Perceived Peer Support of Competence, Autonomy, and Relatedness on Intrinsic and Extrinsic Motivation

Peer support of BPN may influence student motivation. The approach of the PS in shaping motivational components builds on developmental-ecological frameworks emphasizing the importance of direct, regularly occurring interactions as the proximal settings in which individuals acquire competencies, learn social skills, and develop sets of beliefs and behaviors (Bronfenbrenner, 1996; Kindermann & Gest, 2008).

The purpose of developmental-ecological theory (DET) is to understand how multiple layers of context, and in particular in the present study the family-school link, play a role in student learning. Pianta and Walsh (1996) characterized the ecology of schooling as an organized system of interactions and transactions among persons (parents, teachers, students), settings (home, school), and institutions (community, government) that are oriented to support developmental and educational progress of students. Bronfenbrenner (1986) stated that the ecology of human development consists of five interrelated, nested systems: Microsystems- which consists of any environment in which a student has direct experiences-, mesosystems-which are the transitions and links between microsystems, through which family-school partnerships are perfect example, exosystem- which includes the other people and places that an individual may not interact with but that still have a large affect on them.-, macrosystem-which is the sociocultural context in which students and their micro, meso, exosystems operate-, and chonosystem- which is related to all important temporal element of the development.

Following development-ecological theory, students who surround themselves with peers who value learning and academic activities will also value their own learning and strive to enhance their education because of the role of positive interaction effects in the life of these peers. Always, a peer effect exists among students, and this can affect students' interactions with peers (Kennedy, Smita, & Dale, 1997). There are three main elements that play a vital role in the provisions of friendships as multidimensional nature of PS: the level of the peer group, the type of the peer group, and the size of the peer group (Parker & Asher, 1993). In addition, there are two levels of peer effects in schools: the between school level and within School level. The interactions among peers whether



within the same school or between the schools are a normal and essential part of the motivational process that influences the lifelong learning habits of students. There are two types of peer group composition: a heterogeneous peer group and a homogeneous peer group. The idea that college peers have an influence on individual students has been strongly supported. “A student’s most important teacher is another student” (Chickering, 1969, p. 253).

Educators should be aware that peer groupings provide a variety of positive experiences for students. Peer group membership provides six primary opportunities: (1) opportunities to learn how to interact with others; (2) support in defining identity, interests, abilities, and personality; (3) autonomy without control of adults and parents; (4) opportunities for witnessing the strategies others use to cope with similar problems and for observing how effective they are; (5) involved emotional support and; (6) building and maintaining friendships (Uzezi, & Deya, 2017). These shared experiences within a peer group may have both positive and negative associations with behavior problems. Peer SS has a positive impact on well-being, protecting youth from feelings of anxiety and alienation, providing advice and understanding as young people face new challenges, and helping young people feel valued, especially during times of rapid change (Hirsch & Dubois, 1992).

A peer group in an academic learning institution can play an important role in motivation that leads to achievement because students can be involved in a type of cooperative group that focuses on highly structured learning groups and emphasizes individual and group accountability (Flynn & Klein, 2001). Research on peer-group learning has shown it to be effective in increasing students’ levels of achievement

(Johnson & Johnson, 1984; Slavin, 1991, 1996). One major view of the effects of peer-group learning on achievement is the motivational perspective. Research on peer-group learning has reported that it increases not only achievement but also motivation-related variables such as intrinsic interest and self-efficacy (Nichols, 1996; Nichols & Miller, 1994).

Slavin (1996) explains these effects of peer-group learning on achievement from the perspective of extrinsic motivation, rewarding groups according to group performance. According to the author, the use of group rewards motivates students to interact with each other productively by creating an interpersonal reward structure within each group. However, some researchers have criticized the use of group goals, claiming that since they act as external rewards, they run against academic efforts and thus create a negative effect, a competitive classroom environment.

In contrast to group rewards, the development of a learning-goal orientation motivates students to develop autonomous motivated behaviors because it helps them identify the rationale of their engagement in learning and to focus on achieving tasks. Research suggests that peers can provide students with emotional and tutorial learning support (Nichols & Miller, 1994), which is likely to develop their intrinsic motivation. These authors demonstrated that peer effects have significantly stronger learning-goal orientations in carrying out learning tasks for individual students. Conversely, some peer groups may encourage the expression of drug abuse, alcoholic abuse, violence, and many other antisocial behaviors. Therefore, peer groups may have either good or bad influences on student motivation to learn, depending on the orientation of behaviors that the members of groups have chosen. However, further research is needed to find effective

structures of peer –group learning and how to compose a peer group that fosters autonomous regulated or intrinsic behavior, if we are to find better ways of motivating students to learn successfully.

The composition in the peer group structure is one of main determinants of motivation. For instance, flexible group arrangements provide students with an opportunity to increase participation, interact with their peers, and establish learning goals (Johnson & Johnson, 2003). To provide an atmosphere in which students can share diverse experiences and multiple viewpoints as they work to solve problems, Brophy (1989) recommended that students be grouped heterogeneously. According to Johnson and Johnson (2003), heterogeneous peer-group learning has been associated with both affective and cognitive benefits to students of both high and low ability. For example, when a problem comes up less able students can benefit from more able students' learning behavior, such as how they represent problems or come up with solutions. At the same time, more able students, on the other hand, can benefit from explaining their knowledge structures to less able students. In addition, heterogeneous groups can provide students with higher interpersonal attention because these groups are, by definition, composed of students with different backgrounds. In addition, less able students are likely to receive more attention in a heterogeneous peer group than in a homogeneous peer group (Hooper & Hannafin, 1988; Zimmerman, 2008).

To test the effectiveness of heterogeneous peer grouping in various contexts, some researchers have suggested that factors other than ability level should be considered in forming effective peer groups. These factors may include gender, age, and other personal characteristics (Hooper, Temiyakarn, & Williams, 1993). Of these factors, it is

especially important to consider personal characteristics to provide a more meaningful learning. That is why BPN are part of the personal variables considered in this study.

Research promotes competence as one of the main personal characteristics in forming effective peer groups. Competence refers to a person's beliefs of his or her own effectiveness or confidence in his or her ability to perform a skill successfully (Lent, Brown, & Larkin, 1996). It is particularly important as a type of motivation construct because it mediates the relationship between goals and performance. For example, research on goal orientation has demonstrated that students with learning goals also rate themselves high on self-efficacy and intrinsic motivation (Pintrich, 2000; Schunk, 1995). In fact, learning goals help students to focus on understanding learning tasks, accepting challenges, and acquiring or improving capabilities. As students who adopt learning goals, students with high levels of self- efficacy tend to participate actively in learning tasks and demonstrate greater effort and persistence in completing challenging tasks. Given that, many researchers assume that students with learning goals feel efficient as they work on tasks and assess their own progress (Hagen & Weinstein, 1995). Given the correlation between goals and self- efficacy, it is also believed that self-efficacy affects intrinsic motivation and performance. Thus, self-efficacy appears to be an appropriate personal characteristic to take into account in forming effective peer groups.

Research showed that self-efficacy mediates a relationship between heterogeneous peer groups and achievement. Heterogeneous peer groups have significantly higher satisfaction scores on learning tasks than homogeneous peer groups (Williams, 1994). Interestingly, students with higher levels of communication efficacy earned significantly higher satisfaction scores within heterogeneous peer groups than

within homogeneous peer groups, because they had more opportunities to explain things to their peers.

Despite the shared benefits of heterogeneous peer grouping, research on this type of grouping has had mixed results. Some researchers have reported that only students of low ability learn in heterogeneous peer groups, because these groups fail to challenge high-ability students and because the latter perform well in any type of group. For example, Hooper and Hannafin (1988) have reported that heterogeneous peer groups only significantly improved the achievement levels of students with low ability only and did not improve the achievement levels of students with high ability. Webb (1982) also report that heterogeneous peer groups provide greater benefits to students of low ability. Others, however, have claimed that heterogeneous peer groups increase the achievement of more able students at the expense of those who are less able (Williams, 1994). Nevertheless, heterogeneous groups are likely to have influence on intrinsic motivation and self-regulation that can lead to academic success.

Interactions with classroom peers can also fulfill students' need for autonomy. Peers can promote each other's autonomy when they attempt to understand each other's viewpoints (Youniss & Haynie, 1992). When students work together to negotiate activities in the classroom, cooperate on group projects, examine and challenge their own beliefs, explain the relevance of classroom assignments to each other, engage in self-exploration, and share their ideas, they cocreate an autonomy-supportive context (Beiswenger & Grolnick, 2010; Deci, La Guardia, Moller, Scheiner, & Ryan, 2006).

Research showed that warmth that results from relatedness is also a key feature of high-quality peer relationships (Parker & Asher, 1993) and highly functional classroom

climates (Cabello & Terrell, 1994). When students have opportunities to talk and listen to each other, provide emotional support, share learning experiences, and develop respect, they are more likely to feel that they belong and are understood and cared for by their peers. Warm interactions with classroom peers create a climate of comfort and help meet students' need for relatedness (Ciani, Middleton, Summers, & Sheldon, 2010; Furrer & Skinner, 2003).

Interactions with peers that contribute to structure or competence in the classroom are also important for the development of a sense of control. Although they do not provide structure in the same way that teachers do, classroom peers provide contextual affordances that can support academic competence (Wentzel, 2005). For example, when interacting with classmates, students practice communicating, give and receive feedback, model academic competencies, resolve conflicts, provide help and advice, and create shared academic goals (Wentzel, 2005). Predictable, instrumentally supportive interactions between classmates (e.g., interpreting teacher instructions, sharing materials) promote structure and, therefore, feelings of competence because students know they can rely on their peers for information and help.

Over time, self-efficacy, warmth or relatedness, structure or competence, and autonomy support from peers not only operate as social resources but also help students to construct their own personal motivational resources by promoting positive self-perceptions of relatedness, competence, and autonomy. Students can draw on these resources when they encounter difficulties, coping constructively, reengaging with challenging academic tasks, and in general developing everyday motivational resilience (Martin & Marsh, 2009; Skinner & Pitzer, 2012). Classrooms become genuine

cooperative learning communities when the efforts of all members are needed and valued and when they are directed toward collective learning goals that include each member's progress and success.

### **Self-Determination Theory and Social Support: A Conceptual Framework**

Cognitive Evaluation Theory is a sub-theory of SDT that is designated to explain the influences of social support and interpersonal interactions in SDT (Deci, 1975). Cognitive Evaluation Theory highlights the role of competence on intrinsic motivation, and states that events that are perceived to detract from social contexts will lessen intrinsic motivation. Cognitive Evaluation Theory focused on three propositions to explain how consequences influence intrinsic motivation.

1. Events that foster greater perceived competence would enhance intrinsic motivation, whereas those that diminish perceived competence would decrease intrinsic motivation (Deci & Ryan, 1985).
2. Events correlated to the initiation and regulation of behavior have three potential aspects, each with a significant function: (a) the informational aspect of events facilitates an internal perceived locus of causality (a person's perception of the cause of the success is self) and perceived competence, thus positively influencing intrinsic motivation, (b) the controlling aspect of events facilitates an external perceived locus of causality (a person's perception of the cause of success or failure is the alter ego), thus negatively influencing intrinsic motivation and increasing extrinsic compliance or defiance, and (c) the amotivating

aspect facilitates perceived incompetence, and undermining intrinsic motivation while promoting disinterest in the task (Deci & Ryan, 1985).

3. Personal events differ in their qualitative aspects and, like external events, can have different functional significances. Events deemed internally informational facilitate self-determined functioning and maintain or enhance intrinsic motivation. Events deemed internally controlling events are experienced as pressure toward specific outcomes and undermine intrinsic motivation. Internally amotivating events make incompetence significant and undermine intrinsic motivation (Deci & Ryan, 1985).

Cognitive Evaluation Theory and intrinsic motivation is also linked to relatedness through the proposition that intrinsic motivation increases if associated with a sense of security and relatedness (Grolnick & Ryan, 1989).

### **The Influence of Basic Psychological Needs on Student Learning and Development**

According to SDT, human beings have three BPN: the need for autonomy, competence, and relatedness. Individual psychological need satisfaction is crucial for his or her growth and well-being. Cross-cultural research has demonstrated that the satisfaction of BPN is innate, universal, and essential for all people's healthy development, commitment to work, motivation, and well-being (Deci & Ryan, 1985, 2000; Gagné et al., 2014). Need satisfaction is even associated with greater work performance, less perceived stress, and fewer turnover intentions. Also, when the needs are not satisfied (thwarted), there will be negative psychological consequences (Gagné et



al., 2014). The three BPN are present and need to be satisfied at all levels of human functioning: at the specific-task level (a given job task), at the domain level (study, work or family), and at the global level (personality) (Deci & Ryan, 2014).

Self-determination theory conceptualizes autonomy as behaving with a sense of volition, endorsement, willingness, and choice; competence as mastering one's environment; and relatedness as feeling related to others in one way or another (Gagné & Deci, 2005). Autonomy satisfaction events are those events that exhibit the process of choice and the experience of the autonomy that the external environment offers to an individual (Deci & Ryan, 1991a). For example, in the classroom environment, autonomy satisfaction draws its sources from teaching and learning practices that acknowledge the importance of student opinions, feelings, and agenda. Autonomy satisfaction results from events that give opportunities to students to follow their own interests and to make choices in how they learn. Researchers have found that in classroom environments that provide autonomy satisfaction, students are likely to express an inherent tendency to learn (Ryan & Powelson, 1991), to feel competent, to demonstrate mastery motivation (Ryan & Grolnick, 1986), and to be intrinsically motivated (Deci & Ryan, 1991a; Zuckerman, Porac, Lathin, Smith & Deci, 1978).

In SDT's framework, competence refers to the sense of mastery and efficacy that one's experience in interactions with the world. This conceptualization builds on the earlier work of Robert White (1959), who recognized the key role competence plays in motivating humans' behavior. He posited that people have an innate need to grow and master their environment. The author conceptualized striving for competence as a critical human need to feel efficacious. Reeve (2005) recognized that feeling of efficacy resulted

from repeated experiences of competently dealing with cognitive, behavioral, interpersonal, and environmental challenges. When one feels competent, one feels effective and experiences the world as a manageable place, and this results in the development of hope and a reduction in feelings of powerlessness.

Feeling competent is based not just on the individual's effective execution of a task, but also on the environment's response to the individual. As noted by attachment theory (Sroufe, 1980), sensitive caregivers respond to a child's needs and requests and these changes in the child's environment lead the child to feel effective and competent. The relationship between secure attachment and feeling competent was supported by a study by Sroufe in which he found that securely attached children scored higher on 11 of 13 measures of competence. He concluded that, when a primary caregiver is unresponsive, the child experiences a lack of effectiveness and may give up trying to change or seek help. At the extreme, this powerlessness may become what Seligman (1975) termed "learned helplessness," a state of being characterized by flat affect, unclear thinking, social withdrawal, lack of self-awareness, lack of self-worth, and depression (Seligman, 1975).

The sense of relatedness or belonging, in general, has a long history in psychological research and has been associated with relationships that students can have with others. As one of the elements of SDT's framework, relatedness has been referred to as the need for affection between people (Murray, 1938) the need for positive regard from others (Rogers, 1951), belongingness (Baumeister & Leary, 1995; Goodenow, 1993; Maslow, 1954) affiliation motivation (McClelland, 1987) and the need for relatedness (Deci & Ryan, 1991b; Vallerand, 1997). Goodenow (1993) proposed that a

sense of belonging at school reflects “the extent to which students feel personally accepted, respected, included, and supported by others in the school social environment” (p. 80). Relatedness is characterized by a desire for regular contact, stability in interpersonal relationship, affective concern, and is a continuum (Baumeister & Leary, 1995). Lack of relatedness may lead to feelings of social isolation, alienation, and loneliness.

The role of social connectedness and shared experience to human development has been recognized for many years (Dewey, 1916). Also referred to as social relatedness (Furrer & Skinner, 2003), belonging (Baumeister & Leary, 1995; Goodenow, 1993), and connectedness (Grossman & Bulle, 2006), interpersonal relatedness involves the development of intimate, mutually satisfying, reciprocal interpersonal relationships (Kuperminc, Darnell, & Alvarez-Jimenez, 2008). Such supportive and caring relationships with important others, including parents, siblings, teachers, peers, and mentors are thought to promote youths’ positive sense of self and emotional well-being, view of the social world as trustworthy (Furrer & Skinner, 2003), academic achievement (Goodenow, 1993) and social and behavioral adjustment (Gest, Welsh, & Domitrovich, 2005), and academic motivation (Deci, 1975; Deci & Ryan, 1985; Ryan, 1995; Ryan & Deci, 1975, 2000a).

Maslow (1968) indicated that beneath most emotional breakdown lies a need for belongingness, being loved, and respected. Many educational researchers agree that the need for belonging is one of the most important needs of all students to function well in all types of learning environments (Connell & Wellborn, 1990; Deci & Ryan, 1991a). The feeling of belonging may have a direct and powerful influence on students’

motivation (Goodenow, 1993). For example, perceived support and the sense of belonging are expected to increase students' beliefs and feelings in their success and accordingly to increase their academic motivation.

Appropriate satisfaction of the need for relatedness leads to physical, emotional, behavioural, and mental well-being (Maslow, 1968). In a set of three consecutive studies, Sheldon, Elliot, Kim and Kasser (2001) asked college students to remember the most satisfying events in their lives and to rate the needs that had been satisfied through experiencing those events. The ratings in all three studies revealed that relatedness was one of the three major psychological needs that students felt most satisfied when they experienced it. Existing research suggests that students who feel that they belong to learning environments report higher enjoyment, enthusiasm, happiness, interest, and more confidence in engaging in learning activities, whereas those who feel isolated report greater anxiety, boredom, frustration, and sadness during the academic engagement that directly affects academic performance (Furrer & Skinner, 2003).

Undergraduate student persistence is a broadly studied topic related to student belonging within the field of higher education studies (Tinto, 1975, 1987, 1988). Focusing on institutional structural factors, Tinto's theory posits that early withdrawal is influenced by a variety of factors. As students come into an institution, they do so with a variety of backgrounds, intents, and commitments.

A key aspect of Tinto's model is concerned with the interactive effects of academic and social experiences on a student's decision to remain at an institution. Tinto's model asserts that students who engage in formal and informal academic and social integration experiences are less likely to leave their institution. In addition,

individuals reformulate goals and commitments because of integrative experiences and positive experiences, which reinforce commitment. Tinto's model is multi-faceted and considered three groups of variables (Tinto, 1988).

1. 'Pre-college characteristics', such as, family background, skills and abilities and prior schooling experiences;
2. College experiences, such as students' area of study, academic performance (grade point average), and the amount and quality of student-faculty interactions. These are seen as indicative of students' level of academic integration in the college environment.
3. Students' out-of-class experiences, such as participation in extracurricular experiences, including paid work, and student-student interactions. These represent students' social integration in college.

Other researchers have investigated factors associated with sense of belonging. Hurtado and Carter's (1997) sense of belonging measure focused on students' attachment to the campus community as a whole. Other researchers expand the concept to consider feelings of attachment to various communities or other university contexts (Hoffman, Richmond, Morrow, & Salomone, 2002; Kember, Biggs, & Leung, 2004). Principal distinctions of this concept rest with the two main campus communities, the students and the faculty. Hoffman et al. (2003), examined the main conceptual dimensions of a sense of relatedness instrument that considered student-to-peer and student-to-faculty psychological connections. They found five factors related to sense of relatedness:

- (1) empathetic faculty understanding,
- (2) perceived PS,
- (3) perceived isolation,
- (4) perceived faculty support and comfort,
- (5) perceived classroom comfort.

Similarly, Kember et al. (2004) used a measure of sense of relatedness that encompasses attachments to the broader university, department, teaching staff, and peers.

A study by Wilson (1984) of adjustment to university life in Africa used a two-stage process to identify and explore the extent of transition problems to the University of Zambia. A total of 40 different types of problems were identified, some of which were sufficiently potent, general or persistent, to be a cause for concern to the university authorities. The main problems identified were academic: difficulty of obtaining books because of insufficient copies in the library and bookshop; academic workload; poor matching of students to compulsory courses; difficulties with techniques of learning and studying at university. However, amongst the most serious problems was the university catering with a menu that lacked variety and poorly cooked food.

Ultimately, according to SDT the satisfaction of BPN should be one of students, faculty, and administrators 'primary priorities due to the impact it has on student well-being in general and SAM and achievement in particular. In order to be motivated and learn successfully, students' BPN need to be satisfied, and the role of school environment is essential in meeting this need.

## **The Influence of Basic Psychological Needs on Students' Academic Motivation**

### **The Relationship Between Intrinsic Motivation and Basic Psychological Needs**

The relation between intrinsic motivation and BPN has been examining as important for student learning. Research pointed out four individual factors that influence intrinsic motivation: challenge (where the learner is motivated to attain a goal), curiosity (where the learner is motivated by a physical stimulus or by a cognitive discrepancy), control (where the learner is motivated by the need to be in control of his/her environment), and fantasy (where learners are motivated by mental images of situations not actually present) (Lepper & Hodell, 1989). These factors combine with student autonomy, competence, and relatedness stimulate or inhibit behavior, and educators can make learning environments more motivating, especially when they are incorporated into instructional settings.

Research revealed that students' intrinsic motivation is enhanced when educational practices promote students' innate psychological needs such as a sense of personal autonomy and ability to learn, when schoolwork is challenging and relevant to students, and when the interactions between teachers and students are positive (Lepper & Henderlong, 2000; Pintrich & Schunk, 2002). While some important variation exists (e.g., Nisan, 1992), there seems to be a wide-spread consensus among researchers and educators that BPN are beneficial for enhancing intrinsic motivation among students. In the support of a claim that self-determination applied universally, Van Egmond, Berges, Omarshah, and Benton, (2017) found that intrinsic motivation was an important predictor of goal-directed behavior, even under conditions of extreme resource scarcity in one of

the poorest countries of world. Though student participants lack access to the most basic survival resources (water, nutrition, medicine, and money), the satisfaction of the needs of relatedness, competence, and autonomy was found to be even more important for the development of intrinsic motivation (Van Egmond et al., 2017). In this current study, the role of perceived support of BPN highlighted the conditions that predicted intrinsic motivation and extrinsic motivation.

### The Relationship Between Extrinsic Motivation and Basic Psychological Needs

Organismic Integration Theory is a sub-theory of SDT that explains the relation between extrinsic motivations and basic psychological (Deci & Ryan, 1985). Organismic Integration Theory highlights four different ways extrinsically motivated behavior is regulated and the contexts in which they come about: external motivation, introjected motivation, identified regulation, and integrated regulation. These different types of motivation lay along a continuum of relative autonomy (Ryan & Connell, 1989). These authors found that differences in attitudes and adjustments were associated with the different types of extrinsic motivation. For example, the authors found that more students were externally regulated or more controlled the less they show interest, value, or effort, and the more they indicated a tendency to blame others, such as the teacher, for negative outcomes. Introjected regulation was positively related to expending effort, but was also related to more anxiety and to poorer coping with failures. Identified regulation was associated with greater enjoyment of school and more positive coping styles. Other result findings concerning types of extrinsic motivation showed that autonomous extrinsic motivation is associated with greater engagement (Connell & Wellborn, 1990), better



performance (Miserandino, 1996), less dropping out (Vallerand & Bissonnette, 1992), higher quality learning (Grolnick & Ryan, 1987), and greater psychological well-being (Sheldon et al., 2001), among other outcomes. Different from the previous studies, the present study used organismic integrated theory to highlight the influence of perceived support of BPN on external motivation, introjected regulation, and identified regulation to measure SAM.

### **Self-Determination Theory and Basic Psychological Needs: A Conceptual Framework**

Basic Psychological Needs Theory in SDT highlights how environmental factors can affect the integration and organization of the self through the working of three BPN: autonomy, competence, and relatedness (Deci & Ryan, 2000; Vallerand, 2000). Basic psychological needs have been the focus of research in numerous domains, such as education (Vansteenkiste et al., 2006), health care, sports and exercise (Edmunds et al., 2006). These three psychological needs represent the nutriments that are necessary for effective, healthy functioning of a human being (Ryan, 1995).

Autonomy refers to feelings of choice and action. Individuals need to feel that they may choose and implement their own actions. Competence refers to feelings of effectiveness. Individuals need to feel that they have some control over outcomes and that they have the ability to exert some impact on their environment. Relatedness refers to the experience of healthy social connection and satisfying social relationships. The three BPN are an integrated system that allocates a permanent feedback about the quality and function of person-environment interactions. Ultimately, environments that enhance the satisfaction of autonomy, competence, and relatedness needs produce self-regulated

behaviors and intrinsic motivation, whereas environments that impede these needs result in non-self-determined behaviors or extrinsic motivation (Faye & Sharpe, 2008).

### **Summary**

In summary, this literature review emphasized the influence of BPN and SS on SAM. Using SDT, previous research highlighted the influence of SS and BPN on academic motivation. According to the literature review, the influence of these psychosocial factors on academic motivation is essential if educational stakeholders plan to improve teaching and learning.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### **Introduction**

The present study investigated a theoretical model of the influence of the student BPN and student SS needs on SAM. Data were collected via a survey instrument from a group of students who were completing their Bachelor's programs (BP) in the FALSS at University of Ngaoundéré in Cameroon. This chapter has seven sections: the research design, population and sample of study, hypotheses, variable definitions, instrumentation, data collection procedures, and data analysis procedures.

#### **Research Design**

This study employed quantitative, non-experimental, correlational, and cross-sectional survey design to investigate the influence of student BPN and student SSs (TS and PS) on SAM. The study was quantitative because it transformed participants responses into numeric data for statistical analysis. One of the main reasons of using quantitative research was that it emphasized the use of the scientific method, based on a positivist worldview, via observation with the purpose of increasing the objectivity of data collection, data analysis, and interpretation of analysis (McMillan & Schumacher, 2010). This study was a non-experimental research design because it described the variables of the study and examined relationships between these variables “without any

direct manipulation of conditions” (McMillan & Schumacher, 2010, p 22). This study was correlational because it used an explanatory research design to predict and explain the association between or among variables (Creswell, 2012). This study used a cross-sectional survey design because the researcher selected a sample of participants and administered a questionnaire. Another aspect that made this a cross-sectional research design is that data were related to students’ current attitudes, opinions and beliefs, at a specific point in time (Creswell, 2012). Because of the research design and sampling process, the results of this study can be generalized to the population.

### **Population and Sample**

In this study, the population of study, also called the target population, was a group of individual students or participants to which the researcher intends to generalize the results of the research (McMillan & Schumacher, 2010). The target population for this study was composed of the first, second, and third year university students seeking a Bachelors’ degree in the Departments of History, Geography, Sociology and Anthropology in the FALSS at University of Ngaoundéré in Cameroon.

The present study used a cluster sampling, which is a method that gives an opportunity to the researcher to identify appropriate and naturally occurring groups, also called units of study, from the target population (McMillan & Schumacher, 2010). To conduct a quantitative study, Costello and Osborn (2004) pointed out that the sample would consist of a number of participants based on the subjects-to-variable ratio of 5:1. Given that the questionnaire is composed of 80 items, the sample would consist of a minimum of 400 participants ( $5:1 = 400:80$ ). The number of first-year students enrolled in the History Department was 240, in the Geography Department were 523, and in the

Sociology and Anthropology Department were 427. The number of second-year students in the History Department was 404, in the Geography Department were 726, and in the Sociology and Anthropology Department were 449. The number of third-year students in the History Department was 304, in the Geography Department were 414, and in the Sociology and Anthropology Department was 289 for the academic year 2016-2017. In total, 3,776 students comprised the population of potential participants in the research. Only the students enrolled in the first-year, second-year, and third-year level for the Departments of History, Geography, and Sociology/Anthropology were invited to participate. The sample consisted of 405 participants based on the number of students present when the questionnaire was administered. Therefore, 405 questionnaires were distributed, with 388 questionnaires turned in. After the process of cleaning the data, five cases with incomplete questionnaires were deleted resulting in a final sample of 383 participants. This represented a 94.6% response rate for the survey.

### **Research Hypothesis**

The research hypothesis of this study tested to see if the theoretical model of SAM was supported by the empirical data. The hypothesis was stated as follows: the theoretical covariance matrix equals the observed covariance matrix.

The theoretical model suggested direct effects from the latent variables Student SS and BPN, a direct causal relationship between BPN and SAM, and the indirect causal relationship between the latent variable of SS and SAM.

## **Definition of Variables**

The conceptual definition of variables, the instrumental definition of variables, and the operational definition of the variables was included in this study. Social Support variable was the only exogenous variable of the study. They were four latent endogenous variables: TS, PS, BPN, and the outcome variable of SAM. There were also thirteen observed variables: Autonomy Satisfaction, Competence Satisfaction, Social Relatedness Satisfaction, Teacher Autonomy Support, Teacher Competence Support, Teacher Social Relatedness Support (TSRS), Peer Autonomy Support, Peer Competence Support, Peer Social Relatedness Support (PSRS), Intrinsic Motivation, Identified Regulation, Introjected Regulation, and External Regulation. Appendix B includes a Table of Variables listing the variables and their definitions.

Resulting of the work of Deci and Ryan (2002), BPN was conceptually defined as a universal innate psychological need for competence, autonomy and social relatedness which are essential to ensure psychological health, development and well-being. The reasoning for using these three basic psychological was determined by the desire of promoting an effective and efficient student-learning environment for quality education. The latent variable BPN was measured by scores on 16 items from scales organized by Standage, Duda, and Ntoumanis (2005). Basic Psychological Needs included three subscales: competence, autonomy, and social relatedness. Responses to all items were summed to obtain the total score for the BPN Scale. The minimum score for the BPN Scale was 16 and the maximum value was 112.

Student Autonomy was conceptually defined as students' feelings or beliefs that students are the origin or source of their own behavior (Deci & Ryan, 2002). Autonomy

was instrumentally defined as six questions that will be measuring student autonomy variable from the scales organized by Standage et al. (2005) for BPN. Operationally, Items one through six measured the Autonomy Subscale with a minimum value of six and a maximum of 42. This variable was operationally defined as Arabic numerals and was entered as continuous data.

Competence was conceptually defined as students' feelings or beliefs that they are effective in their ongoing interactions within their social environments; they are experiencing opportunities to learn; and demonstrating their capacities (Deci & Ryan, 2002). Instrumentally, Competence was defined as five questions from the scales organized by Standage et al. (2005) measuring Student Competence. Operationally, questions seven through 11 measured the Autonomy Subscale with a minimum value of five and a maximum of 35.

Social Relatedness was conceptually defined as a feeling or belief of being connected to others; caring for and being cared for by those others and having a sense of belongingness outside or in the classroom (Deci & Ryan, 2002). Social Relatedness was instrumentally defined as five questions from the scales collated by Standage et al. (2005) measuring Student Social Relatedness. Operationally, questions 12-16 measured the Social Relatedness Subscale with a minimum value of five and a maximum of 35.

Social Support was conceptually defined as a feeling or belief that a student has from a teacher and a PS personal autonomy, competence, and social relatedness. The SS variable was instrumentally defined as 48 items from scales ordered by Standage et al. (2005) measuring Student SS Needs. Social support was composed of two sub-constructs: TS and PS.

Operationally, questions 17 through 65 measured SS. The minimum score for the SS Subscale was 48 and the maximum value was 336. This variable was entered as continuous data.

Teacher Support was conceptually defined as a feeling or belief that a student has from a TS of student personal autonomy, competence, and relatedness. Instrumentally, TS was defined as 24 questions from scales arranged by Standage et al. (2005). Teacher Support includes three subscales: Teacher Student Competence Support, Teacher Autonomy Support, and TSRS. Operationally, TS was calculated by summing the response values for items 17 through 40. The minimum score for the TS Subscale was 24 and the maximum value is 168.

Teacher Student Autonomy Support was conceptually defined as a feeling or belief that a student has from a TS of him for being the origin or source of his own behavior (Deci & Ryan, 2002). Instrumentally, it was 15 questions from the scales organized by Standage et al. (2005) teacher need support. Operationally, Teacher Autonomy Support was the scores of questions 17-31 measuring Teacher Autonomy Support with a minimum score of 15 and a maximum of 105.

Teacher Competence Support was conceptually defined as a feeling or belief that a student has from a TS of him for being effective in his ongoing interactions with the social environment and experiencing opportunities to learn and express personal capacities (Deci & Ryan, 2002). Teacher Competence Support was instrumentally defined as four questions from the scales utilized by Standage et al. (2005) measuring teacher need support. It was operationally defined as questions 32-35 measuring the Teacher Competence Support with a minimum score of four and a maximum score of 28.



Teacher Social Relatedness Support was conceptually defined as a feeling or belief that a student has from a TS of him for being connected to others; caring for and being cared for by those others and having a sense of belongingness outside or in the classroom (Deci & Ryan, 2002). It was instrumentally defined as five questions from the scales organized by Standage et al. (2005) measuring TSRS. It was operationally defined as 36-40 questions measuring Teacher Social Relatedness with a minimum score of five and a maximum score of 35.

Peer Support was conceptually defined as a feeling or belief that a student has from a PS of student personal autonomy, competence, and relatedness. Peer Support was instrumentally defined as 24 questions from scales organized by Standage et al. (2005) measuring Peer Student Support. Peer Student Support included three sub-scales: Peer Competence Support, Peer Autonomy Support, and PSRS. Peer Support was operationally defined as questions 41-65 measuring PS with a minimum score of 24 and a maximum score of 168. The variable was entered as continuous data.

Peer Autonomy Support was conceptually defined as a feeling or belief that a student has from a PS of him for being the origin or source of his own behavior (Deci & Ryan, 2002). Peer Autonomy Support was operationally defined as 15 questions from the scales arranged by Standage et al. (2005) measuring autonomy support from peer. Peer Autonomy Support was operationally defined as questions 41-55 measuring the Peer Autonomy Support a minimum score of 15 and a maximum of 105.

Peer Competence Support (PCS) was conceptually defined as a feeling or belief that a student has from a PS of him for being effective in his ongoing interactions with the social environment and experiencing opportunities to learn and express personal

capacities (Deci & Ryan, 2002). Peer Competence Support was instrumentally defined as four questions measuring Peer Student Competence Support from the scale utilized by Standage et al. (2005). Peer Competence Support was operationally defined as questions 56-59 measuring PCS with a minimum score of four and a maximum of 28.

Peer Social Relatedness Support was conceptually defined as a feeling or belief that a student has from a PS of him for being connected to others, caring for and being cared for by those others and having a sense of belongingness outside or in the classroom (Deci & Ryan, 2002). Peer Social Relatedness was instrumentally defined as five questions measuring Peer Student Social Relatedness Support from the scales organized by Standage et al. (2005). Peer social relatedness was operationally defined as questions 60-64 measuring PSRS with a minimum score of five and a maximum of 35.

Student Academic Motivation was conceptually defined as student self-determined innately controlled efforts, or struggles to succeed at academic tasks. Student Academic motivation has two characteristics: intrinsic and extrinsic motivation (Bandura, 1997). Student Academic Motivation was instrumentally defined as 16 questions from the scales collated by Standage et al. (2005). Student Academic Motivation was comprised of Intrinsic Motivation and Extrinsic Motivation. Student Academic Motivation was operationally defined as questions 65-80 measuring SAM with a minimum score of 16 and a maximum of 112.

Intrinsic Motivation was conceptually defined as feelings of satisfaction and pleasure that arise directly from various activities. It was instrumentally defined as four questions from a scale organized by Standage et al. (2005) measuring Intrinsic

Motivation. Intrinsic Motivation was operationally defined as questions 65-68 measuring Intrinsic Motivation with a minimum score of four and a maximum of 28.

Identified Regulation or autonomous regulation was conceptually defined as a motivation to succeed that is inspired by a deep interest and desire to learn because of its significance or value. Identified Regulation was instrumentally defined as four questions from a scale utilized by Standage et al. (2005) measuring Identified Regulation. Identified Motivation was operationally defined as questions 69-72 measuring Identified Regulation with a minimum score of four and a maximum of 28.

Introjected Regulation was conceptually defined as student desire to achieve that is inspired by feelings of guilt, shame, or egocentric feelings. Introjected Regulation was instrumentally defined as four questions from a scale utilized by Standage et al. (2005). Introjected Regulation was operationally defined as questions 73-76 measuring Introjected Regulation with a minimum score of four and a maximum of 28.

Student External Regulation or controlled motivation was conceptually defined as an internal motivation to achieve that is stimulated by external pressure and not autonomous in nature (Vansteenkiste et al. 2009). Student External Motivation was instrumentally defined as four questions from a scale organized by Standage et al. (2005) measuring Student External Regulation. Student External motivation was operationally defined as questions 77-80 measuring Student External Regulation with a minimum score of four and a maximum of 28.

### **Instrumentation**

Instrumentation for this study consisted of a questionnaire made up of three scales that measuring the predictor variable of social, the mediating variable of BPN, and the

outcome variable of SAM. These instruments were a modified-version of the scales used in the questionnaire collated and utilized by Standage et al. (2005). The questionnaire was divided into four parts: (1) Demographic Characteristics of Students (gender, age, subject area, and level of study), (2) Student BPN, (3) SS, and (4) SAM Scale. Responses were made on a 7-point Likert-type scale anchored by 1 (strongly disagree), 2 (disagree), 3 (not sure, but tend to disagree), 4 (undecided), 5 (not sure, but tend to agree), 6 (agree), and 7 (strongly agree). Appendix A includes a sample of the instruments that were administered to respondents.

#### Basic Psychological Needs Satisfaction Scale

To measure the degree to which the participants experienced the satisfaction of the three psychological needs, three sub-scales were used: Autonomy sub-scale, competence sub-scale, and social relatedness sub-scale using the adapted-version of Student BPNS scale collated by Standage et al. (2005).

The autonomy sub-scale measured respondents' sense of autonomy using six items. Participants responded to the items (e.g. 'I have some choice in what I want to do' and, 'I have a say regarding what skills I want to practice') in a positive direction, preceded by the stem 'In the BP classes'. Reworded to target the BP class' context, responses will be indicated on a 7-point Likert-type scale anchored by 1 (strongly disagree) to 7 (strongly agree).

The competence sub-scale assessed perceived competence towards the BP class using the five items from the perceived competence sub-scale of Standage et al. (2005). An example item from the competence subscale is, "I am pretty skilled in taking Bachelor program class." Reworded to target the BP class' context, responses will be

indicated on a 7-point Likert-type scale anchored by 1 (strongly disagree) to 7 (strongly agree).

The relatedness sub-scale assessed students' acceptance by other students using five items (Standage et al., 2005). Originally developed and collated by Standage et al. (2005), the stem was modified in the present study to ask the question, "with the other students in my BP class I feel:" in a positive direction. The stem was followed by five items such as close, valued, and supported to which the participants responded on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Scores from these three sub-scales were used, as indicators for the latent factor Student BPNS.

#### Social Support Scale

To measure the degree to which student participants perceived SS to support their autonomy, competence, and relatedness in the BP, this study used 24 items from the SS Scale. This scale was composed of three sub-scales: The Autonomy Support sub-scale, the Competence sub-scale, and the Relatedness sub-scale. The SS Scale was adapted from the Student BPNS scale collated by Standage et al. (2005). These three sub-scales measured TS and PS separately. Scores from these three sub-scales was used, as indicators for the latent variables TS and Peer Student. Teacher autonomy sub-scale measured teacher autonomy support using 15 items, while peer autonomy sub-scale measured peer autonomy support using also 15 items. Teacher competence sub-scale measured teacher autonomy support using four items, while peer competence sub-scale measured peer competence using also four items. To assess relatedness student participants responded to five items for teacher relatedness support sub-scale and five items for peer relatedness support sub-scale. Student respondents used a 7-point Liker

scale anchored by 1 (strongly disagree) to 7 (strongly agree) to respond to all items. The stem, “In Bachelors’ Program” preceded all the items. Example items are: “we feel that the Bachelor’s Program instructors provide us with choices and options in class” (autonomy support), “the BP instructors makes us feel like we are able to do the activities in class” (competence support), and “we feel that the BP instructors encourage us to work together in class activities” (relatedness support). Scores from these three sub-scales will be used as indicators for latent variables TS and PS.

#### Student Academic Motivation Scale

This study used the SAM Scale to measure the degree to which student respondents perceive they are motivated in the BP classes. The SAM scale is composed of four sub-scales: the External Regulation sub-scale, the Introjected Regulation sub-scale, the Identified Regulation sub-scale, and the Intrinsic Motivation sub-scale. Each sub-scale is composed of four items. The SAM Scale was adapted from the SAM Scale organized by Standage et al. (2005). Participants will be asked to respond to the items using the stem, “I take part in this BP class...” Example items (four for each subscale) are “because BP is fun” (intrinsic motivation), “because it is important for me to do well in BP” (identified regulation), “because I’ll feel bad about myself if I didn’t” (introjected regulation), and “because I’ll get into trouble if I don’t” (external regulation). Responses will be made on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

## **Data Collection Procedures**

### **Survey Method**

This study used a survey method for data collection. The purpose of the survey method is to collect information from a population sample of study. Following scientific procedures, the information collected would help to make generalizations from a sample to a population (Creswell, 2012). Data for this study was collected using self-administered questionnaires through which respondents fill out the questionnaire independently. Data collection was completed by the end of December 2017.

### **Human Subjects Research**

Before processing with data collection, Andrews University Institutional Review Board granted approval to the researcher (Appendix C). This was to make sure that the study under investigation ensured protection and rights of human subjects. In addition, as the study was conducted in Cameroon, the researcher obtained permission from University of Ngaoundéré (Appendix D).

### **Survey Administration**

After obtaining permission from the Andrews University Institutional Review Board and University of Ngaoundéré in the beginning of September 2017, the primary researcher printed and mailed the questionnaires, the consent letters, the recruitment letters, and the flyers to Cameroon (Appendix E). The primary researcher hired an assistant researcher and her research team to administer the questionnaires. The assistant researcher was a doctoral student and her team was made of three other students in the Master's program enrolled at University of Ngaoundéré. From November 20 to

November 30, prior to the questionnaire administration process, the primary researcher trained the assistant researcher and her team regarding the survey organization, data protection, and questionnaires mailing procedures to minimize any eventual risks.

The research team completed the administration of surveys using three phases over a three-week period from December 1, to December 22. During the first week, students in the Department of History took the surveys. During the second week, students in the Department of Geography took the surveys. During the third week, students of the Department of Sociology/Anthropology took the surveys. The surveys took place in the classrooms of the Departments involved in the research. Before the survey administration, participants were invited to participate in the research through the flyers posted on week prior to the questionnaire administration in all over the University campus. During the survey administration process, participants were given the opportunity to read the informed consent form and ask questions before filling out the questionnaires. Participants were also informed that their participation was voluntary, and that they could withdraw from the study at any time. The questionnaire administration took about 30-40 minutes.

Before administering the questionnaires, the research team let students know that it was only students who were enrolled in the Departments of History, Geography, and Sociology/Anthropology that were able to take part to the study. Also, information was giving to the participants that they had to make sure that they fill the questionnaire only one time either they were at level 1, level 2, or level 3 of each of the Departments involved or they were at one of the three levels but are retaking some classes in the former levels. This helped to avoid the risk of multiple administrations of the



questionnaires to students who had already taken it in the previous administration sessions. In addition, the research team told to student participants that completion of the questionnaire implied full approval of participating to the study.

During the three phases of the questionnaire administration, only the assistant researcher was responsible for collecting the data, and for protecting and securing it. Every time that the assistant researcher had access to the completed questionnaires, she immediately placed them into a sealed envelope on completion.

Confidentiality was maintained by using the procedure of implied consent that consisted of asking participants to fill out questionnaires without signing their names. This helped to avoid the risk of the participants' names identification in the questionnaires by the research team members, which also allowed later to enter data into database without personal identifiers. During the data collection procedure, only the assistant researcher had access to this document, which was stored in a secure storage area in the assistant researcher's office. After the third phase and upon full completion of administration of surveys, the assistant researcher placed the whole questionnaires completed and sealed into envelopes into the box and mailed it to the primary researcher on December 25, 2017.

### **Data Analysis Procedures**

This section describes the data entry and cleaning steps to prepare data analysis and describe the data analysis technique employed to answer the research question.

### Data Entry

After naming and defining the variables in the study, IBM Statistical Package for the Social Sciences (SPSS) version 25 was employed to enter the data into the data editor. Scores for each item on the three instruments (SS Scale, BPN Scale, and SAM Scale) and the background information of student participants in the study were scanned using Scantron form recognition software.

### Data Cleaning

After the transcription of the values entered into the SPSS data file the data were analyzed in order to ensure that there were no missing cases into the dataset. The researcher used frequency tables in SPSS to identify missing data. Missing cases were analyzed finding that items had between 25-35 missing cases for a total of 150 participants with at least one missing case. In order to solve this issue, Median Imputation was applied (five cases were deleted). The final dataset consisted of 383 cases.

### Structural Equation Modeling

The data analysis technique employed in the study is SEM to test the research hypothesis. Structure Equation Modeling is a statistical technique used for analyzing both structural models and measurement models (Meyers, Gamst, & Guarino, 2017). The measurement model assesses the degree to which the predicted relationships between and among the variables are reflected in the relationships between and among the observed variables. The structural model assesses the extent of the relationship among latent variables as well as the relationship among other measured variables.

The present study focused on analyzing the structural model and tested the validity of the hypothesized structural model compared to the observed model. Subsequently, the following criteria was used to measure model fit (Meyers et al., 2017): The chi-square ( $\chi^2$ ) likelihood ratio statistic, the goodness of fit index (GFI), the normed fit index (NFI), the comparative fit index (CFI), and the standardized root mean residual (SRMR). The chi-square ( $\chi^2$ ) likelihood ratio statistics is the most significant absolute fit index, and tests for the difference between the theoretical model and the empirical model (Meyers et al., 2017). A significant  $\chi^2$  indicates that the theoretical model does not fit the empirical data, while a non-significant  $\chi^2$  indicates a good fit. This study hypothesizes that the theoretical model does fit the empirical, which represents the null hypothesis (Ho) of the study (Schumacher & Lomax, 2004). The GFI is similar to the  $R^2$  in multiple regression because it measures the model variances and covariances. When the values of GFI are equal to or greater than .90, this implies a good model fit (Khine, Ping, & Cunningham, 2013). The NFI analyzes the difference between the chi-square values of the hypothesized model and the null model. The target value for the NFI is .90. The CFI analyzes differences between the empirical data and the theoretical model. The target value CFI is .90, which indicates a good fit. The SRMR measures standardized residual between the observed covariance and the covariance of the hypothesized model (Meyers et al., 2017). Certainly, the structural equation model was used to explain the hypothesized model if the data from the hypothesized and observed models match. Consequently, the nature of the research hypothesis suggested the reason serving to account for the use of SEM as a data analysis technique.

## CHAPTER 4

### RESULTS

#### **Introduction**

The purpose of this study was to determine what relationships existed between SS, BPN, and SAM of college students at University of Ngaoundéré. In addition, the researcher examined whether the proposed theoretical model of the study fits the data. The research question is formulated as follows: “is the hypothesized model showing SS through the mediating variable of BPN could predict SAM, SS could predict BPN, and BPN could predict SAM supported by the data?” Structural equation modeling using SPSS AMOS Graphics version 25.0 was the statistical technique used to test the theoretical linkages and the directions of significant relationships between latent variables in the study’s hypothesized model.

This chapter reported the sample description, the variable description, the scales validation, the hypothesis testing which presented the results of the analysis of the original structural model, and then its re-specification. Also, inferential statistics included an assessment of the model fit, using Chi-square and fit indices such as, CFI, NFI, GFI, and SRMR to determine the goodness of fit between the covariance matrix of the theoretical model with that of the empirical model. Finally, there was an analysis of the model estimates in order to determine if the hypothesized relationships between the variables emerged as expected.

## **Description of Sample**

This study focused on students enrolled in the BP in the Departments of History, Geography, Sociology and Anthropology in FALSS at University of Ngaoundéré in Cameroon. Demographic representation of the 383 participants is presented in Table 1 to indicate the percentage of participation of students according to their gender, age, level of study, and area of specialization. In relation to genre, there were more males (64.5%) than females (35.5%). In regard to age, 71.8% students were between 19 to 24 years of age. In relation to area of specialization, 33.9% of participants were enrolled in the Sociology and Anthropology Department, 36.3% were enrolled in the Geography Department, and 29.8% were enrolled in the History Department. Finally, in regard to the level of study, the largest number of students (41.2%) were enrolled in their first year of study.

## **Description Statistics of the Variables**

The descriptive statistics of thirteen variables of this study are shown in Table 2. They include the mean and standard deviation of the observed variables. For the variable Autonomy Satisfaction, the participants have an overall scores ( $M = 5.20$ ,  $SD = 1.06$ ); for competence satisfaction ( $M = 5.09$ ,  $SD = 1.05$ ); for social relatedness ( $M = 5.31$ ,  $SD = 1.20$ ); for teacher autonomy support ( $M = 5.13$ ,  $SD = .96$ ); for teacher competence support ( $M = 5.48$ ,  $SD = 1.11$ ); for TSRS ( $M = 5.35$ ,  $SD = 1.14$ ); for peer autonomy support ( $M = 5.10$ ,  $SD = .98$ ); for peer competence support ( $M = 5.33$ ,  $SD = 1.15$ ); for PSRS ( $M = 5.32$ ,  $SD = 1.12$ ); for intrinsic motivation ( $M = 5.56$ ,  $SD = 1.15$ ); for identified regulation ( $M = 5.87$ ,  $SD = 1.11$ ); for introjected regulation ( $M = 4.72$ ,  $SD = 1.42$ ); for external regulation ( $M = 4.80$ ,  $SD = 1.45$ ). These mean scores were computed

Table 1

*Participant Demographic Characteristics (N=383)*

Variable	Categories	N	Percentage
Gender	Female	136	35.5
	Male	247	64.5
Age	<19 years	31	8.1
	19-24 years	275	71.8
	31-36 years	5	1.3
	37-42 years	1	.3
Specialization	History	114	29.8
	Geography	139	36.3
	Socio-Antropo	130	33.9
Level of Study	First-year	158	41.2
	Second-year	132	34.5
	Third-year	93	24.3

on a Likert scale of 1 to 7 with 1 representing Strongly Disagree and 7 representing Strongly Agree. Of the thirteen scales, the introjected mean score received the lowest score.

### Variable Correlation

The results of the variable correlation are reported in Table 3. Very weak correlations ( $r = .11, p < .05$ ) were found between autonomy satisfaction and external regulation. External regulation and competence satisfaction were very weakly correlated ( $r = .16, p < .50$ ). External regulation and social relatedness were very weakly correlated ( $r = .18, p < .05$ ). Introjected regulation and autonomy satisfaction were very weakly

Table 2

*Mean and Standard Deviation for the Variables in the Study (N=383)*

Variable	Mean	SD
Autonomy Satisfaction	5.20	1.06
Competence Satisfaction	5.09	1.05
Social Relatedness	5.31	1.20
Teacher Competence Support	5.48	1.11
Teacher Social Relatedness	5.35	1.14
Peer Autonomy Support	5.10	0.98
Peer Competence Support	5.33	1.15
Peer Social Relatedness	5.32	1.12
Intrinsic Motivation	5.51	1.15
Identified Regulation	5.87	1.11
Introjected Regulation	4.72	1.42
Teacher Autonomy Support	5.13	0.96
External Regulation	4.80	1.45

correlated ( $r = .12, p = .05$ ). Introjected regulation and teacher competence support were also very weakly correlated ( $r = .16, p = .05$ ). Overall, there are weak correlations between BPN and SAM in regard to external motivation and introjected motivation variables. On the contrary, BPN are strongly correlated with intrinsic motivation and identified motivation variables. In addition, the results of correlation table indicate that TS and PS of autonomy, competence, and social relatedness variables are statistically

Table 3

*Correlation Matrix for the Variables in the Study (N=383)*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. AutoSat	.01												
2. CompetSat	.51	.01											
3. SocRelat	.51	.56	.01										
4. TeachCompSup	.33	.34	.48	.01									
5. TeachSocRelSup	.31	.36	.45	.69	.01								
6. PeerAutoSup	.31	.37	.42	.49	.63	.01							
7. PeerCompSup	.32	.28	.38	.49	.43	.50	.01						
8. PeerSocRelSup	.31	.26	.36	.41	.45	.46	.72	.01					
9. IntMot	.26	.26	.30	.38	.33	.36	.50	.54	.01				
10. IdenReg	.24	.28	.40	.38	.35	.39	.50	.50	.63	.01			
11. IntroReg	.12	.25	.25	.16	.26	.32	.29	.27	.36	.28	.01		
12. TeachAutoSup	.38	.45	.56	.67	.60	.62	.48	.49	.35	.39	.22	.01	
13. ExterReg	.11	.16	.18	.13	.20	.30	.24	.21	.20	.25	.60	.23	.01

\*. Correlation is significant at the 0.05 level (2-tailed).



Significant and positively correlated to each other and to intrinsic motivation, and identified regulation.

### **Scales Validation**

Before testing to the hypothesis, the researcher tested the construct validity and reliability of the scales used in the study. To meet this need, Exploratory/Confirmatory Factor Analysis was conducted (see Table 4). Results indicated the need to delete item 4 (Autonomy Satisfaction), item 11 (Competence Satisfaction), items 17, 18, 19, 28, 29, 30, 31 (Teacher Autonomy Support), and items 41, 52, 54, 55 (Peer Autonomy Support) due to lack of reliability ( $R^2 < .30$ ).

In addition, the internal consistency of the thirteen scales of the study was established by computing the Cronbach Alpha coefficient. A value of .70 is considered a lower bound level of acceptability (Nunnally, 1978). The reliability statistics were relatively acceptable, indicating internal consistency among the items. Scales alphas (reliability) are as follows: Autonomy Satisfaction = .70; Competence Satisfaction = .78; Satisfaction Social Relatedness = .83; Teacher Autonomy Support = .88; Teacher Competence Support = .78; Teacher Social Relatedness = .78 Peer Autonomy Support = .90; Peer Competence Support = .80; Peer Social Relatedness = .80; Intrinsic Motivation = .76; Identified Regulation = .84, Introjected Regulation = .76, and External Regulation = .76.

### **Hypothesis Testing**

The research hypothesis tested whether the theoretical model of SAM was supported by the empirical data and was stated as follows: “The theoretical covariance

Table 4

*Confirmatory Factor Analysis Fit Indices for the Validity and Reliability of the Scales*

Scale	$\chi^2$	CFI	NFI	GFI	IFI	SRMR	DC
Autonomy Satisfaction	10.565	.98	.96	.99	.98	.03	
Competence Satisfaction	18.428	.96	.96	.98	.96	.04	
Social Relatedness Satisfaction	8.950	.99	.99	.99	.99	.01	
Teacher Autonomy Support	91.365	.95	.93	.94	.95	.04	
Teacher Competence Support	10.822	.99	.96	.99	.98	.02	
Teacher Social Relatedness Support	51.412	.91	.91	.95	.92	.05	
Peer Autonomy Support	214.041	.91	.89	.90	.91	.01	
Peer Competence Support	1.797	1	1	1	1	.01	
Intrinsic Motivation	15.057	.97	.96	.98	.97	.03	
Identified Regulation	3.169	1	1	1	1	.01	1
Introjected Regulation	26.452	.94	.93	.98	.94	.05	1
External Regulation	37.652	.91	.91	.95	.91	.05	3
Peer Social Relatedness Support	32.140	.95	.95	.97	.95	.04	

matrix equals the observed covariance matrix.” The hypothesized model of the study showed that SS through the mediation of BPN could predict SAM, SS could predict BPN, and BPN could predict SAM. Following a structural model path, this study hypothesized a direct effect of the predictor variable of SS on the mediating variable of BPN, the direct effect of mediating variable of BPN on the outcome variable of SAM, and the indirect effect of the predictor variable of SS on the outcome variable of SAM. Also, the re-specified model added on a direct causal path between PS and SAM.

The data analysis involved the use of SEM, which was a statistical technique of analysis for the estimation of the parameters. This model fitting technique permitted the simultaneous analysis for both the measurement and the structural models. The covariance matrix of the measurement model fitted the covariance matrix of the structural model as evidenced by the fit statistics.

The structural model was evaluated using five criteria: The chi-square ( $\chi^2$ ) likelihood ratio statistic, the GFI, the NFI, the CFI, and the SRMR. The chi-square test of the model was 482.62 ( $DF = 61; p = .000$ ) with ( $CMIN/DF = 7.91$ ) and statistically significant. This indicated that the model lacked goodness of fit with the data. Also, the model did not yield adequate fit indices for CFI = .82, GFI = .84, and NFI = .80, which were below the recommended target value of .95 and even acceptable target value of .90 for each of these indices. At the same time, the SRMR value was .09, which should not be above the target value of .05. (See Appendix C for fit statistics). Based on these results, the null hypothesis that the theoretical covariance matrix is equal to the observed covariance matrix was not retained. The fit indices of the initial model are shown in Table 5.

Table 5

*Chi-square and Fit Indices of the Original Observed Model and the Adjusted Model*  
(N = 383)

Model	$\chi^2$	CFI	NFI	GFI	IFI	SRMR	RMSEA LO90-HI90
Initial	482.623 (DF=61)	.82	.80	.84	.83	.09	.12-.15
Adjusted	128.094 (DF=55)	.97	.95	.95	.97	.05	.05-.07

### **Hypothesis Testing of Re-Specified Model**

As the original structural model, after evaluation, did not fit the data the researcher proceeded with the new step of hypothesis testing for model re-specification. The purpose of this step was to proceed with the solution of modification indices using SPSS AMOS Version 25. This process was to identify the number of underlying factors influencing variance and correlation among variables. Therefore, six parameters were added to the initial model of the study. There were added correlations between the error terms e8 and e17, between the error terms e9 and e17, between the error terms e6 and e12, between the error terms e5 and e10, and between the error terms e4 and e12.

In addition, there was a direct effect added from the latent variable of PS on the outcome variable of SAM that was significant and was not included in the original model. This makes sense because theoretical linkages exist that show that student-to-student relationships are vigorous and meaningful to influence student decision making toward learning (see Figure 2).

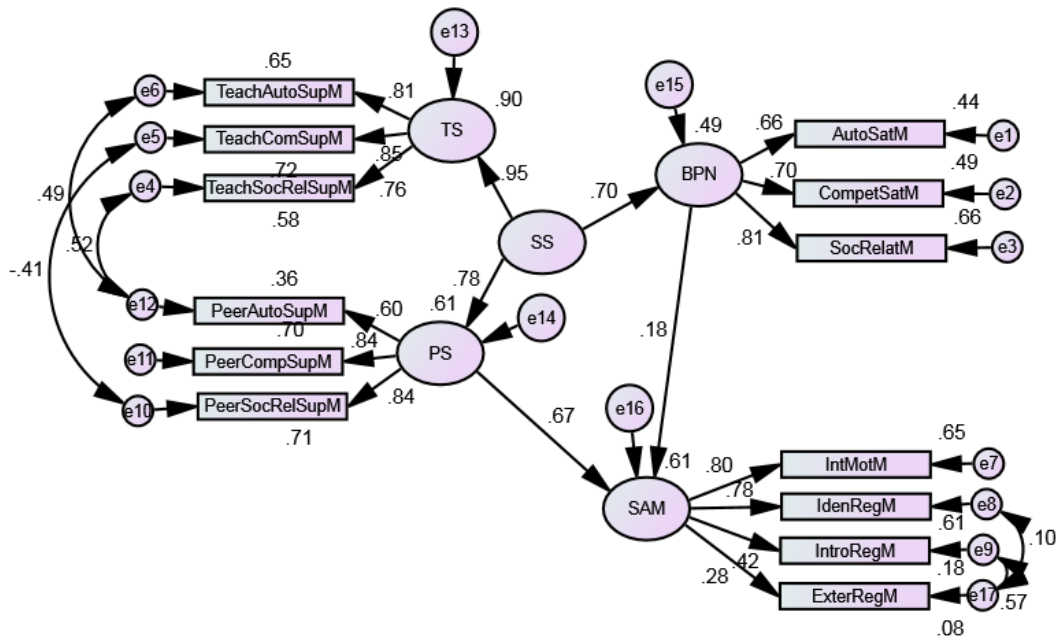


Figure 2. Re-Specified Model of Predictive Relationships of SAM

The re-specified model resulted in a significantly improved fit with the observed data as evidenced by the fit statistics. The model is presented in Figure 2. While the Chi Square was still statistically significant, it had decreased from 482.623 ( $DF = 61$ ;  $p < .001$ ) to 128.094 ( $DF = 55$ ;  $p < .001$ ). Additionally, the GFI increased from .84 to .95, the CFI had increased from .82 to .97, the NFI from .80 to .95, and the SRMR decreased from .09 to .05. These fit indices are adequate and indicate a very good fit of the model with the data (see Table 5).

### Analysis of the Model

#### Analysis of the Re-Specified Relationship

As the original model was adjusted the model is analyzed for confirmation of the direct effect from SS on basic psychological need, the direct effect from BPN on SAM,

the indirect effect from SS on SAM, and the new added direct effect from PS on SAM. Following the re-specification paths of the model, there are relatively strong path coefficients for the structural model. There are two predictors with direct effect on SAM: PS and BPN. Peer support is the strongest predictor for the outcome variable of SAM with a statistically significant coefficient of .67. The direct path coefficient from the mediating variable of BPN to the outcome variable of SAM is weak with a coefficient of .18. The direct path coefficient from the predictor variable of SS to the mediating variable of BPN is also strongly positive and statistically significant with a coefficient of .70. This indicates that the mediating variable of BPN is a potential contributor to academic motivation. The total indirect effect from the exogenous variable of SS to the outcome variable of SAM is also .65.

The interpretation of the structural model indicates that, following the results from the squared multiple correlations, the exogenous variable of SS accounts for approximately 49% of the variance in the mediating variable of BPN. The outcome variable of SAM is influenced by the direct effect of the latent variable of PS, which accounts for approximately 44% of the variance in SAM, while the total indirect effect of the exogenous variable of SS accounts for approximately 40% of the variance in SAM.

### **Summary of Results**

This chapter summarizes the analysis of the data used to examine the relationships between and among the variables. The broad research question asked: “Is the hypothesized model showing SS and BPN could predict SAM, SS could predict BPN, and BPN could predict SAM supported by the data? This hypothesis sought to determine if the covariance matrix represented by the hypothesized model is equal to the covariance

matrix of the empirical covariance matrix. Structural equation modeling analysis showed that the original model did not fit the data.

None of the fit statistics provided any confirmation of the hypothesis that the initial model would fit the observed data. Even though the path coefficients between the latent variables were positive, strong, and statistically significant, the fit indices did not reach the critical values of goodness of fit. As all the fit indices indicated that the hypothesized model did not match the empirical data, the researcher, through exploratory analysis, re-specified the model, which provided the best goodness-of-fit indices that were a reasonable model fit for the observed data.

In the adjusted model, the correlation between PS and SAM was added in the structural model of the study. Results in the adjusted model indicated a strong, positive, and statistically significant correlation between the latent variable of PS with a coefficient of .67 and SAM. The indirect effect from SS on SAM was also statistically strong and positive with a coefficient of .65. The association between PS and SAM weakened the direct effect from the mediating variable of BPN on the outcome variable of SAM with a coefficient of .18.

The final chapter which follows shows a synopsis of the major sections of the dissertation, including the summary of the literature review, the restatement of the problem, the purpose of the study, the research method, and summary of findings, and discussion of the major findings and conclusions that were drawn from these findings. In addition, limitations of the study are presented, recommendations and implications and general recommendations for future studies and practice are suggested.

## CHAPTER 5

### SUMMARY, FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

#### **Introduction**

This Chapter presents a summary of the review of the literature, restates the research problem, and research method of the study. Also, this Chapter provides the summary of key findings from the study, and discussions in the context of the literature. At the end, the Chapter presents, conclusions, limitations, and recommendations for future research and implications for practice.

#### **Summary of the Literature Review**

The literature review sought to establish a theoretical and empirical basis for the study, and examined prior studies relevant to the influence of SS and BPN on SAM. The first section of the literature described how student motivation is grounded in the theoretical framework of SDT. The second one pointed at the influence of BPNS on student motivation. The third one showed the influence of the social needs support on SAM.

#### Student Academic Motivation Grounded in Self-Determination Theory

Self-Determination Theory is a comprehensive theoretical framework that addresses the personal and environmental factors that cause different forms of motivation



in various settings (Deci & Ryan, 1985, 1991a; Ryan & Deci, 2002). The purpose of SDT consists of bringing theoretical contributions that allow human beings to have control over their environment. At the heart of SDT is the premise that humans are innately active and are driven by their pursuit to satisfy the psychological needs of autonomy, competence, and relatedness (Ryan & Deci, 2000b). As SDT predicts, when the psychological needs of autonomy, competence, and relatedness are satisfied, individuals are more likely to initiate and sustain in a wide range of behaviors (Rejeski et al., 2006; Vallerand & Losier, 1999).

Self-Determination Theory is composed of five different sub-theories that describe the genesis of intrinsic motivation, extrinsic motivation, and amotivation: (1) the CET; (Deci & Ryan, 1980), (2) the Organismic Integration Theory (Deci & Ryan, 1991a; Ryan & Deci, 2002), (3) the BNT (Deci & Ryan, 1985; Ryan & Deci, 2002), (4) the Causality Orientation Theory (Deci & Ryan, 1985), (5) and the Goal Content Theory (Vansteenkiste et al., 2006). Self-Determination Theory highlights the self-regulation and volitional behavior regardless of culture or stage of human development (Ryan & Deci, 2000b). The first three sub-theories of SDT (the BPN Theory, the CET, and the organismic Orientation Theory) constitute the basis of the theoretical framework in this study.

Basic Psychological Needs Theory describes how environmental factors can affect the integration and organization of the self through the working of three BPN: autonomy, competence, and relatedness (Deci & Ryan, 2000). These three psychological needs represent the nutrients that are necessary for effective, healthy functioning of a human being (Ryan, 1995). Cognitive Evaluation Theory is designated to explain the

influences social and interpersonal interactions either enhance or hinder intrinsic motivation (Deci, 1975; Niemiec & Ryan, 2009). Cognitive Evaluation Theory highlights the role of competence to intrinsic motivation, and states that events that are perceived to detract from social contexts will lessen intrinsic motivation. Organismic Integration Theory is a sub-theory of SDT that deals with the explanation of extrinsic motivation. It describes four different ways extrinsically motivated behavior is regulated and the contexts in which they come about.

Therefore, in this literature review, the researcher utilized these three sub-theories of SDT that form the theoretical framework of this study in order to explain the relationships between BPN, SS and SAM.

#### Influence of Basic Psychological Needs Satisfaction on Student Academic Motivation

The influence of the BPN on student intrinsic and extrinsic motivation is shown through differences and adjustment in attitudes, feelings, knowledge, beliefs, and practices that students express outside or in the classroom (Deci & Ryan, 2002). A substantial amount of research has examined the relationship of BPN satisfaction- autonomy, competence, and relatedness- with intrinsic motivation and the subtypes of extrinsic motivation-identified regulation, introjected regulation, external regulation motivation, and amotivation (e.g. Baumeister & Leary, 1995; Deci & Ryan, 1991a; Dewey, 1916; Lepper & Henderlong, 2000; Pintrich & Schunk, 2002; Reeve, 2006; Ryan & Grolnick, 1986; White, 1959). Research indicated that both intrinsic motivation and self-determined/autonomous motivation are strongly correlated with autonomy

satisfaction, competence satisfaction and relatedness satisfaction as well as school activities levels (Vallerand & Losier, 1999).

Lepper and Hodell (1989) pointed out four individual factors that influence intrinsic motivation. This includes challenge (where the learner is motivated to attain a goal), curiosity (where the learner is motivated by a physical stimulus or by a cognitive discrepancy), control (where the learner is motivated by the need to be in control of his/her environment), and fantasy (where learners are motivated by mental images of situations not actually present). Also, students' intrinsic motivation is enhanced when educational practices promote their innate psychological needs, especially a sense of personal autonomy and ability to learn, when schoolwork is challenging and relevant to students, and when the interactions between teachers and students are positive (Lepper & Henderlong, 2000; Pintrich & Schunk, 2002).

While some important variation exists (e.g. Nisan, 1992), there seems to be a wide-spread consensus among researchers and educators that BPN are beneficial for enhancing intrinsic motivation among students. Research found that the more students were externally regulated the less they show interest, value, or effort, and the more they indicated a tendency to blame teachers such as teacher for negative outcomes (Ryan & Connell, 1989). These authors found that when introjected regulation was positively related to expending effort, but was also related to more anxiety and to poorer coping with failures because of limited autonomy in the class activities. Identified regulation was associated with greater enjoyment of school and more positive coping styles because of the greater level of autonomy students have when the practice school activities.

Findings concerning types of extrinsic motivation, showed that more autonomous motivation/identified motivation is associated with greater engagement (Connell & Wellborn, 1990), better performance (Miserandino, 1996), less dropping out (Vallerand & Bissonnette, 1992), higher quality learning (Grolnick & Ryan, 1987), and greater psychological well-being (Sheldon & Kasser, 2001), among other outcomes. Finally, intrinsic and self-determined extrinsic motivations are associated with higher satisfaction of psychological needs than non-self-determined extrinsic motivation-introjected regulation, external regulation, and amotivation (Deci et al., 1991).

#### Influence of Social Needs Support on Student Academic Motivation

The influence of the social needs support (TS of BPN and PS of BPN) on student intrinsic and extrinsic motivation is also shown through differences and adjustment in attitudes, feelings, knowledge, and beliefs that these students express in the classroom. A substantial amount of research has examined the relationship of social needs support with intrinsic motivation and the subtypes of extrinsic motivation (Deci et al., 1981; Green & Foster, 1986; Jang et al., 2010; Skinner & Belmont, 1993). Two main factors influence social needs support: Teacher needs support and peer need support.

#### Influence of Teacher Needs Support on Student Motivation

The influence of TS of BPN is a key element in determining the nature of student motivation. The quality of the relationship between BPN and SS explains the quality of student motivation. Students' level of motivation and participation, whether or not in class, is influenced by student- teacher relationships and interactions (Skinner &

Belmont, 1993). In addition to accumulating experiences of mastery, the development of a sense of competence also depends on the feedback one receives from others and particularly from teachers (Jang et al., 2010).

Research has found that negative feedback significantly undermines one's sense of efficacy. Studies revealed that students of autonomy-oriented teachers tend to be more intrinsically motivated (Deci et al., 1981; Green & Foster, 1986) and perceive themselves as more competent than students of control-oriented teachers. Also, responsive teaching promoting teacher-student relationships and grounded in care and connectedness increases intrinsic and autonomous motivation (Noddings, 2005; Roorda et al., 2011).

Students view teachers as “caring” if they model caring behaviors, including connecting with students by getting to know them personally; valuing and modeling empathy in interactions with students; treating students with respect; fostering a socially supportive classroom environment; and providing constructive feedback and support (Cushman & Rogers, 2008; Wentzel & Looney, 2010). Research demonstrated that TS, to be effective and efficient in the classroom, should be absolutely in compliance with student effort, classroom rules, and applying self-determination strategies (Ryan & Patrick, 2001).

#### Influence of Peer Needs Support on Student Academic Motivation

Research showed that peer needs support influences student motivation. In general, students who surround themselves with peers who value learning and academic activities will also value their own learning and strive to enhance their education because of the role of positive interaction effects in the life of these peers (Kennedy, Smita, &

Dale, 1997). The idea that college peers have an influence on individual students has been strongly supported. In this vein, Checkering (1969, p. 253) stated: “A student’s most important teacher is another student.” Research on peer-group learning has reported that PS increases not only achievement but also motivation-related variables such as intrinsic interest and self-efficacy (Nichols, 1996; Nichols & Miller, 1994).

Research on peer-group learning has shown it to be effective in increasing motivation and students’ levels of achievement (Johnson & Johnson, 1984; Slavin, 1991, 1996). One major view of the effects of peer-group learning on achievement is the motivational perspective. Studies suggest that peers can provide students with emotional and tutorial learning support (Nichols & Miller, 1994), which is likely to develop their intrinsic motivation.

In sum, this review of literature presented a number of studies done on student motivation grounded in SDT. In addition, was explored the influence of the relationships between BPNS and SAM, social needs support and SAM. But there are no studies that explored the influence of the relationships between SS (TS and PS), and BPN (autonomy, competence, relatedness) on study academic motivation (intrinsic motivation, identified regulation, introjected regulation, external regulation) as a whole. This is where lays the originality of this study.

### **Research Problem**

The growing number of students at the college and university level created several issues in Cameroonian educational system. Many students exhibit maladaptive behaviors such as a lack of behavior adaptation, interests, respect, and happiness mostly leading to anger, vandalism, strikes, academic failure, and dropout (Nwaimah, 2008). To solve these

issues the Biya administration proposed a number of reforms. They created many public and private universities and institutes of higher education. Also, the Biya administration implemented the Bologna Model, which was a process of educational reforms that consisted of borrowing and transferring of policies, ideas and practices from the Bologna Process- the intention of creating a European higher education area (Eta, 2015; Mngo, 2011). Yet despite the surface progress, the question of how to enhance student learning and improve instruction always remains unsolved. While enrollment numbers are increasing, gaps persist in degree attainment (Eta, 2015). This is evidence that one of the main problems of student success is motivation, especially among college students who have negative feelings of being separated from their parents during college.

In general, several studies (e.g., Astin, 1977; Boylan, 1988, 1992; Boylan et al., 1992; Brier, 1984) addressed the problem of learning and academic failure through the lack of academic skills and school unpreparedness. A growing number of research base seeks to understand how many questions pointing to different characteristics of students, teachers, instructors, social and physical environments influence student learning (Berliner, 2006). Mostly, these studies provided the solution to the problem of school failure through the lens of developmental and remedial instructions. Even though research demonstrated that best developmental and remedial instructions could improve the learning skills of an academically weak and unprepared student, they could not do so for unmotivated and unprepared students (Kelly, 1988). This was the main reason why the present study leant on the investigation of the influence of SS and BPN on SAM, which might determine potential factors for improving student learning and instruction.

## **Purpose of the Study**

The purpose of this study was to test a theoretical model of the influence of SS, BPNS on SAM of college students at University of Ngaoundéré. In addition, through the hypothesized model showing SS through the mediating variable of BPNS could predict SAM, SS could predict BPNS, and BPNS could predict SAM, the researcher examined whether the proposed theoretical model of the study fits the data. The model did not fit the data. After the re-specification of the model, a direct effect from PS on SAM was added, which allowed the model to fit the data.

## **Research Method**

### **Population and Sample**

The study was conducted on the first, second, and third year university students seeking a Bachelors' degree in the Departments of History, Geography, and Sociology/Anthropology in the FALSS) at University of Ngaoundéré in Cameroon. In total, 3,776 participants of the three Departments were involved in the research. The sample consisted of 400 participants based on the subjects-to-variable ratio of 5:80. Therefore, 400 questionnaires were sent out, but only 388 questionnaires were turned in. After the cleaning process of the data, five cases were deleted with final sample of 383 participants.

### **Research Question**

The research question for this study was: Is the hypothesized model showing SS through the mediating variable of BPN could predict SAM, SS could predict BPN, and



BPN could predict SAM supported by the data? The following research question was answered: Is the theoretical covariance matrix equal to the observed covariance matrix?

### Research Design

This study utilized a quantitative, non-experimental, correlational, and cross-sectional, survey design. The study was quantitative because it emphasized the use of scientific method of positivist worldview through observation, quantifiable data, and a statistical technique to empirically test the hypothesis explaining and predicting the variables of the study (McMillan & Schumacher, 2010). This study was a non-experimental research design because it described the variables of the study and examined relationships between these variables “without any direct manipulation of conditions that are experienced” (McMillan & Schumacher, 2010, p 22). This study was also correlational because it used the explanatory research design to predict and explain the association between or among variables, as pointed out by Creswell (2012). This study used a cross-sectional survey design because the researcher selected a sample of participants and administer a questionnaire. Also, the data was related to current attitudes, opinions and beliefs of students, at a specific point in time (Creswell, 2012). Then the information collected from the sample was inferred to the population.

### Summary of Findings

Structural equation modeling hypothesis-testing procedures using IBM SPSS AMOS 25 was the statistical technique used for hypothesis-testing. The hypothesized model in this research study helped to explain the overall relationships among the latent factors of SS, BPN, and SAM. In SEM, the fit between the model and observed data is

determined through the use of several goodness-of-fit indices. Analysis of the data indicated that the initial hypothesized model did not fit the data. The researcher re-specified the model and found an acceptable fit between the theoretical covariance matrix and the observed covariance matrix. The results of the adjusted model indicated an acceptable fit matching recommended benchmarks (128,094;  $DF = 55$ ,  $p = .000$ ; GFI = .96; CFI = 0.96; NFI = 0.94; SRMR = 0.05). The null hypothesis was therefore retained, indicating empirical support for the theoretical model.

Associations were found among the exogenous variable of SS, the mediating variable of BPN and the outcome variable of SAM. Peer support was the strongest direct predictor for the outcome variable of SAM with a positive, statistically significant coefficient of .67. In addition, the direct path coefficient from the predictor variable of SS to the mediating variable of BPN was also strong, positive, and statistically significant with a coefficient of .70.

However, the direct path coefficient from the mediating variable of BPN to the outcome variable of SAM was weak with a coefficient of .18. This means that the mediating variable of BPN plays the role of potential contributor to SAM because the predictor variable of SS accounts for 49% of the variance in the variable of BPN, while the mediating/predicting variable of BPN accounts only for .03% of variance in the outcome variable of SAM. This literally indicates the near non-existence of the role of BPN as predictor of academic motivation. The total indirect effect from the exogenous variable of SS to the outcome variable of SAM is also .64, which is stronger, positive, and statistically significant.

## **Discussion of the Findings**

### **Predictive Direct Effect From Social Support on Basic Psychological Needs**

This study employed TS of competence, TS of autonomy, and TS of social relatedness as indicators of TS and PS of autonomy, PS of competence, and PS of social relatedness satisfaction as indicators of PS. Both TS and PS were also employed as indicators of SS. As such, the relationship between SS and BPN is the application of the relationship between CET and BPN, which are sub-theories of SDT. These two sub-theories are designated to explain the influences social and interpersonal interactions either foster or hinder intrinsic motivation, competence, autonomy, and relatedness.

Regarding the hypothesized relationship between SS and BPN, the findings from the current study revealed a relatively strong positive direct path between these two variables with a coefficient of .70, which is consistent with previous studies on TS and PS of BPN (e.g., Deci & Ryan, 1985, 2000; Demirtepe-Saygılı1 & Bozol, 2011; Habley & McClanahan, 2004; Ryan, 1995). Because of the empowerment of TS and PS of autonomy, competence and relatedness, the current study is consistent with past studies that revealed empowering environment promotes students' psychological well-being via the strong sense of security they feel in the teacher-student relationships and student-student relationships (Duda, 2013; Evans, Harvey, Buckley, & Yan, 2009). The current study findings are aligned with the previous ones that revealed that as levels of perceived instructor support increased, so, too, did satisfaction of students' BPN (Tracie et al., 2013).

## Predictive Direct Effect From Basic Psychological Needs on Student Academic Motivation

This study employed intrinsic motivation, extrinsic identified regulation, extrinsic introjected regulation, and extrinsic external regulations as indicators to SAM. The predictive relationship between BPN and SAM means simply the relationship between competence, autonomy and relatedness and intrinsic motivation, identified regulation, introjected regulation, and external regulations. As such, the relationship between BPN and SAM is the application of the relationship between BPN sub-theory and the OIT, which are sub-theories SDT. The relationship of these two sub-theories of SDT describes in the study the relationship between autonomy, competence, and relatedness and different ways extrinsically motivated behavior such as identified regulation, introjected regulation, and external regulation are regulated and the contexts in which they come about.

Regarding the hypothesized relationship between BPN and SAM, the findings from the current study revealed the direct path coefficient from the mediating variable of BPN to the outcome variable of SAM is weak with ( $\beta = .18$ ), which is consistent with previous studies on fostering intrinsic motivation and identified regulation (Lepper & Henderlong, 2000; Pintrich & Schunk, 2002). The weakness of the direct path coefficient of BPN to SAM literally points out the near non-existence of the role of BPN as a predictor to intrinsic motivation and autonomous motivation.

Findings are also consistent with the study of Gagné et al. (2014) indicating that when the needs are not satisfied (thwarted), there will be negative psychological consequences. In other words, students in the current study did not perceive basic satisfaction needs as a source of intrinsic motivation and identified motivation because

the context in which these students learn may be more controlling and associated with negative student outcomes such as lower grades and preferences for easy work (Boggiano & Katz, 1991).

Furthermore, findings are aligned with deCharms (1968) and Deci and Ryan's (1995) assumptions that an external perceived locus of causality may play a particularly important role in engaging students' autonomous motivation. This means that the small effect size of BPN (3.24%) as a predictor variable to SAM may be indicative of the relatively lower level of intrinsic motivation and identified motivation of students. It may also be indicative of the relatively higher level of introjected regulation and external regulation negatively related to lack of expending effort, external demand or possible reward (Jang et al., 2010). Therefore, the relationship between the satisfaction of BPN and SAM, even though weak does hold implications for theory.

#### Predictive Indirect Effect From Social Support on Student Academic Motivation

This study employed TS and PS of BPN as indicator to SS. As such, the relationship between SS and SAM is the application of the relationship between CET, BPN, and OIT which are sub-theories of SDT, which compose the theoretical framework of the present study. These three sub-theories are designated to explain the influence SS has on SAM through the mediation of BPN.

Regarding the hypothesized indirect Effect from SS on SAM, findings from the current study revealed a relatively stronger, positive, total indirect effect of ( $\beta = .65$ ), which is consistent with previous studies (e.g., Levesque et al., 2004; Orsini & Binnie, 2016). Social support influences academic motivation of students through the mediation

of BPN. In fact, the role of TS in SS is aligned with assumptions of Skinner and Belmont (1993), and Kennedy et al. (1997) who echoed that student' level of motivation and participation, whether or not in class, is influenced by student-teacher relationships and student-student relationships.

Skinner and Belmont (1993) stated out that involvement/relatedness, structure/competence, and autonomy are associated with student motivation and positive learning gains. Findings are aligned with previous studies (Deci et al. 2006, Green & Foster, 1986) that students of autonomy-oriented teachers tend to be more intrinsically motivated and perceived themselves as more competent than students of control-oriented teachers. The larger effect size of the indirect effect from SS on SAM indicates better how supportive teachers rely on autonomy by using non-controlling informational language, providing explanatory rationales for requested tasks and communicating through messages that are informative, flexible, and rich in competence-related information (Jang et al., 2010), which may impact strongly students intrinsic motivation and identified regulation and weakly introjected regulation and external regulation.

#### Predictive Direct Effect From Peer Support on Student Academic Motivation

The major finding from this study was the direct effect of PS on SAM, a strong, positive, statistically significant direct effect with a coefficient of .67. This showed that PS accounted for approximately 45% of the variance on SAM. This finding had not been reported in the literature prior to this study. Nor was this finding anticipated by SDT's theoretical framework, which posits that the mediating role of BPN as essential to SAM. This finding indicates the inadequacy of SDT to explain SAM in this sample of students.

Two demographic factors clearly distinguish participants in the current study from previous studies using the same theoretical framework and instrument. All of those studies were conducted in Anglophone countries and none of those studies was conducted in Africa. Thus, it is possible that language and/or culture are responsible for this unanticipated result.

One possible theoretical adaptation to SDT for future investigations could involve incorporating elements of a developmental-ecological framework within SDT to understand better how SAM functions. Theoretical linkages between SDT and DET may help us understand how multiple layers of contexts, particularly the family-school link, play a role in enhancing or thwarting academic motivation without SDT's hypothesized mediation of BPN. Pianta and Walsh (1996) defined the ecology of schooling as an organized system of interactions and transactions among persons (parents, teachers, students), settings (home, school), and institutions (community, government). With such a view of schooling, one can see how interactions among student, that is among peers, may play an important role in fostering intrinsic and identified motivation. In turn, growth in these two forms of motivation may support developmental and educational progress of students. This theoretical assertion, supported by DET, could help explain this study's major, yet unanticipated finding.

In fact, previous studies on peer relationships using DET as a theoretical framework have acknowledged the multi-dimensional nature of PS, especially with regard to multiple provisions of friendships (Parker & Asher, 1993). Through PS, mutual friends engage in higher levels of prosocial behavior and more equitable resolution of conflict; they also experience closeness, warmth, and equality (Berndt, 2002; Hartup,

1996). However, there is near non-existent research done on these peer provisions in relation to specific motivational outcomes important for school success. Thus, without further research, the contribution of DET to the major finding from this study will remain unconfirmed.

### **Conclusions of the Study**

Enhancing SAM (intrinsic motivation, identified regulation, introjected regulation, and external regulation) through the mediation of BPNS (autonomy, competence, and relatedness) and the predictor of SS (TS and PS) is not only beneficial for student achievement, but for high-quality student learning. Using a hypothesized model of SAM, this research study sought to examine the influence of SS on BPN and BPN on SAM. The initial hypothesized model, based on SDT, did not fit the data and an adjusted model was developed that had measurements suitable for an acceptable fit based on specified fit indices. In the re-specified model, one direct causal relationship between the predictor variable of PS and SAM emerged in the structural model and as the major finding for this study. This finding did not validate the theoretical framework of the study, based on SDT.

Instead, a direct relationship path emerged between PS and SAM. Peer support was the only statistically significant predictor of SAM, with a beta weight of ( $\beta = .67$ ). This unanticipated finding between PS and SAM in the adjusted model revealed the inadequacy of SDT alone to explain SAM among students in this setting. This potentially indicated the need to identify theoretical linkages between SDT and the DET for predicting SAM among FALSS students. Ultimately, this study indicates that there is a necessity of continuing research to look for additional factors contribute to student



motivation in this institution, and perhaps across Cameroon and Francophone Africa. This will help create a robust, culturally sensitive theory of SAM for the region.

### **Limitations of the Study**

The present results provide seven limitations that should be taken into consideration when interpretation the findings.

1. Even though the research used SEM to determine the *direction* of the influence, it is nevertheless inappropriate to make *causal* inferences. For example, a longitudinal study may reveal a non-recursive effect of the mediating effect of BPN between SS and SAM. That is, SAM at a given point in time may influence BPN, which in turn may influence SAM.
2. This study focused on a limited number of factors predictive of SAM. While PS accounted for 45% of the variance in SAM, which is a strong result in social science research, other unstudied factors contributed more than half of the variance in SAM.
3. The final limitation of this study concerns generalizability. The findings of the present study and the conclusions drawn from it are from observations of a particular group in a particular time and place. Per se, they are not generalizable to students in other colleges or universities because of potential variations in environmental and cultural characteristics.

With these limitations in mind, the present study provides a foundation for the following recommendations for future research and educational practice.

## **Recommendations for Research**

After reviewing the results of findings, the researcher proposed a number of recommendations for future research:

1. The researcher suggests additional studies on predictors of SAM among students of other faculties, outside of the FALSS, at the University of Ngaoundéré to see if these findings are generalizable outside of FALSS students.
2. The researcher recommends replication of the current study cross-culturally in diverse educational settings, beginning with Cameroon and Francophone Africa. This will expand the search for factors contributing to SAM within different ecological systems. These additional studies will help identify any other settings with results similar to this study's findings.
3. If future research shows findings from this study apply across Cameroon or Francophone Africa, researchers should conduct studies integrating theoretical frameworks, such as SDT and DET, in an effort to create a robust, holistic, culturally sensitive theory of SAM for the region.
4. Conduct research on both students and instructors' perceptions of how instructors' actions at the University of Ngaoundéré facilitate or impede the development of students' perceptions of PS.
5. The researcher suggests use of mixed methods research design when investigating influences on SAM. In fact, the central premise of mixed methods is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either

approach alone. The qualitative design has several aspects of research that engage respondents more actively and contribute to richer, more insightful results than is possible in more structure survey (Creswell, 2012).

6. The researcher recommends conducting a longitudinal study of factors influencing SAM. Longitudinal studies allow researchers to analyze development and changes over a time. This may result, in a more profound understanding of students' opinions, attitudes, feelings, beliefs, knowledge, and practices on SAM.

### **Recommendations for Educational Practice**

No previous studies investigated the influence of SS (TS and PS) and BPN (autonomy, competence, and relatedness) on academic motivation (intrinsic motivation, identified regulation, introjected regulation, and external regulation) in the Cameroonian educational system. This research study serves a starting point to the conversation on how motivational strategies can help to improve instruction and student learning. Based on the findings of this study, the researcher makes the following recommendations to the leaders of the University of Ngaoundéré, as well as the faculty and students of FALSS.

1. The administrators of the University of Ngaoundéré should promote educational reforms by encouraging and funding research on factors that can influence SAM (see recommendations for research above).
2. Educational leaders at the university and within each faculty should organize and hold ongoing professional development in motivational strategies and programs in education, with particular attention to implementation of educational practices that promote development of

positive peer relationships in the context of the university setting. Several studies provide information about the primary influences on factors that influence academic motivation in the classroom and the large role the participation of teachers and instructors plays in effective professional development (Meirinka, Meijerb, Verloopa, & Bergenc, 2009; Mngo, 2011).

3. The need to create curricula to address SAM involves a complex interaction between curriculum innovation, teacher motivation, professional development, teaching, learning, and leadership environments (Watt & Richardson, 2008). Therefore, the researcher recommends that leaders of the University of Ngaoundéré include all educational stakeholders' views on curriculum design and professional development, particularly those of the teachers. This action is recommended because the teachers' contribution to the curriculum program will significantly influence their motivation to successfully implement the curriculum and to participate professional development programs.
4. The students of the FALSS should be proactive in using PS to influence all students' academic pursuits and achievements positively.

APPENDIX A  
RESEARCH INSTRUMENT

## LE FORMULAIRE D'ENQUÊTE

INDICATIONS : Le but de ce questionnaire est d'obtenir les informations sur votre perception relative à l'influence des besoins psychologiques de base et le support social sur la motivation scolaire des étudiants au cycle de Licence (CL) à l'université de Ngaoundéré au Cameroun. Les informations recueillies et analysées permettront aux autorités éducatives camerounaises de l'enseignement supérieur de considérer le rôle de certains aspects négligés de la motivation scolaire dans l'éducation. Plus encore, ces informations pourront apporter une nouvelle perspective dans la profession enseignante et l'apprentissage scolaire.

Vos réponses seront anonymes et strictement confidentielles. Il n'y a pas de réponses correctes ou incorrectes. Veuillez répondre à chaque question en noircissant la case correspondante (utilisez seulement un crayon sombre-HB).

Veuillez fournir chaque information demandée ci-dessous en noircissant la case correspondante.

### I. INFORMATIONS DEMOGRAPHIQUES

- A. Indiquez votre genre:  Féminin  Masculin.
- B. Indiquez la fourchette de votre âge:  Moins de 19 ans  19-24 ans  25-30 ans  31-36 ans  37-42 ans  43-48 ans  49-54 ans  55-60 ans  61 ans et plus.
- C. Indiquez votre domaine d'étude (spécialisation):  Histoire  Géographie  Sociologie/Anthropologie
- D. Indiquez votre niveau d'étude:  1ère année  2ème année  3ème année.

### II. SONDAGE SUR LA SATISFACTION DES BESOINS PSYCHOLOGIQUES DE BASE(SSBPB)

Durant les activités académiques pendant les cours au cycle de Licence (CL):

	Vivement en désaccord	Désaccord	Pas sûr mais tend vers le désaccord	Indécis	Pas sûr mais tend vers l'accord	D'accord	Vivement d'accord
1. Je peux décider des activités que je veux mener.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. J'ai un mot à dire au sujet des compétences que je veux pratiquer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Je pense que je prends les cours au CL parce que je le veux.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Je dois m'obliger à faire les activités.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Je me sens une certaine liberté d'action.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. J'ai un peu de choix dans ce que je veux faire.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Les cours au CL:							
7. Je pense que je suis relativement bon dans les cours au CL.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Je suis satisfait (e) de ma performance aux cours au CL.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Après avoir participé aux cours pendant un certain temps, je me sens assez compétent(e).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Je suis assez compétent (e) dans les cours au CL.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Je ne peux pas faire très bien les cours du CL.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avec les autres étudiants pendant les cours :							
12. Je me sens soutenu (e).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. J'ai le sentiment d'être compris (e).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. J'ai le sentiment d'être écouté (e).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. J'ai le sentiment d'être valorisé (e).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. J'ai le sentiment d'être en sécurité.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### III. SONDAGE SUR LE SUPPORT SOCIAL DES BESOINS PSYCHOLOGIQUES DE BASE(SSBPB)

Au courant des activités académiques des cours au CL :

17. Nous avons le sentiment que les enseignant(e)s nous offrent des choix et des options.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Nous avons le sentiment que nos enseignant(e)s nous comprennent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Nous pouvons nous ouvrir à nos enseignant (e)s pendant le déroulement des cours.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please complete the back side of this sheet

	Vivement en désaccord	Désaccord	Pas sûr mais tend vers le désaccord	Indécis	Pas sûr mais tend vers l'accord	D'accord	Vivement d'accord
20. Les enseignant(e)s font preuve de confiance en notre capacité à bien mener les activités académiques.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Nous avons le sentiment que nos enseignant(e)s nous acceptent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Les enseignant(e)s font tout pour vraiment se rassurer que nous comprenons les objectifs des cours et ce que nous devons faire.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Les enseignant(e)s nous encouragent à poser des questions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Nous avons beaucoup confiance à nos enseignant(e)s au CL.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Les enseignant(e)s répondent à nos questions entièrement et soigneusement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Les enseignant(e)s gèrent très bien nos émotions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Nous avons le sentiment que les enseignant(e)s se soucient de nous et nous considèrent comme des être humains.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Nous ne nous sentons pas très bien sur la façon dont les enseignant (e)s s'adressent à nous.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. Les enseignant(e)s essayent d'abord de comprendre comment nous voyons les choses avant de proposer de nouvelles méthodes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Nous nous sentons capables de partager nos sentiments avec les enseignant(e)s.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Les enseignant(e)s nous écoutent sur la façon dont nous aimerions que les choses se passent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. Les enseignants nous aident à nous améliorer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. Les enseignant(e)s nous donnent le sentiment que nous sommes à la hauteur des activités.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Nous avons le sentiment que les enseignant(e)s veulent que nous fassions bien.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. Les enseignant(e)s nous donnent le sentiment que nous sommes à mesure de faire les activités en classe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. Les enseignant(e)s nous soutiennent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. Les enseignant(e)s nous encouragent à travailler ensemble lors des exercices pratiques.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. Les enseignant(e)s ont du respect envers nous.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. Les enseignants sont intéressés à nous.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. Nous avons le sentiment que les enseignants sont amicaux envers nous.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. Nous avons le sentiment que les pairs nous offrent des choix et des options.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. Nous avons le sentiment que nos pairs nous comprennent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. Nous sommes en mesure de nous ouvrir à nos pairs pendant le déroulement des cours.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. Les pairs font preuve de confiance en notre capacité à bien faire.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. Nous avons le sentiment que nos pairs nous acceptent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. Les pairs font tout pour vraiment se rassurer que nous comprenons les objectifs des cours et ce que nous devons faire.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. Les pairs nous encouragent à poser des questions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. Nous avons beaucoup confiance à nos pairs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. Les pairs répondent à nos questions entièrement et soigneusement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. Les pairs gèrent nos émotions très bien.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. Nous avons le sentiment que les pairs se soucient de nous.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. Nous ne nous sentons pas très bien sur la façon dont les pairs nous parlent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. Les pairs essayent d'abord de comprendre comment nous voyons les choses avant de nous proposer de nouvelles méthodes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Vivement en désaccord	Désaccord	Pas sûr mais tend vers le désaccord	Indécis	Pas sûr mais tend vers l'accord	D'accord	Vivement d'accord
54. Nous nous sentons capables de partager nos sentiments avec les pairs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. Les pairs nous écoutent sur la façon dont nous aimerions que les choses se passent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56. Les pairs nous aident à nous améliorer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57. Les pairs nous donnent le sentiment que nous sommes à la hauteur des activités.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58. Nous avons le sentiment que les pairs veulent que nous fassions bien.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
59. Les pairs nous donnent le sentiment que nous sommes à mesure de faire les activités en classe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60. Les pairs nous soutiennent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
61. Les pairs nous encouragent à travailler ensemble lors des exercices pratiques.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
62. Les pairs ont du respect envers nous.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
63. Les pairs sont intéressés à nous.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
64. Nous avons le sentiment que les pairs sont amicaux envers nous.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>IV. SONDAGE SUR LA PERCEPTION DES ETUDIANTS RELATIVE A LA MOTIVATION ACADEMIQUE (SPEMA)</b>							
Je participe aux cours du CL:							
65. Parce que les cours me font plaisir.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
66. Parce que j'aime apprendre de nouvelles compétences.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
67. Parce que les cours sont passionnants.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
68. En raison du plaisir que j'éprouve quand j'apprends de nouvelles compétences/techniques.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
69. Parce que je veux apprendre les compétences qu'offre ce cycle .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
70. Parce que c'est important pour moi de réussir aux cours qu'offre ce cycle.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
71. Parce que je veux apporter une amélioration dans mes notes de classe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
72. Parce que je peux apprendre des compétences que je pourrais utiliser dans d'autres domaines de ma vie.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Je participe aux cours du cycle de Licence:							
73. Parce que je veux que les enseignant(e)s pensent que je suis un(e) bon(ne) étudiant(e).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
74. Parce que je me sentirais mal si je ne le faisais pas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
75. Parce que je veux prouver aux autres étudiant(e) que je suis intelligent(e).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
76. Parce que ça me dérange quand je ne participe pas en classe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
77. Parce que je vais avoir des ennuis si je ne le fais pas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
78. Car c'est ce que je suis censé(e) faire.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
79. Pour que l'enseignant(e) ne puisse pas hurler après moi.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
80. Parce que c'est la règle.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Droit d'auteur par Standage, Duda et Ntoumanis (2005).

(SSBPB): SONDAGE SUR LA SATISFACTION DES BESOINS PSYCHOLOGIQUES DE BASE

(SSBPB): SONDAGE SUR LE SUPPORT SOCIAL DES BESOINS PSYCHOLOGIQUES DE BASE

(SPEMA): SONDAGE SUR LA PERCEPTION DES ETUDIANTS RELATIVE A LA MOTIVATION ACADEMIQUE



## SURVEY

DIRECTIONS: The purpose of this questionnaire is to obtain information about your perceptions of the influence of basic psychological needs and social support on academic motivation at the University of Ngaoundéré in Cameroon. This information will help Cameroonian higher education leaders to consider the overlooked aspects of academic motivation in education. Also, it can bring new insights in the teaching profession and academic learning. There are no correct or incorrect answers. Your responses are completely anonymous and confidential.

Darken the bubble corresponding to your response for each item. Please use a dark pencil.

### I. BACKGROUND INFORMATION

- A. Please indicate your gender:  Female  Male
- B. Indicate your age range:  Less than 19 years  19-24 years  25-30 years  31-36 years above  37-42 years old  43-48 years  49-54 years  55-60 years  61 years and above
- C. Identify your area of specialization:  History  Geography  Sociology and Anthropology,
- D. Indicate your highest level of study:  First-year study  Second-year study  Third-year study.

### II. BASIC PSYCHOLOGICAL NEED SATISFACTION SURVEY(BPNSS)

During Bachelor Program (BP) classes:

- |   | Strongly<br>Disagree  | Disagree              | Not sure,<br>but tend to<br>disagree | Undecided             | Not sure,<br>but tend to<br>agree | Agree                 | Strongly<br>agree     |
|---|-----------------------|-----------------------|--------------------------------------|-----------------------|-----------------------------------|-----------------------|-----------------------|
| 1. I can decide which activities I want to practice.      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/> | <input type="radio"/> |
| 2. I have a say regarding what skills I want to practice. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/> | <input type="radio"/> |
| 3. I feel that I do BP classes because I want to.         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/> | <input type="radio"/> |
| 4. I have to force myself to do the activities.           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/> | <input type="radio"/> |
| 5. I feel a certain freedom of action.                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/> | <input type="radio"/> |
| 6. I have some choice in what I want to do.               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>                | <input type="radio"/> | <input type="radio"/>             | <input type="radio"/> | <input type="radio"/> |

BP classes:

- |   |                       |                       |                       |                       |                       |                       |                       |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 7. I think I am pretty good at BP classes.                                      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 8. I am satisfied with my performance at BP classes.                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 9. When I have participated in BP classes for a while, I feel pretty competent. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 10. I am pretty skilled at BP classes.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 11. I cannot do BP classes very well.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

With the other students during BP classes:

- |                         |                       |                       |                       |                       |                       |                       |                       |
|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 12. I feel supported.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13. I feel understood.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 14. I feel listened to. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 15. I feel valued.      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 16. I feel safe.        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

### III. NEED SUPPORT FOR BASIC PSYCHOLOGICAL NEED SURVEY (NSBPNS)

During BP class activities:

- |   |                       |                       |                       |                       |                       |                       |                       |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 17. We feel that the BP instructors provide us with choices and options.                              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 18. We feel understood by our BP instructors.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 19. We are able to be open with our BP instructors during classes.                                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 20. The BP instructors show confidence in our abilities to do well.                                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 21. We feel that our BP instructors accept us.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 22. The BP instructors make sure we really understand the goals of the lesson and what we need to do. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Please complete the backside of this sheet

[Serial #]

Strongly Disagree      Disagree      Not sure, but tend to disagree      Undecided      Not sure, but tend to agree      Agree      Strongly agree

**IV. ACADEMIC MOTIVATION SURVEY (AMS)**

I take part in BP classes:

	Strongly Disagree	Disagree	Not sure, but tend to disagree	Undecided	Not sure, but tend to agree	Agree	Strongly agree
65. Because PB classes are fun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
66. Because I enjoy learning new skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
67. Because BP classes are exciting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
68. Because of the enjoyment that I feel while learning new skills/techniques.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
69. Because I want to learn BP skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
70. Because it is important for me to do well in BP classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
71. Because I want to improve in BP classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
72. Because I can learn skills which I could use in other areas of my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
73. Because I want instructors to think I'm a good student.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
74. Because I would feel bad about myself if I didn't.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
75. Because I want the other students to think I'm skillful.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
76. Because it bothers me when I don't.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
77. Because I'll get into trouble if I don't.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
78. Because that's what I am supposed to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
79. So that the teacher won't yell at me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
80. Because that's the rule.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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(BPNSS) BASIC PSYCHOLOGICAL NEED SATISFACTION SURVEY(BPNSS)

(NSBPNS) NEED SUPPORT FOR BASIC PSYCHOLOGICAL NEED SURVEY (NSBPNS)

(AMS) ACADEMIC MOTIVATION SURVEY (AMS)

47. The BP peers encourage us to ask questions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. We feel a lot of trust in our BP peers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. The BP peers answer our questions fully and carefully.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. The BP peers handle our emotions very well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. We feel that our BP peers care about us as people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. We don't feel very good about the way the BP peers talk to us.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. The BP peers try to understand how we see things before suggesting new ways to do things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. We feel able to share our feelings with the BP instructors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. The BP instructors listen to how we would like to do things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56. The BP peers help us to improve.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57. The peers make us feel like we are good at BP activities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58. We feel that the BP peers like us to do well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
59. The BP peers make us feel like we are able to do the activities in class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60. The BP peers support us.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
61. The BP peers encourage us to work together in practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
62. The BP peers have respect for us.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
63. The BP peers are interested in us.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
64. We feel that the BP peers are friendly towards us.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX B

TABLE OF DEFINITIONS OF VARIABLES

Constructs	Sub-Constructs	Variables	Conceptual Definition	Instrumental Definition	Operational Definition
Exogenous/Endogenous Variables					
Basic Psychological Needs (BPNs)			A universal innate psychological need for competence, autonomy and social relatedness that are essential to ensure psychological health, development and well-being (Deci & Ryan, 1985).	<p>The independent variable BPNs will be measured by scores on 16 items from scales utilized by Standage, Duda, and Ntoumanis (2005). BPNs includes 3 subscales: competence, autonomy, and social relatedness. Responses to all items will be summed to obtain the total score for the BPNs Scale.</p> <p>In this program...</p> <ol style="list-style-type: none"> <li>1. I can decide which activities I want to practice.</li> <li>2. I have a say regarding what skills I want to practice.</li> <li>3. I feel that I do my school activities because I want to.</li> <li>4. I have to force myself to do the activities.</li> <li>5. I feel a certain freedom of action.</li> <li>6. I have some choice in what I want to do.</li> <li>7. I think I am pretty good in doing my school activities.</li> </ol>	Scores for the BPNs scales will be calculated by summing the response values for items 1 through 16. The minimum score for the BPNs Scale is 16 and the maximum value is 112.

				<p>8. I am satisfied with my performance at my school activities.</p> <p>9. When I have participated in educational activities for a while, I feel pretty competent.</p> <p>10. I am pretty skilled at school activities.</p> <p>11. I cannot do school activities very well.</p> <p>12. With other students in my class I feel supported.</p> <p>13. With other students in my class I feel understood.</p> <p>14. With other students in my class I feel listened to.</p> <p>15. With other students in my class I feel valued.</p> <p>16. With other students in my class I feel safe.</p>	
		Autonomy	Students' feelings or beliefs that they are the origin or source of their own behavior (Deci & Ryan, 2002).	Identification of inferences will be measured using 6 items (#1-#6) from the scales utilized by Standage, Duda, and Ntoumanis (2005) for basic psychological needs.	Items 1-6 measured the Autonomy scale with a minimum value of 6 and a maximum of 42.
		Competence	Students' feelings or beliefs	Competence will be measured using 5 items from the scales	Items 7-11 measured the

			that they are effective in: their ongoing interactions within their social environments; their experiencing opportunities to learn; and demonstrating their capacities. (Deci & Ryan, 2002)	utilized by Standage, Duda, and Ntoumanis (2005) for basic psychological needs.	Autonomy scale with a minimum value of 5 and a maximum of 35.
		Social Relatedness	Social Relatedness will be defined as a feeling or belief of being connected to others; caring for and being cared for by those others and having a sense of belongingness outside or in the classroom (Deci & Ryan, 2002).	Relatedness will be measured using 5 items from the scales utilized by Standage, Duda, and Ntoumanis (2005) for basic psychological needs.	Items 12-16 measured the Autonomy scale with a minimum value of 5 and a maximum of 35.

Social Support Needs (SSNs)			Teacher Support is defined as a feeling or belief that a student has from a teacher or peers supporting personal autonomy, competence, and social relatedness.	The SS variable will be measured by 48 items from scales utilized by Standage, Duda, and Ntoumanis (2005). SSNs is comprised of two sub-constructs: Teacher Support and Peer Support.	Scores for the SSNs scales will be calculated by summing the response values for items 17 through 65. The minimum score for the SSNs scales is 48 and the maximum value is 336.
	Teacher Support		Teacher Support is defined as a feeling or belief that a student has from a teacher supporting personal autonomy, competence, and relatedness.	<p>The teacher support variable is a sub-construct of Social Support Needs (SSNs) and will be measured by 24 items from scales utilized by Standage, Duda, and Ntoumanis (2005). Teacher Support includes 3 subscales: Teacher Competence Support, Teacher Autonomy Support, and Teacher Social Relatedness Support.</p> <p>In this program...</p> <ol style="list-style-type: none"> <li>1. We feel that the instructors provide with choices and options.</li> <li>2. We feel understood by our instructors.</li> <li>3. We are able to open with our instructors during class.</li> </ol>	Scores for the Teacher Support scale will be calculated by summing the response values for items 17 through 40. The minimum score for the Teacher Support scale is 24 and the maximum value is 168.

				<ol style="list-style-type: none"><li>4. The instructors show confidence in our abilities to do well in school activities.</li><li>5. We feel that our instructors accept us</li><li>6. The instructors make sure we really understand the goals of the lesson and what we need to do.</li><li>7. The instructors encourage us to ask questions.</li><li>8. We feel a lot of trust in our instructors.</li><li>9. The instructors answer our questions fully and carefully.</li><li>10. The instructors handle our emotions very well.</li><li>11. We feel that our instructors care about us as people.</li><li>12. We don't feel very good about the way our instructors talk to us.</li><li>13. The instructors try to understand how we see things before suggesting new ways to do things.</li><li>14. We feel able to share our feelings with the instructors.</li></ol>	
--	--	--	--	--	--



				<p>15. The instructors listen to how we would like to do things.</p> <p>16. The instructors help us to improve.</p> <p>17. The instructors make us feel like we are good at school activities.</p> <p>18. We feel that the instructors like us to do well.</p> <p>19. The instructors make us feel like we are able to do the activities in class.</p> <p>20. The instructors support us.</p> <p>21. The instructors encourage us to work together in practice.</p> <p>22. The instructors have respect for us.</p> <p>23. The instructors are interested in us.</p> <p>24. We feel that the instructors are friendly toward us.</p>	
		Teacher Autonomy Support	Teacher Autonomy Support will be defined as a feeling or belief that a student has from a teacher	Autonomy will be measured using 15 items from the scales utilized by Standage, Duda, and Ntoumanis (2005) for teacher need support.	Items 17-31 will measure the Teacher Autonomy Support scale with a minimum score of 15 and a maximum of 105.

			supporting him for being the origin or source of his own behavior (Deci & Ryan, 2002).		
		Teacher Competence Support	Teacher Competence Support will be defined as a feeling or belief that a student has from a teacher supporting him for being effective in his ongoing interactions with the social environment and experiencing opportunities to learn and express personal capacities (Deci & Ryan, 2002).	Teacher Competence Support will be measured using 4 items from the scales utilized by Standage, Duda, and Ntoumanis (2005) for teacher need support.	Items 32-35 measured the Teacher Competence Support scale with a minimum value of 4 and a maximum of 28.

		Teacher Social Relatedness Support	Teacher Social Relatedness Support will be defined as a feeling or belief that a student has from a teacher supporting him for being connected to others; caring for and being cared for by those others and having a sense of belongingness outside or in the classroom (Deci & Ryan, 2002).	Teacher relatedness support will be measured using 5 items from the scales utilized by Standage, Duda, and Ntoumanis (2005) for teacher needs support.	Items 36-40 measured the Teacher Social Relatedness Support scale with a minimum value of 5 and a maximum of 35.
	Peer Support		Peer Support will be defined as a feeling or belief that a student has from a peer supporting personal autonomy,	The Peer Support variable is a sub-construct of Social Support Needs (SSNs) and will be measured by 24 items from scales utilized by Standage, Duda, and Ntoumanis (2005). Peer Support includes 3 subscales: Peer Competence Support, Peer Autonomy Support,	Items 41-65 measured the Peer Support scale with a minimum value of 24 and a maximum of 168.

			competence, and relatedness.	<p>and Peer Social Relatedness Support.</p> <p>In this program...</p> <ol style="list-style-type: none"> <li>1. We feel that the peers provide with choices and options.</li> <li>2. We feel understood by our peers.</li> <li>3. We are able to open with our peers during class.</li> <li>4. The peers show confidence in our abilities to do well in school activities.</li> <li>5. We feel that our peers accept us</li> <li>6. The peers make sure we really understand the goals of the lesson and what we need to do.</li> <li>7. The peers encourage us to ask questions.</li> <li>8. We feel a lot of trust in our peers.</li> <li>9. The peers answer our questions fully and carefully.</li> <li>10. The peers handle our emotions very well.</li> <li>11. We feel that our peers care about us as people.</li> </ol>	
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				<ol style="list-style-type: none"><li>12. We don't feel very good about the way our peers talk to us.</li><li>13. The peers try to understand how we see things before suggesting new ways to do things.</li><li>14. We feel able to share our feelings with the peers.</li><li>15. The peers listen to how we would like to do things.</li><li>16. The peers help us to improve.</li><li>17. The peers make us feel like we are good at school activities.</li><li>18. We feel that the peers like us to do well.</li><li>19. The peers make us feel like we are able to do the activities in class.</li><li>20. The peers support us.</li><li>21. The peers encourage us to work together in practice.</li><li>22. The peers have respect for us.</li><li>23. The peers are interested in us.</li><li>24. We feel that the peers are friendly toward us.</li></ol>	
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		Peer Autonomy Support	Peer Autonomy Support will be defined as a feeling or belief that a student has from a peer supporting him for being the origin or source of his own behavior (Deci & Ryan, 2002).	Peer Autonomy Support will be measured using 15 items from the scales utilized by Standage, Duda, and Ntoumanis (2005) for peer need support.	Items 41-55 will measure the Peer Autonomy Support scale with a minimum score of 15 and a maximum of 105.
		Peer Competence Support	Peer Competence Support will be defined as a feeling or belief that a student has from a peer supporting him for being effective in his ongoing interactions with the social environment and experiencing opportunities to	Peer Competence Support will be measured using 4 items from the scales utilized by Standage, Duda, and Ntoumanis (2005) for peer needs support.	Items 56-59 will measure the Peer Competence Support scale with a minimum value of 4 and a maximum of 28.

			learn and express personal capacities (Deci & Ryan, 2002).		
		Peer Social Relatedness Support	Peer Social Relatedness Support will be defined as a feeling or belief that a student has from a peer supporting him for being connected to others, caring for and being cared for by those others and having a sense of belongingness outside or in the classroom (Deci & Ryan, 2002).	Peer Social Relatedness Support will be measured using 5 items from the scales utilized by Standage, Duda, and Ntoumanis (2005) for peer need support.	Items 60-64 measured the Peer Social Relatedness Support scale with a minimum value of 5 and a maximum of 35.
Endogenous/Outcome Variables					
Student Academic			Student Academic Motivation may	Student Academic Motivation is measured by 16 items. SAM is comprised of two sub-constructs:	Items 65-80 measured SAM with a minimum value of

Motivation (SAM)			<p>be defined as self-determined innately controlled efforts, or struggles to succeed at academic tasks. Academic motivation has two characteristics: intrinsic and extrinsic motivation (Bandura, 1997).</p>	<p>Intrinsic Motivation and Extrinsic Motivation.</p> <p>I take part in the school activities...</p> <ol style="list-style-type: none"> <li>1. Because school activities are fun.</li> <li>2. Because I enjoy learning new skills.</li> <li>3. Because school activities are exciting.</li> <li>4. Because of the enjoyment that I feel while learning new skills/techniques.</li> <li>5. Because if want to learn study skills.</li> <li>6. Because it is important for me to do well in school activities.</li> <li>7. Because I want to improve in school activities.</li> <li>8. Because I can learn skills I could use in other areas of my life.</li> <li>9. Because I want the teacher to think I am a good student.</li> <li>10. Because I would feel bad about myself if I didn't.</li> <li>11. Because I want the other students to think I am skillful.</li> </ol>	16 and a maximum of 112.
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				<p>12. Because it bothers me when I don't.</p> <p>13. Because I will get into trouble if I don't.</p> <p>14. Because that's what I am supposed to do.</p> <p>15. So that the teacher won't yell at me.</p> <p>16. Because that the rule.</p>	
	Intrinsic Motivation	Intrinsic Motivation (M1)	Intrinsic Motivation (M1) is defined as feelings of satisfaction and pleasure that arise directly from the various activities (Standage, Duda, and Ntoumanis (2005).	Intrinsic Motivation (M4) will be measured using 4 items from scales utilized by Standage, Duda, and Ntoumanis (2005) for academic motivation.	Items 65-68 measured Intrinsic Motivation (M1) with a minimum value of 4 and a maximum of 28.
	Extrinsic Motivation		Extrinsic or controlled motivation is further defined by three characteristics: Identified Regulation,	Extrinsic Motivation will be measured using 12 items from scales utilized by Standage, Duda, and Ntoumanis (2005)	Items 69-80 measured Extrinsic Motivation with a minimum value of 12 and a maximum of 84.

			Introjected Regulation, and External Regulation. (Bandura, 1997).		
		Identified Regulation (AM2)	Identified Regulation (AM2) is defined as a motivation to succeed that is inspired by a deep interest and desire to learn because of its significance or value.	Identified Regulation (AM3) will be measured using 4 items from the scales utilized by Standage, Duda, and Ntoumanis (2005) for academic motivation.	Items 69-72 measured Identified Regulation (AM2) with a minimum value of 4 and a maximum of 28.
		Introjected Regulation (AM3)	Introjected regulation is conceptually defined as student desire to achieve that is inspired by feelings of guilt, shame, or egocentric feelings (Ryan & Deci, 2002)	Introjected Regulation (AM2) will be measured using 4 items from the scales utilized by Standage, Duda, and Ntoumanis (2005) for academic motivation.	Items 73-76 measured Introjected Regulation (AM3) with a minimum value of 4 and a maximum of 28.

		External Regulation (AM4)	External Regulation or controlled motivation may be defined as an internal motivation to achieve which is stimulated by external pressure and not autonomous in nature (Vansteenkiste et al. 2009).	External Regulation (AM1) will be measured using 4 items from the scales utilized by Standage, Duda, and Ntoumanis (2005) for academic motivation.	Items 77-80 measured External Regulation (AM4) with a minimum value of 4 and a maximum of 28.
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APPENDIX C  
INFORMED CONSENT

**Andrews University  
Berrien Springs, Michigan 49104**

**INFORMED CONSENT FORM**

My name is Samuel Adamou. I am conducting a research study as part of my dissertation, in partial fulfillment for my Doctor of Philosophy degree at Andrews University, Berrien Springs, and Michigan. I would greatly appreciate your participation in this study.

**Research Title:** College Students' Perceptions of the Influence of Basic Psychological Needs and Social Support on Academic Motivation at the University of Ngaoundéré in Cameroon.

**Purpose of Study:** The purpose of the study is to test a theoretical model of self-determination theory in order to find out whether students' perceptions of basic psychological needs (autonomy, competence, and relatedness) associated with social support (instructor support and peer support) can enhance first, second, and third year students' academic motivation (external motivation, introjected motivation, identified regulation, and intrinsic motivation).

**Duration of participation in study:** I understand that I will be required to complete a survey, which will take approximately thirty minutes of my time.

**Procedures:** I have been informed that participation will involve filling a survey at school in the classroom during lunchtime or any other time convenient to me.

**Benefits:** I have been informed that there are no direct benefits to me.

**Risks:** I have been informed that there is no more than minimal risk in the study.

**Voluntary Participation:** I have been informed that my participation in this study is completely voluntary; refusal to participate will involve no penalty or loss of benefits to which I am otherwise entitled. I may discontinue participation at any time without penalty or loss of benefits to which I may otherwise be entitled.

**Confidentiality:** I understand that my identity in this study will be treated confidentially. No identifiers will be disclosed. The confidential data will be kept in a private and secured storage for use only by the researcher and his advisors for a period of 3 years.

**Contact:** I am aware that I can contact Dr. Larry Burton, the research supervisor of Samuel Adamou at burton@andrews.edu or by phone at 269-471-3465 or the researcher, Samuel Adamou at adamou@andrews.edu or by phone at 269 471 6841 or the research assistant of Samuel Adamou, Ghislaine Faraida Aicha at faridaaicha@yahoo.com or by phone at +237 690 29 53 71 for any questions related to this study.

I have read the contents of this consent and received verbal explanations to questions I had. My questions concerning this study have been answered satisfactorily. By filling out this questionnaire, I give my voluntary consent to participate in this study

## Andrews University

### FORMULAIRE PORTANT SUR LE CONSENTEMENT DE L'ETUDIANT

Je m'appelle Samuel Adamou, étudiant en thèse de doctorat à Andrews University, Berrien Springs, Michigan. Cette étude que je mène compte pour l'accomplissement partiel de mon PhD en Curriculum and Instruction dans le Département de Teaching, Learning, et Curriculum dans la Faculté des Sciences de l'Education d' Andrews University. Je vous serais très reconnaissant de votre participation à cette étude.

**Titre de la recherche:** Perceptions des étudiants au cycle de Licence dans la Faculté des Arts, Lettres et Sciences Humaines sur l'influence des besoins psychologiques de base et du soutien social sur la motivation académique à l'Université de Ngaoundéré au Cameroun.

**Objectif de l'étude:** Le but de l'étude est de tester un modèle théorique de la théorie de l'autodétermination afin de savoir si les perceptions que les étudiants ont des besoins psychologiques de base (autonomie, compétence et degré d'appartenance) liés au support social (support de l'enseignant et support des pairs) peuvent améliorer la motivation académique (Motivation externe, motivation introjectée, motivation identifiée et motivation intrinsèque) des étudiants de première, deuxième, et troisième année aux Départements d'Histoire, de Géographie, de Sociologie et Anthropologie.

**Durée de la participation à l'étude:** Je comprends que je vais devoir remplir un questionnaire qui prendra environ trente minutes de mon temps.

**Procédures:** Je suis informé (e) que ma participation consistera à remplir un questionnaire à l'école dans la salle de classe pendant l'heure du déjeuner ou en tout autre temps et lieu qui me sont commodes.

**Avantages:** Je suis informé (e) qu'il y a aucun avantage directement lié à moi.

**Risques:** Il y a aucun risque ou incidence d'être lésé (e) de quelque façon que ce soit pendant l'étude de recherche qui est au-dessus de la normale.

**Participation volontaire:** Je suis informé (e) que ma participation à cette étude est entièrement volontaire ; le refus de participer n'entraînera aucune pénalité ou perte de prestations auxquelles j'aurais droit. Je peux interrompre la participation à tout moment sans pénalité ni perte de prestations auxquelles j'aurais autrement droit.

**Confidentialité:** Je comprends que mon identité (e) dans cette étude sera traitée avec confidentialité. Aucun identificateur ne sera divulgué. Les données confidentielles seront conservées dans un entrepôt privé, sécurisées et utilisées uniquement par le chercheur et ses conseillers pendant une période de 3 ans.

**Contact:** Je sais que je peux contacter l'assistante de recherche du chercheur Samuel Adamou, Ghislaine Faraida Aicha par courriel au faridaaicha@yahoo.com ou par téléphone au +237 690 29 53 71 pour les réponses aux questions liées à cette étude.

J'ai lu le contenu de ce consentement et reçu des explications verbales aux questions que j'avais. Les réponses à mes questions concernant cette étude ont été satisfaites. En remplissant le formulaire d'enquête, je donne mon consentement volontaire pour participer à cette étude.

APPENDIX D  
RECRUITMENT FLYER

**Andrews University**

**Berrien Springs, Michigan 49104**

**Recruitment Flyer**

**VOLUNTEERS WANTED FOR A RESEARCH STUDY**

**Research Title:** Students' Perceptions of the Influence of Basic Psychological Needs and Social Support on Academic Motivation at University of Ngaoundéré in Cameroon.

The purpose of the study is to test a theoretical model of self-determination theory to find out if the satisfaction of autonomy, competence, and relatedness, which form the basic psychological needs, associated with instructor support and peer support will help foster student academic motivation.

If you decide to participate in this study, you must be a student in the Departments of History, Geography, Sociology and Anthropology at University of Ngaoundéré. The survey is voluntary and will take 30 minutes. The questionnaire will be completed in the classroom or any other place during lunchtime.

If you are willing to participate or have any questions, please contact my research assistant by email at [faridaaicha@yahoo.com](mailto:faridaaicha@yahoo.com) or by phone at +237 690 29 53 71 or come to the classrooms used for History, Geography, Sociology and Anthropology classes during lunchtime.



APPENDIX E  
CORRESPONDENCE

Robson Marinho, Ph.D., Dean of School of Education  
Andrews University  
Bell Hall 105  
4195 Administration Dr.  
Berrien Springs, MI 49104-0114

April 28, 2017

Vice Rector, Research and Cooperation,  
University of Ngaoundéré,  
PO Box 454  
Ngaoundéré, Cameroon

RE: Permission to Conduct Research Study

Dear Mr. Vice Rector:

On behalf of Samuel Adamou, I am writing to request permission for him to conduct a research study at your institution. He is a doctoral candidate in the Department of Teaching, Learning, & Curriculum in the School of Education at Andrews University in Berrien Springs, Michigan, and is in the process of writing his Dissertation. His study is titled "Students' perceptions of the influence of basic psychological needs and social support on academic motivation at the University of Ngaoundéré in Cameroon." The purpose of the study is to obtain information about students' perceptions of the influence of basic psychological needs and social support on academic motivation. This information will help Cameroonian higher education leaders and instructors to consider the overlooked aspect of motivation in teaching and to determine how it can help enhance student learning. Ultimately, this can contribute to major changes in higher education in Cameroon.

I hope that the school administration will allow him to recruit 400 students to complete a 3-page questionnaire anonymously within the Departments of History, Geography, and Sociology/Anthropology during this school term.

If approved, student participants will complete the survey in a classroom or other quiet setting on the school site during lunchtime or any other time convenient to them. The survey process should take no longer than 30 minutes. The survey results will be reported for the group of respondents as a whole, and individual responses will remain absolutely confidential and anonymous.

If you agree with this request for data collection at your university, kindly submit a signed letter of permission following the Andrews University guidelines below:

1. It should be written on the Institution's letterhead;
2. It should mention the researcher/investigator by name; Samuel Adamou

3. It should mention the title of the study for which institutional consent is being given; “Students’ Perceptions of the Influence of Basic Psychological Needs and Social Support on Student Academic Motivation”
4. It should be dated;
5. It should include the scope of the permission— what the researcher can do with, and on the subjects; Scope: Students will fill in a questionnaire. The researcher can include the collected data in his dissertation without any identification of students. The data will be secured until they are destroyed at the end of three years.
6. It should include the name and the title/office of the individual within the institution providing the consent;
7. It should be signed by an authority of the institution;
8. It should be addressed to:

Institutional Review Board  
Andrews University  
4150 Administrative Drive, Room 322  
Berrien Springs, MI 49104-0355

Or faxed to attention

IRB: (269) 471-6543

E-mail Letters: Letters may be sent as scanned email attachments to  
irb@andrews.edu

I look forward to hearing from you and greatly appreciate your consideration.

Sincerely,

Robson Marinho , Ph.D.  
Dean, School of Education

Samuel Adamou  
Ph.D. Candidate

Larry Burton, Ph.D./Research Mentor for Mr. Samuel Adamou

REPUBLIQUE DU CAMEROUN  
Paix-Travail-Patrie

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Université de Ngaoundéré  
un@univ-ndere.cm  
BP : 454 Tel. : 22254005  
RECTORAT



VICE-RECTEUR CHARGE DE LA RECHERCHE,  
DE LA COOPERATION ET DES RELATIONS AVEC  
LE MONDE DES ENTREPRISES

REPUBLIC OF CAMEROON  
Peace-Work-Fatherland

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The University of Ngaoundere  
un@univ-ndere.cm  
P.O Box : 454 Tel. : 22254005  
RECTOR'S OFFICE

DEPUTY VICE- CHANCELLOR IN CHARGE OF  
RESEARCH, CO-OPERATION AND RELATIONS  
WITH THE BUSINESS WORLD

N° **17/00099**  
/UN/R/RRCRNIE

Ngaoundéré, le **23 MAI 2017**

**Pr.Dr.rer.nat. Serge Doka Yamigno.**  
Deputy Vice- Chancellor in charge  
of Research, Cooperation and  
Relations with the Business World  
University of Ngaoundéré  
PO Box, 454  
Ngaoundéré, Cameroon

May 23, 2017

Institutional Review Board  
Andrews University  
4150 administrative Drive, Room 322  
Berrien Springs, MI 491040355, USA

**RE: Authorization to Carry out  
Research**

Dear Sir,

I am pleased to inform you that the request by Mr. **Samuel Adamou** to conduct a study on "**Students' perceptions of the influence of basic psychological needs and social support on student academic motivation at University of Ngaoundéré in Cameroon**" at the Faculty of Arts, Letters, and Social Sciences in the Departments of History, Geography, Sociology and Anthropology University of Ngaoundéré as part of his doctoral program has been granted. I have read through the synopsis of his

research protocol and am convinced that the outcome of this research will be valuable to higher education in Cameroon.

Students involved in the research will fill in a questionnaire. Mr. Samuel Adamou can include the collected data in his dissertation without any identification of students. The data should be secured until they are destroyed at the end of three years. Accordingly, the Faculty of Arts, Letters, and Social Sciences and the Departments involved in this research support this effort and will provide any assistance possible for the successful implementation of this study

Yours sincerely,

**Pr. Dr. rer. nat. Serge Doka Yamigno,**  
Deputy Vice-Chancellor in charge  
Of Research, Cooperation and  
Relations with the Business World  
University of Ngaoundéré



Permission to Use Need Support Scale, Need Satisfaction Scale, Motivation Scale

**Adamou Madi** <madiadamou@yahoo.fr>

**À** :m.standage@bath.ac.uk

**Cc** :adamou@andrews.edu

Dear Professor Martyn Standage:

It is a pleasure for me to meet you through your research even if you have never met me. I am a doctoral student in the School of Education, in the Department of Curriculum and Instruction, and at Andrews University ( MI, USA). I am currently conducting a research in the area of perceptions of basic psychological needs, environmental supports (teacher support, peer support), and academic motivation among university students completing a Bachelor's degree. I was researching instruments to conduct the study when I came across a research you conducted on a test of self-determination theory in school physical education. In the test of the model, you used the Need Support Scale ( autonomy support, competence support, and relatedness support), the Need Satisfaction Scale ( autonomy, competence, and relatedness), the Motivation Scale (Intrinsic motivation, identified regulation, introjected regulation, external regulation, and a motivation), and the Outcome Scale (positive and negative affect, concentration and task challenge). Where may I access the scales? May I please have your permission to use them in my study? I look forward to your response.

Thank you for your understanding,

Samuel Adamou

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**Martyn Standage** <M.Standage@bath.ac.uk>

**À** :madiadamou@yahoo.fr

**Cc** :adamou@andrews.edu

Most welcome to use.

Best

Martyn

APPENDIX F  
OBSERVED MODEL DATA OUTPUT



### Model Fit Summary

#### CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	36	128.094	55	.000	2.329
Saturated model	91	.000	0		
Independence model	13	2471.677	78	.000	31.688

#### RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.068	.953	.922	.576
Saturated model	.000	1.000		
Independence model	.480	.335	.224	.287

#### Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.948	.927	.970	.957	.969
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

#### Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.705	.669	.684
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

#### NCP

Model	NCP	LO 90	HI 90
Default model	73.094	43.887	110.016
Saturated model	.000	.000	.000
Independence model	2393.677	2235.041	2559.658

#### FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.335	.191	.115	.288
Saturated model	.000	.000	.000	.000
Independence model	6.470	6.266	5.851	6.701

**RMSEA**

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.059	.046	.072	.127
Independence model	.283	.274	.293	.000

**AIC**

Model	AIC	BCC	BIC	CAIC
Default model	200.094	202.833	342.223	378.223
Saturated model	182.000	188.924	541.271	632.271
Independence model	2497.677	2498.666	2549.001	2562.001

**ECVI**

Model	ECVI	LO 90	HI 90	MECVI
Default model	.524	.447	.620	.531
Saturated model	.476	.476	.476	.495
Independence model	6.538	6.123	6.973	6.541

**HOELTER**

Model	HOELTER	HOELTER
	.05	.01
Default model	219	246
Independence model	16	17

**Scalar Estimates (Group number 1 - Default model)**

**Maximum Likelihood Estimates**

**Regression Weights: (Group number 1 - Default model)**

		Estimate	S.E.	C.R.	P	Label
BPN	<--- SS	.609	.074	8.220	***	par_9
PS	<--- SS	.907	.091	10.008	***	par_11
SAM	<--- BPN	.233	.085	2.735	.006	par_10
TS	<--- SS	1.000				
SAM	<--- PS	.652	.069	9.473	***	par_18
AutoSatM	<--- BPN	1.000				
SocRelatM	<--- BPN	1.390	.118	11.779	***	par_1
TeachSocRelSupM	<--- TS	1.000				
TeachComSupM	<--- TS	1.098	.067	16.441	***	par_2

		Estimate	S.E.	C.R.	P Label
TeachAutoSupM	<--- TS	.887	.056	15.920	*** par_3
IntMotM	<--- SAM	1.000			
IdenRegM	<--- SAM	.936	.068	13.740	*** par_4
IntroRegM	<--- SAM	.647	.085	7.618	*** par_5
PeerSocRelSupM	<--- PS	1.000			
PeerCompSupM	<--- PS	1.023	.059	17.404	*** par_6
PeerAutoSupM	<--- PS	.631	.052	12.232	*** par_7
CompetSatM	<--- BPN	1.041	.095	10.998	*** par_8
ExterRegM	<--- SAM	.435	.091	4.799	*** par_12

**Standardized Regression Weights: (Group number 1 - Default model)**

		Estimate
BPN	<--- SS	.702
PS	<--- SS	.781
SAM	<--- BPN	.178
TS	<--- SS	.949
SAM	<--- PS	.666
AutoSatM	<--- BPN	.662
SocRelatM	<--- BPN	.814
TeachSocRelSupM	<--- TS	.765
TeachComSupM	<--- TS	.847
TeachAutoSupM	<--- TS	.807
IntMotM	<--- SAM	.804
IdenRegM	<--- SAM	.782
IntroRegM	<--- SAM	.422
PeerSocRelSupM	<--- PS	.844
PeerCompSupM	<--- PS	.838
PeerAutoSupM	<--- PS	.602
CompetSatM	<--- BPN	.701
ExterRegM	<--- SAM	.276

**Covariances: (Group number 1 - Default model)**

	Estimate	S.E.	C.R.	P Label
e9 <--> e17	1.020	.109	9.352	*** par_13
e8 <--> e17	.094	.051	1.860	.063 par_14

	Estimate	S.E.	C.R.	P Label
e6 <--> e12	.215	.026	8.151	*** par_15
e5 <--> e10	-.144	.027	-5.320	*** par_16
e4 <--> e12	.296	.034	8.667	*** par_17

**Correlations: (Group number 1 - Default model)**

	Estimate
e9 <--> e17	.566
e8 <--> e17	.097
e6 <--> e12	.489
e5 <--> e10	-.406
e4 <--> e12	.517

**Variances: (Group number 1 - Default model)**

	Estimate	S.E.	C.R.	P Label
SS	.664	.094	7.062	*** par_19
e14	.349	.058	6.007	*** par_20
e15	.254	.045	5.591	*** par_21
e13	.073	.050	1.465	.143 par_22
e16	.339	.055	6.152	*** par_23
e1	.641	.057	11.256	*** par_24
e3	.491	.066	7.406	*** par_25
e4	.522	.047	11.188	*** par_26
e5	.350	.039	9.017	*** par_27
e6	.309	.030	10.211	*** par_28
e7	.471	.058	8.090	*** par_29
e8	.478	.054	8.825	*** par_30
e9	1.654	.125	13.188	*** par_31
e10	.361	.045	8.109	*** par_32
e11	.396	.044	8.900	*** par_33
e12	.625	.047	13.178	*** par_34
e2	.561	.053	10.584	*** par_35
e17	1.962	.144	13.587	*** par_36

**Squared Multiple Correlations: (Group number 1 - Default model)**

	Estimate
PS	.610
BPN	.492

	Estimate
SAM	.605
TS	.901
ExterRegM	.076
CompetSatM	.492
PeerAutoSupM	.363
PeerCompSupM	.703
PeerSocRelSupM	.712
IntroRegM	.178
IdenRegM	.611
IntMotM	.646
TeachAutoSupM	.652
TeachComSupM	.718
TeachSocRelSupM	.585
SocRelatM	.663
AutoSatM	.438

**Standardized Total Effects (Group number 1 - Default model)**

	SS	PS	BPN	SAM	TS
PS	.781	.000	.000	.000	.000
BPN	.702	.000	.000	.000	.000
SAM	.645	.666	.178	.000	.000
TS	.949	.000	.000	.000	.000
ExterRegM	.178	.184	.049	.276	.000
CompetSatM	.492	.000	.701	.000	.000
PeerAutoSupM	.470	.602	.000	.000	.000
PeerCompSupM	.655	.838	.000	.000	.000
PeerSocRelSupM	.659	.844	.000	.000	.000
IntroRegM	.272	.281	.075	.422	.000
IdenRegM	.504	.521	.139	.782	.000
IntMotM	.518	.535	.143	.804	.000
TeachAutoSupM	.767	.000	.000	.000	.807
TeachComSupM	.804	.000	.000	.000	.847
TeachSocRelSupM	.726	.000	.000	.000	.765
SocRelatM	.571	.000	.814	.000	.000
AutoSatM	.464	.000	.662	.000	.000

**Standardized Direct Effects (Group number 1 - Default model)**

	SS	PS	BPN	SAM	TS
PS	.781	.000	.000	.000	.000
BPN	.702	.000	.000	.000	.000
SAM	.000	.666	.178	.000	.000
TS	.949	.000	.000	.000	.000
ExterRegM	.000	.000	.000	.276	.000
CompetSatM	.000	.000	.701	.000	.000
PeerAutoSupM	.000	.602	.000	.000	.000
PeerCompSupM	.000	.838	.000	.000	.000
PeerSocRelSupM	.000	.844	.000	.000	.000
IntroRegM	.000	.000	.000	.422	.000
IdenRegM	.000	.000	.000	.782	.000
IntMotM	.000	.000	.000	.804	.000
TeachAutoSupM	.000	.000	.000	.000	.807
TeachComSupM	.000	.000	.000	.000	.847
TeachSocRelSupM	.000	.000	.000	.000	.765
SocRelatM	.000	.000	.814	.000	.000
AutoSatM	.000	.000	.662	.000	.000

**Standardized Indirect Effects (Group number 1 - Default model)**

	SS	PS	BPN	SAM	TS
PS	.000	.000	.000	.000	.000
BPN	.000	.000	.000	.000	.000
SAM	.645	.000	.000	.000	.000
TS	.000	.000	.000	.000	.000
ExterRegM	.178	.184	.049	.000	.000
CompetSatM	.492	.000	.000	.000	.000
PeerAutoSupM	.470	.000	.000	.000	.000
PeerCompSupM	.655	.000	.000	.000	.000
PeerSocRelSupM	.659	.000	.000	.000	.000
IntroRegM	.272	.281	.075	.000	.000
IdenRegM	.504	.521	.139	.000	.000
IntMotM	.518	.535	.143	.000	.000
TeachAutoSupM	.767	.000	.000	.000	.000
TeachComSupM	.804	.000	.000	.000	.000
TeachSocRelSupM	.726	.000	.000	.000	.000

	SS	PS	BPN	SAM	TS
SocRelatM	.571	.000	.000	.000	.000
AutoSatM	.464	.000	.000	.000	.000

**Modification Indices (Group number 1 - Default model)**

**Covariances: (Group number 1 - Default model)**

	M.I.	Par	Change
e12 <--> e15	6.803		.059
e10 <--> e15	6.852		-.063
e10 <--> e12	6.811		-.065
e9 <--> e2	4.509		.097
e8 <--> e15	4.360		.056
e7 <--> e15	4.265		-.057
e7 <--> e10	4.335		.063
e6 <--> e15	8.876		.058
e3 <--> e6	4.877		.058
e1 <--> e2	4.715		.078

**Variances: (Group number 1 - Default model)**

M.I. Par Change

**Regression Weights: (Group number 1 - Default model)**

		M.I.	Par	Change
ExterRegM	<--- PeerAutoSupM	5.749		.142
ExterRegM	<--- TeachAutoSupM	4.806		.137
PeerAutoSupM	<--- BPN	6.966		.143
PeerAutoSupM	<--- ExterRegM	6.360		.060
PeerAutoSupM	<--- CompetSatM	6.885		.087
PeerAutoSupM	<--- IntroRegM	4.467		.052
PeerAutoSupM	<--- TeachComSupM	4.864		.069
PeerAutoSupM	<--- SocRelatM	5.561		.068
PeerSocRelSupM	<--- CompetSatM	4.595		-.076
IntMotM	<--- SocRelatM	5.098		-.079
TeachAutoSupM	<--- BPN	4.073		.094
TeachAutoSupM	<--- CompetSatM	4.930		.063
TeachAutoSupM	<--- SocRelatM	6.335		.062

		M.I. Par Change	
TeachComSupM	<--- CompetSatM	4.353	-.069
TeachComSupM	<--- IntroRegM	4.307	-.051
SocRelatM	<--- TeachAutoSupM	6.803	.124



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**Prize for Excellence.** University of Ngoundéré. 2000.

**Publications:**

Adamou, S. (2000, Juillet). Structure Mentale et Réalité Sociale dans les Monts Mandara. *Annale de la Falsh de l'Université de Ngaoundere.*

**Other Activities:**

**Church Elder.** (2007-2009). Seventh Day Adventist Church, Nanga-Eboko, Cameroon.

**Chair.** (2004-2005). Department of Education, Seventh Day Adventist Church of Yaoundé, Yaoundé, Cameroon.

**President.** (2003-2006). Mayo-Sava region Students' Association, Yaoundé, Cameroon.

**President.** (2001-2004). Seventh-day Adventist Students' Association of Northern Cameroon, Yaoundé, Cameroon.