#### LYCEUM OF THE PHILIPPINES UNIVERSITY LAGUNA COLLEGE OF INTERNATIONAL TOURISM AND HOSPITALITY MANAGEMENT



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MODELLING THE INTERPLAY OF ACADEMIC PROCRASTINATION AND TECHNOSTRESS TOWARDS TOURISM AND HOSPITALITY MANAGEMENT'S ENGAGEMENT: MEDIATING ROLE OF TECHNOLOGICAL, PEDAGOGICAL, AND CONTENT KNOWLEDGE (TPACK)

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The main objective of this study is to describe the mediating effect of TPACK between procrastination and technostress on students' engagement during online learning.



#### **OBJECTIVES OF THE STUD'**



# **TECHNOSTRESS LEVEL**

#### LEVEL OF ACADEMIC PROCRASTINATION

#### LEVEL OF THE APPLICATION OF TPACK

RECOMMENDATION MODEL FOR STUDENT ENGAGEMENT



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# Methodology

Respondents: 400 bona fide tourism and hospitality management students of a Commission on Higher Education (CHED) recognized and PACUCOAaccredited school in Region IV-A (CALABARZON).

Sample Size: Inverse Square Root and Gamma Exponential

Methodology: Descriptive Statistics using SPSS Software

> Partial Least Square - Structural Equation Modeling (PLS-SEM) using WarpPLS 8.0





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#### **Demographic Profile**





## Demographic Profile





### Demographic Profile





## Procrastination

Question	WM	VI	Rank
1. I needlessly delay finishing jobs, even when they are important.	3.50	Disagree	9
2. When I have a deadline, I wait till the last minute.	3.69	Disagree	11
3. I delay making tough decisions.	3.44	Disagree	8
<ol> <li>I manage to find an excuse for not doing something.</li> </ol>	3.77	Disagree	12
<ol><li>I put necessary time into even boring tasks, like studying.</li></ol>	3.05	Slightly Agree	5
6. I am an incurable time waster.	3.78	Disagree	13
7. When something is too tough to tackle, I believe in postponing it.	3.66	Disagree	10
8. I promise myself to do something and then drag my feet.	3.03	Slightly Agree	4
9. Whenever I make a plan of action, I follow it.	2.12	Agree	2
10. I finish important jobs with time to spare.	2.10	Agree	1
11. I get stuck in neutral even though I know how important it is to get started.	2.94	Slightly Agree	3
12. I postpone starting on things I don't like to do.	3.09	Slightly Agree	6
13. Even though I hate myself if I don't get started, it doesn't get me going.	3.17	Slightly Agree	7
Over-all Mean	3.18	Slightly Agree	





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## Technostress

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Dimension	WM	VI	Rank	
Techno-overload	2.77	Slightly Agree	2	
Technoinvasion	2.74	Slightly Agree	1	
Techno-complexity	2.96	Slightly Agree 3		
Techno-uncertainty	3.55	Disagree	4	
Over-all Mean	3.00	Slightly Agree		

#### TPACK

Dimension	WM	VI	Rank
Technology Knowledge	3.71	Agree	7
Pedagogy Knowledge	4.27	Agree	1
Content Knowledge	4.19	Agree	2
Pedagogical Content Knowledge	3.98	Agree	4
Technological Content Knowledge	3.94	Agree	6
Technological Pedagogy Knowledge	3.98	Agree	3
Technological Pedagogy and Content Knowledge	3.96	Agree	5
Over-all Mean	4.00	Agree	





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# Student Engagement

Question	WM	VI	Rank
75. Students use a virtual lounge where they can meet informally to share common interests	3.94	Agree	24
76. Students complete an integrated e portfolio on the learning management system that is accessible in all courses	3.94	Agree	25
<ol> <li>Students introduce themselves using an icebreaker discussion</li> </ol>	3.84	Agree	27
78 Students moderate discussions	3.87	Agree	26
79. Students have choices in the selection of readings (articles, books) that drive discussion group formation	3.83	Agree	28.5
30. Students post audio and/or video files in threaded discussions instead of only written responses	3.83	Agree	28.5
1. Students interact with peers through student presentations (asynchronously and synchronously)	4.05	Agree	18
2. Students work collaboratively using online communication tools to complete case studies, projects, reports, etc.	4.16	Agree	2
3. Students peer review classmates work	3.97	Agree	22
<ol><li>Students are required to rate individual performance of team members on projects</li></ol>	4.04	Agree	19
5. The faculty refers to students by name in discussion forms	4.05	Agree	17
6. The faculty sends/posts regular announcements or email reminders	4.06	Agree	16
7. The faculty creates a forum for students to contact the faculty with questions about the source	4.00	A.g. 00	21
8. The faculty creates an orientation at the beginning of the online learning for students	4.17	Agree	1
9. The faculty posts a due date checklist at the end of each instructional unit	4.13	Agree	5
<ol><li>The faculty creates short videos to increase faculty presence in the course/unit/stream</li></ol>	3.95	Agree	23
1. The faculty provides feedback using various modalities (e.g. text, videos, audios, and visuals)	4.02	Agree	20
2. The faculty provides students with an opportunity to reflect (e.g. via journal or surveys)	4.07	Agree	15
3. The faculty posts grading rubrics for all assignments	4.14	Agree	4
4. The faulty use various features in synchronous sessions to interact with students (e.g. polls, emoticons, whiteboard, text, audio, or	video) 4.11	Agree	10.5
5. Students interact with content in more than one format (e.g. text, video, audio, interactive games, or simulations)	4.10	Agree	12.5
5. Students use optional online resources to explore topics in more depth	4.11	Agree	10.5
7. Students experience live, synchronous web conferencing for class events and/or guest talks	4.16	Agree	3
8. Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content	4.11	Agree	7
9. Students research an approved topic and present their findings in a delivery method of their choice (e.g. discussions, chat, web con	ference) 4.10	Agree	12.5
00. Students search for and select applicable materials	4.11	Agree	8.5
01. Students have an opportunity to reflect on important elements of the course (e.g. use of communication tools, learning, pro	ojects, and 4.09	Agree	14
02. Students work on realistic scenarios to apply content (e.g. case studies, reports, research papers, presentations)	4.12	Agree	6
03 Students use self-assessment to check their understanding of materials	4 11	Agree	85
Over-all Mean	4.04	Agro	0.0



## Model Fit and Quality Indices

Indices	Coefficient	Limit/Threshold	Remarks	Implication
Average Path Coefficient (APC)	0.281, P<0.001	p-value <u>&lt;</u> 0.05 (Hair e al. & Kock)	Significant/acce ptable	
Average R-squared (ARS)	0.293 <i>,</i> P<0.001	p-value <u>&lt;</u> 0.05 (Hair e al. & Kock)	Significant/acce ptable	Measure of Predictive Validity
Average Adjusted R-squared (AARS)	0.290, P<0.001	p-value <u>&lt;</u> 0.05 (Hair e al. & Kock)	Significant/acce ptable	
Average block variance inflation factor (AVIF)	1.124	p-value <u>&lt;</u> 0.05 (Hair e al. & Kock)	Significant/acce ptable	Measure of Collinearity and Multicollinearity
Average Full Collinearity Variance Inflation Fact or (AFVIF)	1.793	p-value <u>&lt;</u> 0.05 (Hair e al. & Kock)	Significant/acce ptable	(correlation between predictor variables)
Tenenhaus Goodness of Fit (GoF)	0.417	p-value <u>&lt;</u> 0.05 (Hair ϵ al. & Kock)	Significant/acce	Measure of a model's





							Engagement Q5	(0.687)						
Kesuits							Engagement Q6	(0.671)						
							Engagement Q7	(0.722)						
Measure	Lim	it/Threshold	L		Implicatior	1 I	Engagement Q8	(0.752)						
Item Loading		>0.6					Engagement Q9	(0.700)						
Item Loading	(Fornel	l & Larcker, & Kock)	l Me	easures of	question q	uality	Engagement Q10	(0.661)						
Average variances extracted		>0.5	CC)	onvergent	validity)		Engagement Q11	(0.767)						
(AVE)	(Fornel	l & Larcker, & Kock)					Engagement Q12	(0.812)						
Composite Reliability(CR)		>0.7	let		istopov of t	ha au cation	Engagement Q13	(0.778)						
composite reliability (or )	(Fornel	ll & Larcker & Kock)		emai cons construct	istency of t	ne questions	Engagement Q14	(0.760)						
Cronbach's Alpha (CA)		>0.7	(M	(Measure of Reliability)			Engagement Q15	(0.812)	0.611	0.978	0.976			
	(Fornel	ll & Larcker & Kock)					Engagement Q16	(0.774)						
Construct							Engagement Q17	(0.785)						
Construct		Item Loading		AVE	СК	CA	Engagement Q18	(0.833)						
Procrastination							Engagement Q19	(0.792)						
Procrastination Q1		(0.752)					Engagement Q20	(0.825)						
Procrastination Q2		(0.788)					Engagement Q21	(0.854)						
Procrastination Q3		(0.793)					Engagement Q22	(0.862)						
Procrastination O4		(0.741)					Engagement Q23	(0.830)						
Procrastination 06		(0.775)		0 548	0.916	0.896	Engagement Q24	(0.851)						
Procrastination 07		(0.790)		0.010	0.510	0.050	Engagement Q25	(0.875)						
Prograstination Q7		(0.730)					Engagement Q20	(0.832)						
Prograstination Q12		(0.011)					Engagement Q27	(0.836)						
Procrastination Q12		(0.725)					Engagement Q20	(0.824)						
		(0.66)					Lingagement Q23	(0.824)						
RATING SYSTEM						~			-					
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Engagement

Engagement Q2

Engagement Q3

Engagement Q4

Item Loading

(0.667)

(0.646)

(0.721)

AVE

CR

CA



Technostress	Item Loading	AVE	CR	CA
Techno-overload	(0.814)			
Techno-invasion	(0.792)	0.602	0.770	
Techno-complexity	(0.783)	0.005	0.858	0.779
Techno-uncertainty	(0.713)			
ТРАСК	Item Loading	AVE	CR	CA
Technology Knowledge	(0.758)			
Content Knowledge	(0.884)			
Pedagogical Knowledge	(0.865)	0.757	0.050	0.046
Pedagogical Content Knowledge	(0.914)	0.757	0.956	0.946
Technological Content Knowledge	(0.9159)			
Technological Pedagogical Knowledge	(0.917)			
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#### Square Roots of AVE Coefficients and Correlation Coefficients

	Procrastination	Engagement	Technostress	TPACK	Limit/ Threshold	Implication
Procrastination	(0.740)					Test whether the
Engagement	0.047	(0.781)			For each variable, the square root of	statement is related to one
Technostress	0.496	0.043	(0.7763)		the AVEs should be	another and not
ТРАСК	-0.001	0.736	-0.075	(0.870)	greater than any of the correlations involving the said variable (Fornell & Lar ke)	confusing with the statements connected with another variable (Discriminant Validity)

Diagonal elements are the square of AVE of constructs & dimensions, while the off-diagonal elements are correlational between constructs.





#### **Mediation Model Results**

#### Structural Model (Inner Model)







# Direct Effects of the PLS Path Model

	β	SE	p-value	f2	Limit/ Threshold	Implicat ion
Technostress>Procrastination	0.533	0.046	<0.001	0.284		Has medium effect
Technostress>TPACK	-0.138	0.049	0.003	0.027		Has small effect
Procrastination>TPACK	0.170	0.049	0.006	0.023	0.02 = small 0.15 = medium	Has small effect
Technostress>Students Engagement	-0.096	0.049	0.026	0.025	0.35 = large	Has small effect
Procrastination>Students Engagement	0.083	0.049	0.051	0.021	(Cohen & Kock	Has small effect
TPACK>Students Engagement	0.710	0.045	<0.001	0.527		Has large effect

Note: The effect sizes ( $f_2$ ) were measured using the following: 0.02 = small, 0.15 = medium, 0.35 = large; SE = standard error (Cohen, 1988),  $\beta$  = standardized path coefficient.







## Indirect Effects of the PLS Path Model

	β	SE	p-value	f2	Limit/ Threshold	Implication
Total effect(c1)	0.498	0.051	<0.001	0.183		
Direct Effect (c1'): Procras >SS_Engmt	-0.096	0.035	0.006	0.022		TPACK positively
Path a: Procrastination>TPACK	0.120	0.051	< 0.001	0.247		mediates Procrastination and
Path b: TPACK>SS_Engmt	0.710	0.047	< 0.001	0.727		Student Engagement
Indirect Effect (a*b): PC>TPACK >SE	0.594	0.036	<0.001	0.161	0.02 = small 0.15 = medium	
iotai enect(cz)	0.002	0.055	<0.001	0.105		
Direct Effect (c2'): Technostress >SS_Engmt	-0.100	0.050	0.0139	0.014	(Cohen & Kock	TPACK positively
Path a:TechnostressTPACK	-0.138	0.035	0.031	0.013		mediates Technostress and Student
Path b: TPACK>SS_Engmt	0.710	0.047	< 0.001	0.527		Engagement
Indirect Effect (a*b): Technostress- ->TPACK>SS_Engmt	0.102	0.037	<0.001	0.089		

Total effect c is equal to the sum of direct effect c' and indirect effects; i.e. c = c' + (a\*b)







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## **Mediation Model Results**

Collinearity			Coefficient of Determination				Predictive Relevance					
Construct	Full collinearity VIF	Limit/ Threshol d	Implication	Construct	R2	Limit/Thresh old	Implication	Construct	Q2	Limit/ Threshold	Implication	
Technostress	1.337	< 5		Technostress		0.19-wook		Technostress				
Procrastination	1.336	(Hair et al. & a		No Collinearity	Procrastination	0.280	0.33- moderate:	weak	Procrastination	0.284	Greater than zero	Has the
Engagement	2.191		No Collinearity among variables	Engagement	0.573	0.67- substantial	moderate	Engagement	0.574	(Hair)	capability to predict	
ТРАСК	2.190	Kock)		k) TPACK 0.040 weak	weak	ТРАСК	0.049					
Measure o Multicollin (correlation variables)	f Collinear earity n betweer	rity and n predic	tor	The R2 measures the overall effect size and variance explained and a measure of the model's predictive accuracy				Q2 criterion the concep predict the variable	i recol tual n endo	mmend: nodel ca genous	s that an latent	



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#### Proposed Mediating Model of TPACK on Procrastination, Technostress and Student Engagement





## CONCLUSION AND RECOMMENDATION

- Using the PLS-SEM, it is well noted that variables have a direct relationship except for procrastination to student engagement
- The findings of this research are likely to offer new information in an online class as the body of knowledge, as constructs labeling TPACK's mediating role to procrastination and technostress towards students' engagement.
- This will be a contributory factor in addressing students' issues and concerns associated with student engagement.





## CONCLUSION AND RECOMMENDATION

- This effect can be the basis for educational institutions to strategize on TPACK to ensure an increase in student engagement despite technostress and procrastination
- TPACK is highly suggested to the institutions since it is very effective in hyflex and flexible learning as shown on the results.
- It is advised to assess and reassess the faculty members' technological knowledge. Continuous training should be facilitated for ensure the improvement on this technological skills.
- In terms of the implication of the study, it is suggested that future studies should include students from different programs in both private and government academic institutions so that the findings can be generalized.





Thank you!

