Journal of Theoretical and Applied Information Technology
15th July 2019. Vol.97. No 13

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

STRUCTURING THE QUADRATIC EFFECT OF MOTIVATION TOWARDS MENTAL TASKS PERFORMANCE AMONG UNIVERSITY STUDENTS

ANATALIA N. ENDOZO, Ph.D.
Faculty, College of Education, Angeles University Foundation, 2009 Angeles City, Philippines

Email: solomon467@gmail.com, endozo.anatalia@auf.edu.ph

ABSTRACT

The concept of mental tasks performance is widely used, but practical evidence is essential to completely understand this construct and its related variables. The purpose of this paper was to explore the quadratic effect of motivation towards mental tasks performance and its relationship towards concentration, confidence, coping up with pressures and motivation among university students in the Philippines. Additionally, modern institutions are placing emphasis on motivation theories cognizant to mental task performance implications, Most of the studies focused on sports and descriptive findings lack critical investigation. Therefore, it is suggested that current theories could be developed as a new model. A questionnaire was adopted and version three of SmartPls software was utilized to structure the quadratic effect of motivation model with over four hundred respondents. All the suggested key drivers supported at the p-value <.5 and no quadratic motivation effect on cope with pressure. A total variance explained of 59.2% was achieved. Replication of this study in the future would support the generalibility of findings.

KEYWORDS: *Smartpls, Quadratic Motivation Effect, Mental Task Performance, Motivation, University Students*

1. INTRODUCTION

Mental tasks performance could be considered as a way in which individuals reacts in different situations. Learners that are mentally resilient may not only be highly spirited in stressful conditions and can cope up with various kinds of stresses, but flourish in them [1], [2]. Ability to cope with pressures may need high level of confidence; practically means that to enhance mental tasks performance, there is a certain need of element to achieve it [3].

According to self-determination theory, human beings have three basic psychological needs: a need for autonomy, competence, and relatedness. Cross-cultural research has shown that need satisfaction is necessary for all people's healthy development. Engagement, motivation, and well-being offer impetus to the value of mental tasks performance as a mechanism for optimizing human functioning.

An upsetting psychological needs satisfaction would be associated with higher/lower levels of mental tasks performance, positive affect, and performance and lower/higher levels of negative affect. It is also expected that mental tasks performance would be associated with higher levels of positive affect and performance and lower levels of negative affect. Further, environments would be related to mental tasks performance indirectly through psychological needs and those performances and affect through mental tasks.

Connaughton et al [4] affirmed that there is significant relationship between confidence, coping with stress and motivation towards mental tasks performance. Bull [5] stated that competitiveness, tough attitudes, extra mind-set and robust self-reliance could be adopted in the development of tough character. Valiente et al [6] stated that limited investigations have done on mental tasks performance in the context of student academic performance.

Additionally, intelligence of students may be influenced by their level of confidence [7]. Similarly, [8] affirmed that confidence, motivation and ability to handle pressures could enrich significant goals. Furthermore, [9] it was found out that mental tasks performance is associated with complex tasks of learning. It could be inferred from studies mental tasks

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

performance, concentration and coping up with pressures may be mediated by motivation effects.

This current study examines the relationship between level of concentration, motivation confidence and ability to cope with pressures towards mental tasks performance. Furthermore, quadratic effect of motivation towards mental tasks performance was mainly investigated in this study.

2. RELATED LITERATURES

Jones et al [12] affirmed level of motivation, confidence, level attention, and ability to handle pressures has influence of mental tasks performance model. Similarly, study on the role and importance and environmental factors, and psychological-skills training in the development of mental tasks performance are given emphasis. In particular, environmental factors can be manipulated and be given emphasis to aid the transfer of knowledge from scientific research into applied practice. However, of central importance is the development of independent problem-solving and personal responsibility through a challenging yet supportive learning environment.

To develop mental tasks performance, one must be gradually exposed to rather than shielded from demanding situations in order to learn how to cope. Also, as students become more emotionally mature, they should become increasingly involved in making decisions regarding their own development. Students should be encouraged and supported in reflecting upon setbacks and failures that occur as a natural part of the developmental process [6]. Negative experiences as well as the confidence-boosting outcomes of achieving goals provide opportunities for personal growth and allow important lessons to be learned.

From a practical perspective, these attributes had been broadly adopted to structure mental tasks performance in different context. Nevertheless, willingness to push oneself, work hard, and setting an attainable goals could be described as motivation for mentally resilient of the individuals [13], Bell et al [14] enhancing mental tasks performance under pressures may be influenced by the intervention of psychological skills and motivation in relation with the punishment avoidance construct and have significant influence, supported in the study.

Likewise, [15] the study also supported that psychological needs satisfaction could be associated with the higher or lower levels of mental tasks performance.

Furthermore, [15] aimed to determine whether mental tasks performance requires maintenance found consistent and related. Semi-structured interviews were conducted to elicit the participants' perceptions of how mental tasks performance can be cultivated and retained. Findings indicated that the development of mental tasks performance is a long-term process that encompasses a multitude of underlying mechanisms that operate in a combined rather than independent fashion.

Further, perceived underlying mechanisms are related to many features associated with a motivational climate of mental tasks performance such as enjoyment, mastery, various individuals, experiences in and outside, psychological skills and strategies, and an insatiable desire and internalized motives to succeed. It was also reported that once mental tasks performance had been developed, the three perceived underlying mechanisms were required to maintain this construct: a desire and motivation to succeed that was insatiable and internalized, a support network that included people around and effective use of basic and advanced psychological skills.

Regarding mental tasks performance attributes, psychological skills, motivation to succeed and resilience emerged as higher-order themes, indicating some overlapping themes with previous studies exploring attributes from students' perspectives. Creating a tough physical practice environment, a positive mental environment and providing mental tasks learning opportunities were themes that emerged as strategies used to build mentally sound individuals. Findings are discussed in reference to previous literature on mental tasks performance and the psychology of excellence.

Moreover, [16] affirmed that confidence could be controllable and uncontrollable in relation to mental amenableness, the findings found consistent in the studies including [17], [18]. Concentration or focus is the ability to attend to internal and external cues in mind to reduce nervousness. [13] [14].

Hardy [19] affirmed that use of cue words may help individuals adjust their focus of attention towards completion of a task. Studies emphasized that relationship exist between mental tasks performance and ability to handle pressures.

Mental tasks performance suggested as significant characteristic contributing to excellence, yet little researches has examined how

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

psychological skills such as motivation contribute to its development. Studies revealed that motivation significantly predicted mental tasks performance [18].

Specifically, motivation as psychological skill emerged as the strongest individual predictor for all dimensions of mental tasks performance. Thus, further support must be provided for motivation as a potential strategy in developing or enhancing the mental tasks performance among students. Study explored students' perceptions of mental tasks performance, precisely, three areas of mental tasks performance were explored including attributes, role of significant others, and strategies used to build mental tasks performance [18], [19].

In-depth interviews were conducted and lower and higher-order themes were developed to capture the main ideas of mental tasks performance. Further, similar ideas were identified such as the attributes to mental tasks performance which include performing under pressure, being motivated, being a hard worker, and anticipation.

In addition, students referred to teachers or mentors support, attributes and practices as being critical in developing mental tasks performance .Creating a positive but tough practice environment emerged as a dominant act to build mental tasks performance. In addition, the refrains of teaching mental tasks resiliency and enhancing students' psychological skills emerged [22]. Hereafter, framework demonstrated in figure 1.

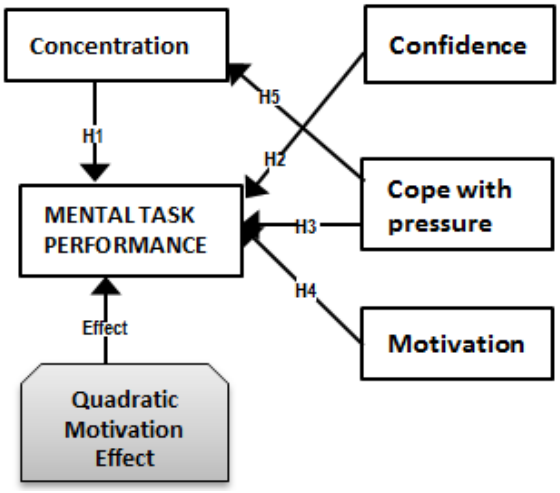

Figure 1: Hypothetical Conceptual Framework

2.1 Hypothetical Statement

Hypotheses of this particular study based on the established findings and recommendations

2.1.1 Mental tasks performance on Concentration

Studies stated that the ability to focus and concentrate on particular situation allows human beings to complete things remarkably. Furthermore, different kinds of distractions are the most reason why certain individuals were unable to focus at times. Most often, these are not noticeable as one envisions. In most cases, one might feel distracted and started blaming oneself for not having achieving due to lack of concentrations or control [7]; [8].

Moreover, the level of physical and mental performance may be hampered if concentration will not be taken into consideration across age, gender, and race. The study affirmed that performance can be affected by the ability to have proper attention [13] [18]. Most of the studies affirmed that there is a relationship between mental tasks performance and concentration in studies. Thus, hypothesized that; *H_1: mental tasks performance maybe influences by the level of concentration.*

2.1.2 Mental tasks performance on confidence

Researches related to confidence regressed on the performance relationship thus, it justified that performance affects confidence and vice-versa. A change in either will elicit a change in the other, for good or bad [7], established that there is relationship between the level of confidence and academic performance. The studies stated that when it comes to academic performance, confidence is as much as stronger predictor of success than self-esteem [4], [5]. Realistic feelings of confidence and positive self-esteem affect how individual think and act, how one feel about others, and how successful is one are in life [6].

A study affirmed performance-based group outperformed the competence-based group on test task performance and supported that tasks affect mentally. In addition; higher performance of the performance-based group was reached with lower reported mental effort during training, indicating a higher instructional efficiency for novice students. [6], [7], [13]. Thus, hypothesized that; H_2: mental tasks performance maybe directly influences by *level of confidence* among the university students based on the previous related studies[4], [5]; [6].

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

2.1.3 Cope with pressures on mental performance

Researches in an attempt to account for mental tasks performance via anxiety, cope with pressures and self-confidence-theory explanations in the study [4] was mentioned, the study supported that there is significant relationship among cope with pressures, anxiety and self-confident in the direction of mental tasks performance.

Furthermore, Connaughton et al [4] stated that ability to perform under pressure is necessary to achieve goals in various domains of life. The study conducted a systematic review to synthesize findings from the previous related applied studies that focus on interventions can develop and enhance individual's ability to cope under performance pressures.

Further, study assessed interventions to enhance understanding of the ways in which individual improve coping with the pressures and justified the relationships among cope interventions and performing well under pressure towards tasks [7], [8], [9]. A known requirement in producing excellence is the ability for an individual to execute vital self-regulatory processes under pressures. Thus, hypothesized that; *H_3: the ability to cope with pressure might influences mental tasks performance* [7], [8], [9].

2.1.4 Motivation on mental tasks performance

Motivation has always been the major aspect of researches centered on thoughtfulness among the instructors throughout the world; it constitutes to the mainstay of the education and learning [4]. This implied that motivation is one of the attributes promoting the students' willingness towards mental tasks performance.

Moreover, the term cognitive control itself suggests an intrinsic contrast to the sentimental processing level, raising question whether and in what manner motivation might influence mental operations [8]. Furthermore, motivation considered as a theme that has long center of study and practitioners seeking to understand human behavior and performance [8], this was found related to the aim of this study that centered on effect of motivation towards task mental performance and its relationship to different attributes.

Study designed to examine the problem of academic stress, its causes, symptoms and ways of controlling to enhance students' performance. Categorically, hypothesized that; *H4: motivation may influences mental tasks performance*, and based on related literature reviewed, this study assume that; H_5; *the ability to cope with pressures possibly influences level of concentration towards mental tasks performance*. In a nutshell, this study aimed to investigate quadratic effect of motivation towards mental tasks performance and its relationship with cope with pressures, concentration and confidence. Thus, presents the research methodology in the next section of this study.

3. METHODOLOGY

Sources of data included reviews of different books on the related topics, articles, journals, newspapers and magazines, as well as some printed materials. Considerable information gathered to support the study. This is a quantitative study, and recommended in a Likert scales questionnaire based studies [23] [24].

3.1 Unit of Analysis

Studies supported that units of analysis of studies could be classified into individual, group, organizational, social interaction and individual levels. The most common units of analysis in the social sciences, might suggest students, employees, unions, voters, managers, teachers, customers, sales representatives and so on [23] [24]. Accordingly, selected students from the Baliuag University and Angeles University Foundation were considered as the unit of analysis for this study.

3.2 Partial Least Squares Algorithm

Partial Least Squares is principally an order of regressions in the terms of weight vectors. [27].The weight trajectories attained at merging satisfied fixed point equations. Dijkstra [27] stated that PLS is suitable for a general analysis of such equations and convergence issues. Hair et al [26] also affirmed the quality of partial least square algorithm and how operates as it is implemented in the SmartPLS 3.0. Thus, SmartPls 3 was considered as analytical tool for this study.

3.3 Constructs Reliability and Validity

Reliability maybe describe as a consistency across time (that is, test-re-test), across the items (i.e., internal consistency), and across examiners (inter-rater reliability). Validity was considered as the extent to which the scores in reality represent the actual variables they are intended to represent.

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

Moreover, validity is a judgment that actually based on several types of indications [26] [27].

3.4 Discriminant Validity Reports

One of the most recommended approaches to test for discriminant validity on the construct level are AVE-SE comparisons, hereby the measurement error-adjusted inter-construct correlations derived from the factor analysis model should be used rather than the raw correlations obtained from the whole data-set [26], [27] and the assessment of the heterotrait-monotrait ratio of correlations [26],[27].

3.5 Amount of Results

All estimates based on complete bootstrapping which includes: Path Coefficients, Indirect Effects, Total Effects, the Outer Loadings, Outer Weights, *R Square*, *p-values,* the Average Variance Extracted (AVE), Composite Reliability, Cronbach's Alpha, and the Heterotrait-Monotrait Ratio (HTMT) [25], [26], [10]. [27]. However, *R Square and p-values* considered in the interpretation of the model [27].

4. ANALYSIS AND FINDINGS

4.1 Data Processing and Demographics

A total number of twenty-five survey questionnaires adopted as the instrument in order to match prediction and analysis tool such as SmartPLS [26]. Analysis based on a total number of four hundred and seventeen respondents from the Baliuag and Angeles University Foundation in the Philippines utilized, data analysis section presents more details.

A total of a 75 percent from the questionnaires (indicating four hundred seventeen) returned out of a sum of six hundred questionnaires distributed to the target respondents. A total number of thirty-one survey questionnaires were discarded (outliers and uncompleted).

The female donated with round-off 60%, this implied that females strived to educate than males. The ages range 17-20 indicated 55% of the total respondents Nursing/Medicine indicated a round off of 34% to top among the six colleges investigated in this study, next was College of Business and Administration which indicated a round off of 20% to take the second place.

This study suggested that students considered themselves to be medical doctors and professional nurses or business practitioners in the future rather than being a professional teachers or system engineers. The reason could be further investigated in the future studies. Thus, demographic details presented in table 1 of this study.

Table 1: Demographic details

Factors	Categories	Scores and %	
Total Gender	Male	166	39.8%
	Female	251	60.2%
Age	17- 20	229	54.9%
	21-24	188	45.1%
College	Nursing /Medicine	140	33.6%
	Education	45	10.8%
	Business and Administration	84	20.1%
	Arts and Sciences	50	12.0%
	Engineering	55	13.2%
	Information and Technology	43	10.3%

4.2 Constructs Reliability and Validity Matrix

Reliability and validity of this study achieved and reported according to the algorithm matrix recommendations which included Cronbach's alpha, rho_A, and composite reliability all above 0.7, as well as the average variance extracted of 0.5 achieved. Table 2 indicated average variance extracted, composite reliability, rho_*A* and cronbach's alpha of each constructs.

Table 2: Constructs reliability and validity

Matrix	Cronbach's Alpha	rho_A	Composite Reliability	Avera
	Cronbach'...	rho_A	Composite ...	Average Varian...
Concentration	0.778	0.791	0.871	0.694
Confidence	0.716	0.736	0.824	0.542
Cope with Pressure	0.774	0.859	0.860	0.675
Mental task performance	0.783	0.783	0.902	0.822
Motivation	0.754	0.786	0.842	0.574
Quadratic Effect 1	1.000	1.000	1.000	1.000

4.3 Discriminant Validity Reports

As aforementioned that discriminant validity is an important aspect of construct validity. Thus, the discriminant validity performed, significant values snapped with the indication of heterotrait-monotrait ratio of correlations [26], [27], and shown in table 3 of this study.

Journal of Theoretical and Applied Information Technology
15th July 2019. Vol.97. No 13

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

Table 3: Discriminant Validity Reports

Fornell-Larcker Criterion | Cross Loadings | Heterotrait-Monotrait Ratio (HTMT) | Heterotrait-Monotrai

	Concentration	Confidence	Cope with Pres...	Mental task pe...	Motivation
Concentration					
Confidence	0.279				
Cope with Pressure	0.311	0.224			
Mental task performance	0.768	0.547	0.493		
Motivation	0.259	0.292	0.372	0.812	
Quadratic Effect 1	0.337	0.091	0.210	0.177	0.363

Furthermore, relationships among the attributes analyzed.

4.4 Coefficients without the Quadratic Effect

Quadratic Regression Model form: Yi = β0 + β1X1i + β 2 X + ε i 2 1i □ where: β0 = Y intercept β1 = regression coefficient for linear effect of X on Y β2 = regression coefficient for quadratic effect on Y εi = random error in Y for observation i Statistics for Managers Using Microsoft Excel [26]. [27]

Hair et al [27] testing the overall quadratic model, one need to estimate the quadratic model to obtain the regression equation, results should be based the test statistic from completed bootstrapped samples. Thus, performed and the path coefficients achieved based on the sample means, *t-statistics p-values* and extracted illustrated in table 4 of this study.

Table 4: Path coefficients without quadratic effect

Mean, STDEV, T-Values, P-Values | Confidence Intervals | Confidence Intervals Bias Corrected

	Sample Mean (...	T Statistics (|O...	P Values
Concentration -> Mental task performance	0.42	3.84	0.00
Confidence -> Mental task performance	0.25	2.99	0.00
Cope with Pressure -> Concentration	0.26	2.61	0.01
Cope with Pressure -> Mental task performance	0.18	2.18	0.03
Motivation -> Mental task performance	0.32	3.13	0.00

All hypothesized found significant at p-value < .05 without the introduction of motivation quadratic effect as shown in Table 4 of this study.

One of the aims of this study was to develop a quadratic motivation model for universities to enhance the mental tasks performance among the university students.

Therefore, introduced the motivation quadratic effect, the results recommended the elimination of cope with pressures, because the construct found insignificant. Thus, re-specified motivation quadratic effect model after the removal of cope with pressures towards mental tasks performance. Figure 2 indicated the motivation total direct effects in the model.

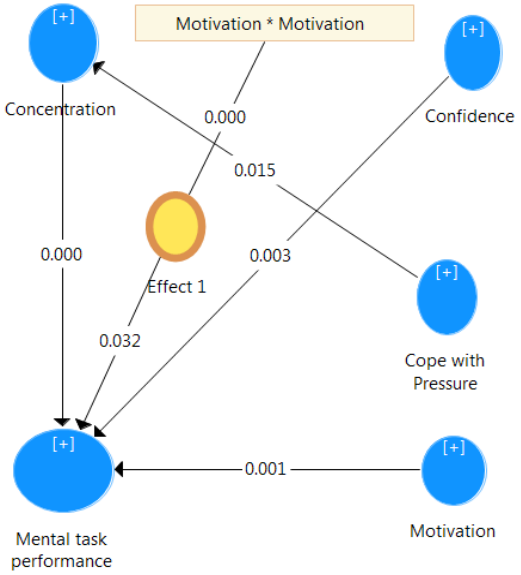

Figure 2: Motivation quadratic effect model.

Conclusively, all supported path coefficients significant at *p-values* < *.03*. In a nutshell, partial least squares algorithm reported about a 59.2% variance explained from the entire structured model. Ability to cope with pressures regressed on concentration construct justified least significant, level of confidence and motivation followed least significant respectively. Level of concentration construct was justified as top significant attribute in this study.

Meanwhile, concluded study on mental tasks performance among university students found consistent in study such as Clair-Thompson [29]. Moreover, robustness of variance explained analysis found significant in studies such as [30], [31]. Accordingly, demonstrated the summary of findings on

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

quadratic motivation effect model in table 5 of this study.

Table 5: Summary of findings

Mean, STDEV, T-Values, P-Values | Confidence Intervals | Confidence Intervals Bias Correc

	Sample Mean...	Standard Dev...	T Statistic...	P Values
Effect 1 -> Mental task performance	0.151	0.076	2.145	0.032
Concentration -> Mental task performance	0.503	0.101	4.993	0.000
Confidence -> Mental task performance	0.255	0.080	3.009	0.003
Cope with Pressure -> Concentration	0.250	0.090	2.433	0.015
Motivation -> Mental task performance	0.324	0.104	3.209	0.001

4.5 Research Pros and Cons Justification

This study focuses on the concept of quadratic effect of motivation towards mental tasks performance. The concept provides a useful framework to study the role of psychological attributes specifically that of motivation within an educational setting. In doing so, it reviewed previous researches and examined the mental tasks performance in higher education. It is common that the concept to which mental tasks performance aligns with is on the concepts on resiliency, buoyancy, perseverance, self-efficacy, confidence and motivation in education. The advantages of using mental tasks performance framework within education have further suggestions for future research.

This work has brought about a methodology at distinguishing concepts and information on the quadratic effect of motivation in education but seems limited. These newly concluded study can be reasonably demonstrated into utilizing another hypothetical model for testing and stressed the quadratic effect of motivation and emphasized that acknowledgment of psychological skills such as motivation influences mental tasks performance of university students.

4.6 Research Differences to Prior Studies

Various studies had taken place focusing mostly on the mental tasks performance in sports. Some studies dealt with identifying backgrounds, relationships with performance and psychological health. Mental tasks performance has frequently been associated with successful performance in sport; however, this currently concluded research suggests that it may also be related to academic performance in higher education. There are existing studies related to tasks performance and examined the relationship between mental tasks performance and different aspects of educational performance such as focusing on academic, school attendance, classroom behavior and peer relationships.

Prior studies revealed significant relationship between the aspects of mental tasks performance but particularly related to control of life, academic attainment and attendance. However, some studies focused also on significant relationships between several aspects of mental tasks performance specifically on the concepts related to control of life and classroom behaviour.

The literature on mental tasks performance is characterized by a general lack of conceptual clarity and consensus as to its definition, as well as a general failure to operationalize the construct in a consistent manner. Prior studies also addressed fundamental issues surrounding mental tasks performance on how can it be defined and what are the essential attributes required to be a mentally sound student. The resulting definition emphasized both general and specific dimensions, while the 12 attributes covered self-belief, desire/motivation, dealing with pressure, anxiety, focus (performance-related and lifestyle-related) and hardship factors.

Finally, another studies demonstrated significant associations between aspects of mental confidence in abilities, interpersonal confidence and peer relationships. The results of the study also discussed in terms of the potential value of mental tasks performance as a useful concept in education.

This study made it also different from previous studies, since it highlighted the significance of using quadratic effect to analyze the impact of the responses to different factors and find out the optimum factor levels for the proposed responses.

Furthermore, similar analysis on quadratic effect of motivation maybe absolutely suggested for future research. Likewise, a comparative study related to quadratic effect of motivation in academic setting can be conducted and strengthened since it appeared to be limited.

Moreover, this currently concluded study exhibited psychological skills such as motivation and played a significant role not only in academic setting but also in business and information systems industry.

Furthermore, this study also manifested external limits and internal points of interest of how psychological factors of mental tasks

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

performance can be fully and effectively function in the academic settings, thus contributing to globally competitive learners.

5. DISCUSSIONS & RECOMMENDATIONS

5.1 Discussion based on objectives

This concluded study presents quadratic effect of motivation towards mental tasks performance among the university students in the Philippines. The study investigated the significant impact of the factors towards academic success through sampling participants from university students mentioned.

The assumed factors investigated that were found significant without introduction of quadratic motivation effect included motivation, confidence, and concentration as well as coping with pressures towards academic mental tasks performance among the university students in the Philippines.

As aforementioned, concentration was found out to be the highest rank that contributes to achieve and maintain the mental task performance model. With this, it was justified that university students do not allow things to detract their attention from priorities and know how to stay dedicated often. This study agreed mental tasks performance among the university students significantly related towards focusing on controllable parts of studies, and then their performances will be extremely value-added.

Furthermore, the concluded study discovered that one of the important attributes to enhance mental tasks performance among university students in the Philippines was the level of motivation. The respondents adopted in this study identified to have a strong desire for success as manifested with their persistence to work hard and they know how to bounce back from performance tasks.

However, it was indicated in this study that students have strong-willed and determination to push them to have a better standard academic status. This study suggested that mental tasks performance among university students could be developed through internal and external motivations.

In addition, this study dealt with self-confidence aspects of the students as another attributes to tasks performance, it was found out that the university students have a strong belief of themselves to take risks and challenges towards achieving positive academic tasks performance.

In a nutshell, in terms of self-confidence towards mental tasks performance, this study justified that individuals' ability to control unwanted thoughts and feelings possibly be one of the approaches to perform a higher mental tasks, this could achieved in any field differs from physical education discipline of studies.

With regards to ability of coping with pressures among the respondents of this study, this indicated that students possibly be calm and thrive under pressures and they can interpret anxiety as a facilitative to performance, this study established that students mental tasks performance hardiness can be achieved through act of coping effectively in various tasks. Another study found out that one of the most important psychological factors or attributes towards mental tasks performance influencing students is concentration, meaning that the ability to handle stresses would inspire a higher level of concentration, and this results in the higher mental tasks performance of the students.

However, it was also noted and agreed that, an act of nervousness is inevitable to magnitudes of mental tasks performance in this study. Although, findings on coping up with pressures in relation to maintaining the level of mental tasks performance reflected the lowest value level achieved in this study. The study also affirmed that mental tasks performance studies can be investigated in different field of study apart from sports point of view.

5.2 Limitations of the Study

This concluded study solely based on the selected university students from third, fourth and fifth year levels, which was a small portion of the whole universities in the Philippines. Thus, results need to be validated with more participants to justify the generalizability of the findings.

The age brackets adopted in this study may considered as one of the limitations, because some students with same age noted in level two and they are not included in this study. The analysis involved a lot of modifications towards structuring the model; this was well thought-out to be another limit to this concluded study, thus, could be one of the reasons why revalidation using other techniques of analysis suggested.

6. CONCLUSIONS

Attributes to mental tasks performance investigated in this study included motivation, concentration, confidence, and ability to cope

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

with pressures, which had been previously established in previous studies related to physical education and various sporting fields.

However, most significant aspect of this concluded study was identifying the quadratic effect of motivation in relationship with attributes of mental tasks performance. Identifying the quadratic motivation effect toward mental tasks performance contributed to the uniqueness and originality of this investigation.

Moreover, significant factors of this study concluded and found to be adoptable in other fields of studies apart from sports and physical education. Thus, concluded that students could be meta-cognitively, emotionally and intellectually sound in tasks performance and management if this model could be properly adopted by universities. Future studies may replicate the whole study to support the generalibility.

7. ACKNOWLEDGMENT

The researcher acknowledged and appreciated the support of Angeles University Foundation and Baliuag University Special acknowledgment to Dr. Solomon Oluyinka, Baliuag University, Philippines for sharing his expertise, time and resources in the realization of this research.

REFERENCES

[1] Nicholls, A. R., Polman, R. C., Levy, A. R., & Backhouse, S. H. (2008). Mental toughness, optimism, pessimism, and coping among athletes, *Personality and individual differences*, 44(5), 1182-1192.

[2] Podrigalo, L., Iermakov, S., Rovnaya, O., Zukow, W., & Nosko, M. (2016). Peculiar features between the studied indicators of the dynamic and interconnections of mental workability of students. *Journal of Physical Education and Sport*, 16(4), 1211

[3] Gucciardi, D. F., Gordon, S., & Dimmock, J. A. (2008). Towards an understanding of mental toughness in Australian football, *Journal of Applied Sport Psychology,* 20(3), 261-281

[4] Connaughton, D., Hanton, S., & Jones, G. (2010). The development and maintenance of mental toughness in the world's best performers, *The Sport Psychologist*, 24(2), 168-193

[5] Bull, S. J., Shambrook, C. J., James, W., & Brooks, J. E. (2005), towards an understanding of mental toughness in elite English cricketers. *Journal of applied sport psychology*, 17(3), 209-227

[6] Valiente, C., Swanson, J., & Eisenberg, N. (2012). Linking students' emotions and academic achievement: When and why emotions matter. *Child development perspectives*, 6(2), 129-135

[7] Qualter, P., Whiteley, H., Morley, A., & Dudiak, H. (2009). The role of emotional intelligence in the decision to persist with academic studies in HE *Research in Post-Compulsory Education,* 14(3), 219-231

[8] Crust, L. (2008). A review and conceptual re-examination of mental toughness: Implications for future researchers. *Personality and individual differences,* 45(7), 576-583

[9] Hardy, L., Bell, J., & Beattie, S. (2014). A neuropsychological model of mentally tough behaviour, *Journal of Personality*, 82(1), 69-81

[10] Hair, J. F., Anderson, R. E. & Marko, S. (2012). An Assessment of the Use of Partial Least Squares Structural Equation Modeling in Marketing Research, Journal of the Academy of Marketing Science 40(3), 414-433

[11] Sheridan, J., Coakes, L.S. & Peta, D. (2006). SPSS 13.0 for windows; Analysis without anguish, *National Library of Australia*

[12] Jones, G., Hanton, S., & Connaughton, D. (2007).A framework of mental toughness in the world's best performers. *The Sport Psychologist*, 21(2), 243-264

[13] Butt, J., Weinberg, R. S., Breckon, J. D., & Claytor, R. P. (2011). Adolescent physical activity participation and motivational determinants across gender, age, and race, *Journal of Physical Activity and Health,* 8(8), 1074-1083

[14] Bell, J. J., Hardy, L., & Beattie, S. (2013).Enhancing mental toughness and performance under pressure in elite young cricketers: 2year longitudinal intervention, *Sport, Exercise &Performance Psychology*, 2(4), 281.

[15] Mahoney, J. W., Gucciardi, D. F., Ntoumanis, N., & Mallet, C. J. (2014). Mental toughness in sport: Motivational antecedents and associations with performance and psychological health. *Journal of Sport and Exercise Psychology,* 36(3), 281-292

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

[16] Machida, M., Marie Ward, R., & Vealey, R. S. (2012).Predictors of sources of self-confidence in collegiate athletes. *International Journal of sport and exercise psychology*, 10(3), 172-185

[17] Jones, M. I., & Parker, J. K. (2013). What is the size of the relationship between global mental toughness and youth experiences? *Personality and Individual Differences,* 54(4), 519-523

[18] Crust, L., Earle, K., Perry, J., Earle, F., Clough, A., & Clough, P. J. (2014). Mental toughness in higher education: relationships with achievement and progression in first-year University sports students, *Personality and individual differences,* 69, 87-91

[19] Hardy, S. A. (2006). Identity, reasoning, and emotion: An empirical comparison on the three sources of moral motivation. *Motivation and Emotion,* 30(3), 205-213

[20] Kaiseler, M., Polman, R., & Nicholls, A. (2009). Mental toughness, stress, stress appraisal, coping and coping effectiveness in sport. Personality and individual differences, 47(7), 728-733

[21] Connaughton, V. (2002). Baste (BATSE) observations of gamma-ray burst tails. *The Astrophysical Journal*, *567*(2), 1028

[22] Weinberg, R., Freysinger, V., Mellano, K., & Brookhouse, E. (2016) Building mental toughness: Perceptions of sport psychologists, *The Sport Psychologist*, *30*(3), 231-241

[23] Creswell, J. W., & Creswell, J. D. (2017). Research design: *Qualitative, quantitative, and mixed methods approaches Sage publications*

[24] Hussein, A. (2015). The use of triangulation in social sciences research: Can qualitative and quantitative methods be combined? *Journal of comparative social work*, 4(1)

[25] Ayodele, S. O., Oga, O. E., Bundot, Y. G., & Ogbari, M. E. (2016, October) Role of power supply towards e-learning acceptance: VBSEM-AMOS In i*nformation Communication and Management (ICICM), International Conference on* (pp. 151-155). IEEE

[26] Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: A comparative evaluation of composite-based structural equation modeling methods. *Journal of the Academy of Marketing Science*, *45*(5), 616-632

[27] Dijkstra, T. K. (2010). Latent variables and indices: Herman World's basic design and partial least squares. *In Handbook of partial least squares* (pp. 23-46). Springer, Berlin, Heidelberg

[28] Oluyinka, S. A. (2016). The role of trust as a mediator in the relationship between technology factors and intention to accept internet banking in Nigeria (Doctoral Dissertation, Universiti Tun Hussein Onn Malaysia)

[29] St Clair-Thompson, H., Bugler, M., Robinson, J., Clough, P., McGeown, S. P., & Perry, J. (2015), Mental toughness in education; Exploring relationships with attainment, attendance, behaviour and peer relationships. *Educational Psychology*, 35(7), 886-907

[30] Oluyinka, S.A., Endozo, A.N., & Calma, R.R (2018) A study on the acceptance of internet banking. In Proceedings of the 10th *International Conference on Education Technology and Computers* pp.374-370 ACM

[31] Ayodele, S., Endozo, A.N., & Ogbari, M. E (2018) A study on factors hindering online learning acceptance in developing countries. In Proceedings of the 10th *International Conference on Education Technology and Computers* pp.254-258 ACM