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EDITORIAL & REVIEW POLICIES AND PROCEDURES

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JIRSEA: PUBLISHING POLICY

The Journal for Institutional Research in South East Asia (JIRSEA), an online journal, that is Scopus Indexed, is published electronically on a biannual basis. In 2017, a decision by the SEAAIR Executive Committee to celebrate the inclusion in the JIRSEA issues of the top "Best Paper" and "Outstanding Papers" selected from the annual SEAAIR Conference by a panel of judges on-site. In 2020, a Preliminary Review was instituted, before the double-blind review, to ensure potential papers reach journal generally accepted standards. All publications, invited or selected, undergo the due diligence of the double-blind review process, after revisions based on the preliminary review, by independent international reviewers. Original research papers, which have not been submitted for publication elsewhere, dealing with all aspects of institutional research, governance & planning, quality & performance management, instructions & instructional technologies, and related issues in tertiary education will be considered.

All papers are refereed by two independent persons and evaluated according to:

1. Significance in contributing new knowledge
2. Technical, Scientific and Academic acceptability
3. Appropriateness for the Journal IR and Higher Education Focus
4. Clarity and Competencies of academic research.

Updated October 2020

Editorial

In this September/October 2020 issue, we have continued with the newly instituted "preliminary review" process to "screen out" papers before the formal double-blind review process. This has consistently resulted in 60% of papers being declined due to relevance to JIRSEA focus on Higher Education issues or Institutional Research and those that do not meet the "sound scientifically grounded" research requirements of JIRSEA. Of the 9 papers that went through the Preliminary Reviews with revisions re-submitted, four papers are accepted for this issue publication after the rigorous and stringent vetting process. These four papers cover key academic areas: the academic discourse of development of an enhanced contemporary multifaceted diversity framework, academic job satisfaction, teacher performance, and looking at the interpersonal skills of medical graduates.

The key synopses of these four papers are as follows:

- **Teay Shawyun of** *Suvarnnabhumi Vocation Institute of Technology, Thailand***,** and **Somkiat Wattanasap** *MahaChulalongkorn University, Thailand,* provided an in-depth academic discourse on "Multifaceted Diversity-Discrimination-Divide Disparities Dilemma and 20|20 Education for All". This academic paper proposes to convene an academic discourse of (1) the contemporary Diversity and 20|20 Education; and (2) by re-looking at the diversity interplays with intermediating multifaceted diversity-discrimination-divide multifaceted variables of an often overlooked 4 human-systemic external personal-personifications, psycho-pretense, political-pretense, and power-posture dimensions and 20|20 Education. These interweaving and interlocking relationships across all these human-systemic based variables are discussed with 4 sets of the hypothesis that can lay the groundwork of future researches into the contemporary diversity factors that are complicated by the multifaceted relational variables effects.
- **Sophia Shi-Huei Ho of** *University of Taipei, Taiwan***, Cheng-Ta Wu, and Robin Jung-Cheng Chen** both from *the National ChengChi University, Taiwan* developed a paper entitled **"**What matters on academics' job satisfaction? An analysis from Taiwan APIKS survey". This study examines the perspective of university teachers in Taiwan, leaving insights on the perception and approval of teaching, research, university governance, and the correlation between the three constructs with job satisfaction, as well as unearthing whether these constructs foreshadow job satisfaction. Overall results indicate that: (1) policy content influences academics' intentions; (2) crisis awareness acts as the best motivation for universities and teachers to initiate change; (3) institutional characteristics had the highest influence and predictive power on teachers' job satisfaction; and (4) emphasis on the institution's mission, effective leadership, good communication, and collegiality in the decision-making process will increase job satisfaction

- **Tao-Ming Cheng** of *Chaoyang University of Technology, Taichung, Taiwan,* **Hsing-Yu Hou** of *National Taichung University of Science and Technology, Taichung, Taiwan,* **Dinesh Chandra Agrawal, Sung-Chi Hsu, and Hsien-Tang Wu**, all from the *Chaoyang University of Technology, Taichung, Taiwan, developed research entitled on, "* Data Mining the Categories of Teachers and offering Promotion Strategies for the Mainstream - Case of a Technology University in Taiwan". The study attempts to diagnose the categories/clusters of teachers in a case university and devise suitable evaluation measures for their promotion. It shows that Teachers' teaching evaluation scores varied significantly by gender and had a positive relationship with research, service, and student performance. Concerning the professional title, 70% of teachers (lecturers, assistants, or associate professors) belonged to the teaching group, and merely 3% of faculties in this group got promotions in the last eight years.
- **Sai Tarishini Sathiyasenan** of *Universiti Kebangsaan Malaysia, Malaysia***, Nalini Arumugam,** and **Puspalata C Suppiah** both from *Universiti Teknologi MARA, Malaysia***, and Sai Dharinee** of *Management & Science University***,** looked at "Medical undergraduates: Interpersonal Skills and Academic Achievement". This study investigates the impact of extracurricular activities (ECA) on undergraduates' academic performance as well as the enhancement of their interpersonal skills. The results show that though students perceived participation in extracurricular activities enhance their academic performance, a non-significant regression equation was found in the analysis ($F(1, 198)=0.70$, $p>.0.5$ with $R=.019$ and an R-Squared (R^2) of .000, indicating that there is no significant relationship between extracurricular activities and academic performance. However, for enhancement of interpersonal skills through extracurricular activities, a substantial regression equation was found ($F(1, 198)=116.5$, $p<.01$, with $R=.610$ and an R-Squared of .375.

JIRSEA Editor: Assoc. Prof. Teay Shawyun, Ph.D.

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PAPERS

MULTIFACETED DIVERSITY-DISCRIMINATION-DIVIDE DISPARITIES DILEMMA AND 20|20 EDUCATION FOR ALL

Teay Shawyun[1] and Somkiat Wattanasap[2]

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ABSTRACT

Diversity is both a celebrated and controversial issue affecting human life and wellbeing notably in the education arena. It is a celebration when people and partisan parties recognize and respect the multifarious human diversity factors to assimilate them into an integrated society living, learning, and sharing in peace and prosperity. It is a controversy when these multifarious diversity chains and linkages are broken through discriminatory differences and divides leading to disharmonious disparities and potentially endangering sustenance and survival. HEIs or governing parties have strived to recognize and respect diversity in the education playgrounds through a set of myopic lens leading to a set of myopic policies that deal with a specific diversity variable as opposed to a multifaceted approach. This myopic approach has consistently been a "pretense" of actions that leaders and governing parties address diversity albeit on a specific diversity variable. To address this issue, this paper proposes to convene an academic discourse of (1) the contemporary Diversity and 20|20 Education; and (2) by re-looking at the diversity interplays with intermediating multifaceted diversity-discrimination-divide multifaceted variables of an often overlooked 4 human-systemic external personal-personifications, psycho-pretense, political-pretense, and power-posture dimensions and 20|20 Education. These interweaving and interlocking relationships across all these human-systemic based variables are discussed with 4 sets of the hypothesis that can lay the groundwork of future researches into the contemporary diversity factors that are complicated by the multifaceted relational variables effects. While there can be multifarious relationships across variables, coming up with a set of findings, implications and recommendations is still within the context of the realities of these operands within a set of unique societal constraints and accepted norms, of which this paper will not venture into due to the complexity of the human-systemic multifaceted factors.

Keywords: Contemporary Diversity and 20|20 Education Framework, human-systemic factors of personal-personifications, psycho-pretense, political-pretense, and power-posture dimensions

Introduction

William Shakespeare's 1599 "All the world's a stage, and all the men and women are merely players" is as apt in the past as in today's local, national and international stages showcasing of splendors and turmoil whereby humans are the manifold stage actors with multifaceted and exceedingly diverse demographic credentials. The stages and actors are still as diverse as in the past but more drastically and dramatically painted due to the availability and access to confounding and bewildering successes and sufferings of the through multiple diverse stage actors' acts in a different hemisphere of the world.

Genetically, every race has the same coloring pigment, melanin, in their skin. Regardless of being Africans, Europeans, Americans, Asians, Black, White or Yellow heritages, all have the same skin pigment. All people have about the same number of melanocytes with the main difference being people with darker skin had more melanin present in their skin, thus the skin great variety amongst population groups and individuals. (Just Facts, 2020; World Book, 2019; Wierzbicki, 2015). This shall mean that mankind is the same species, and regardless of the multifarious diversity factors, they shall live harmoniously as brothers and sisters. But history has told of many stories that these very diversity factors are the very reasons for discriminations and divides across the human life spectrum.

Human's fundamental equality right is echoed by the U.S. governance framework in "…. government of the people, by the people for the people" and "… proposition that all men are created equal" as enshrined by U.S. President Abraham Lincoln's Gettysburg Address. Over the centuries, the 1863 Gettysburg's lofty ideals of governance and equality have given way to the 21st-century discriminations and divide of diverse people across the disparate scale and scope of age, gender, race, religions, income-wealth, ethnics, and others. These disparities and in-equalities affecting the norms and standards of "decent" human lives and education have paved the way to key international or national legislations. Some of the more prominent education access and equality frameworks to address the present day's diversity issues are the: (1) 9 protected areas of discriminations of "The Equality Act 2010" (EHRC); (2) 2015 UNESCO's Education For All (EFA), agreed by 155 Governments on universal primary education and gender equality in education with the SDG 4-Education 2030 focusing on increased and expanded access, inclusion and equity, quality and learning outcomes at all levels; (3) No Child Left Behind Act of 2002 (NCLB).

Diversity underpinning the cherished "Education for All" Agenda is still in disarray over the years as shown by the UN, internationally, or nationally sponsored bills. As noted by some of the key bills above, tackling the issues and dilemma is facing an uphill battle against diversity disparities, divides, and decimations. Each nation tackles diversity-discrimination-divides-decimations in its way within its context through its legislations. These have grown more difficult through internal-external migration and refugees asylum seekers compounding national

diversity issues as illustrated in the migrants' crisis in Europe that is better documented than internal migrations or those in Asia-Pacific.

In 2020, the diversity-discrimination-divides-decimations issue is compounded by a natural pandemic, the Covid-19, which is used to illustrate the human-systemic factors of the diversity-discrimination-divides-decimations affecting 20|20 Education for All in this paper discourse. Seemingly, the Covid-19 health pandemic does not discriminate against humanity as it has affected all countries, all races-ethnicity-social standing, income-wealth brackets, and all age-gender groups. Interestingly, early data showed definitive "discriminating and decimating" fatalities on the diversity demographic factors. On the race-ethnicity-colors front, April-October 2020 US data reported a disproportionate 60% to 70% death rate of "colored people" in certain states of Louisiana, Illinois, Michigan, etc., where these groups, make up only 20% to 35% of the states' population. Experts hypothesized the cause of the higher death rates due to high-density areas where the lower-income impoverished-marginalized colored groups live. In other countries, the main lower-income impoverished-marginalized racial-ethnic groups are those centered in high-density slums, refugees or migrants squeezed into limited small habitats in refugee camps seeking safety-security-sustainability from displacements-conflicts hotspots. Due to their lower social class status or racial-ethnic-political conflicts induced displacements or income-wealth marginalization, these race-ethnics-colors groups have lesser availability, accessibility, and affordability to the high cost of health care that undermines their daily livings albeit their education or their children's education prospects or aspirations. On the gender factor side, world data also showed that the females are hit harder than males as hypothesized of their biological but predominantly behaviors that fall into the personal-personified or psycho-pretense terrains. On the age factor issue, early Eastern and European data also showed that the group hardest hit are those in the higher age bracket of 65 and above with chronic health issues, but later data also showed that younger people and children are also open to the fatalities of this pandemic. Covid-19 has also resulted in 40+ million filings for unemployment in the U.S. from Mid-March to May 2020 thus furthering the financial losses undermining livelihoods where survival is the name of the game rather than 20|20 Education for All.

Most developed countries, topping the pandemic list, report higher than ever unemployment rates, highly reduced GDP moving into economic contraction or recession with economic growth missing their targeted projections. Hard-hit countries resorted to the use of fiscal and monetary policies to save and sustain their economies. This health pandemic shows that diversity issues know no boundary of discrimination-decimation due to the divides of their race-ethnics-colors and related income-wealth impoverization-marginalization. The pandemic is compounded by the BLM (Black Lives Matters) and anti-racism protests centered in the U.S of police brutality that has been taken up globally in solidarity with discriminations-divides on a race basis. On the education front, countries are fighting to find a safe and sound environment to balance the learning-life endeavors of children and universities students. These further the case that the diversity issue and its impact on the education front is a multidimensional and multifaceted issue

that cannot and should not be dealt with independently and should be re-looked and addressed at the root cause.

Multifaceted DDDD (Diversity-Discrimination-Divide Dilemma) factors of 20|20 Education for All

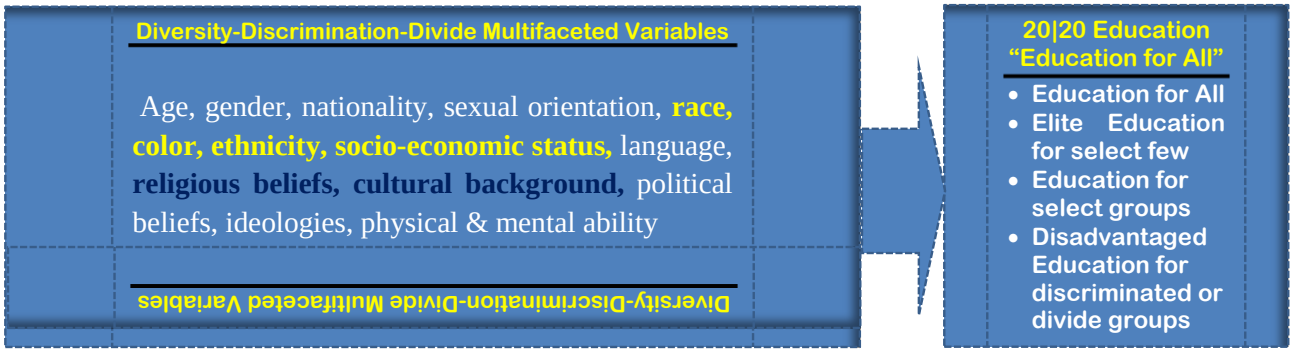


Figure 1: Proposed Contemporary Diversity and 20|20 Education Framework

Diversity is much more prevalent in the Western Hemisphere than in the Eastern Hemisphere even though diversity exists in all countries and continents. This is evidential in the diversity researches (Triandis, et.al., 1994; Knippenberg & Schippers, 2007; Knippenberg, & Mell, 2016) or of actions by governments, international organizations, or NGOs on these issues that are more predominant and documented in the Western than Eastern world societies. These researches and actions normally highlight more complex conceptualizations of diversity issues of race, religious beliefs, color, ethnicity, and gender while those related to political beliefs-ideologies, socio-economic status, cultural background, physical & mental ability are scantily covered but beginning to be given more attention. One of the issues is that most diversity factors are dealt with independently as opposed to inter-related or integrated aspects. This is especially so in the fact that the race-color-ethnicity, socio-economic status, and religious-cultural beliefs are much more related than unrelated that should be looked at from its multifaceted perspectives. This inherently means that dealing with diversity issues needs to be dealt with as inter-related and interdependent multifaceted constructs of many-to-one or many-to-many relationships rather than a one-to-one relational construct impacting on 20|20 Education for All. This serves as the rationale of the proposed contemporary diversity multifaceted variables related to the 20|20 Education for All approach of this research paper (Figure 1).

Knippenberg and Mell, (2016), highlighted two_important challenges in moving the diversity research field forward in two key areas of (1) integrating diversity research with its emphasis on diversity in relatively stable attributes – ***trait diversity*** – with research in more state-like composition variables – ***state diversity***; (2) integrating research in compositional diversity with research on ***emergent diversity*** – diversity in team interaction processes and team emergent

states. Based on this multifaceted interrelatedness of the diversity constructs, this paper proposes to relook the diversity issues from two main additional vectors:

1. **Contemporary Diversity-Discrimination-Divide Dilemma (DDDD) –** Diversity in itself is celebrating the uniqueness of the human species. Adding discrimination to diversity transforms it to be a disparate beast that needs reigning in, and adding divide to the diversity-discriminating beast is the divide issues pervading all levels of societies as decimating disasters. These DDDD inter-related factors are presumably undermining the success of the 20|20 Education for All, that favors elitist or special group "access" to elitist and potentially "higher quality" education due to better resources as opposed to the lofty aspirations of 20}20 Education for All.
2. **HS (Human-Systemic) Factors interplay in HS-DDDD (Diversity-Discrimination-Divide Dilemma) Equation –** Compounding the DDDD issue is the often overlooked human-systemic vectors of personal-personifications of the individual and his/her psycho-pretense innate behaviors and actions that only is known to the individual himself or herself. A simple display is the claims to the 1st Amendment of the U.S. and other countries' "rights civil codes" as to the protection of several basic liberties — freedom of religion, speech, press, petition, and assembly. The issue is simplistic in that everyone can claim this basic right that is legally correct but often overlooked is the "selfish" psycho-pretense practices that infringe on others' rights, thus causing personal-partisan clashes of ideologies-beliefs and societal havocs. There are still the human codes that science can never unlock through psychological or behavioral studies that can only shed light on certain assumptions to understand the human codes. When the human works within its social systemic domains of the political-precepts and power-postures, as political-partisan camps, sectarian-religious groups, and elitist-activist groups, "crowd herding" mentality rise to the forefront that can either break or help the diversity issues. These human-systemic factors, though seemingly unrelated can have potentially great effects on the DDDD and compounding the DDDD issues thus making Education for All being affected by them is mostly in destructive or negative ways.

Discussion and Analysis of Contemporary DDDD (Diversity-Discrimination-Divide Dilemma) factors

Thomas Jefferson's U.S. Declaration of Independence (1776) "all men are created equal" has been called an "immortal declaration", but in reality, "all men are born unequal" into differing spectrums of elitist-egalitarian, black-white, high-low income-economical-social status-ethnicity-caste, the root cause of all diversity issues. Due to this inequality of the human's birth rights of being "born into differing strata of society with differing attributes-characteristics", these

underpin the beauty-beastly-decimating aspects of diversity, as advocated in the following section.

a) Diversity as celebrated uniqueness

The concept of diversity encompasses acceptance and respect that each individual is unique, and has individual differences. Diversity encompasses all those differences that make us unique, including but not delimited to age, race, gender, color, ethnicity, language, nationality, sexual orientation, religious beliefs, political beliefs, or other ideologies, socio-economic status, cultural background, and physical and mental ability (Diversity.com, 2020; QCC 2020). Diversity is a reality created by individuals or groups from a broad spectrum of demographic, pragmatic-realistic, and philosophical differences that need full understanding and appreciation, and that each individual or group is unique and different that needs to be recognized and respected. It is this very unique "difference" that needs to be "celebrated" as "individualistic beauty", so diversity in itself is an untarnished beauty.

b) Diversity-Discrimination as disparate beasts

"Discrimination means treating a person unfairly because of who they are or because they possess certain characteristics" (EOC, 2020). Under similar circumstances, discrimination (EOC, 2020; EHRC, 2010) (Figures 2 and 3) can occur in the following forms: (i) **Direct Discrimination** is when a person is treated less favorably than others, e.g., you have the qualifications and experience necessary for the job but your application is turned down because you are 'too young' or 'too old' or just based on the color of "skins" that automatically put you in the lowest categories of jobs; (ii) **Indirect Discrimination** is whereby a rule or policy puts you at a disadvantage as compared to others, e.g., an organization includes a clause that forces all employees to work on Sunday or Friday that is unlawful to a certain religion to work on these holy days; (iii) **Discrimination by Association** whereby one is treated unfairly because someone you know or are associated with has a protected characteristic. This may be construed as discrimination by association, e.g., being refused certain service because of being in the company of someone who belongs to a particular race; (iv) **Discrimination by Perception** is receiving unfair treatment because someone thinks you belong to a group with protected characteristics or experiencing discrimination by perception e.g., an agency refuses to provide service to a heterosexual because of perception as gay due to misconceptions about how gay people look, dress or behave; (v) **Harassment** that comprises of unwanted behavior making another person feel offended, humiliated or intimidated through physical gestures, abuse, jokes, spoken or written words or offensive emails and expressions e.g., male passing sexual comments or telling unwelcome jokes within earshot of a female; and (vi) **Victimization** whereby one is treated badly or subjected to detriment because of complaint or supporting discrimination, e.g., one is denied training or advancement avenues at work because one filed a sexual harassment complaint against your boss.

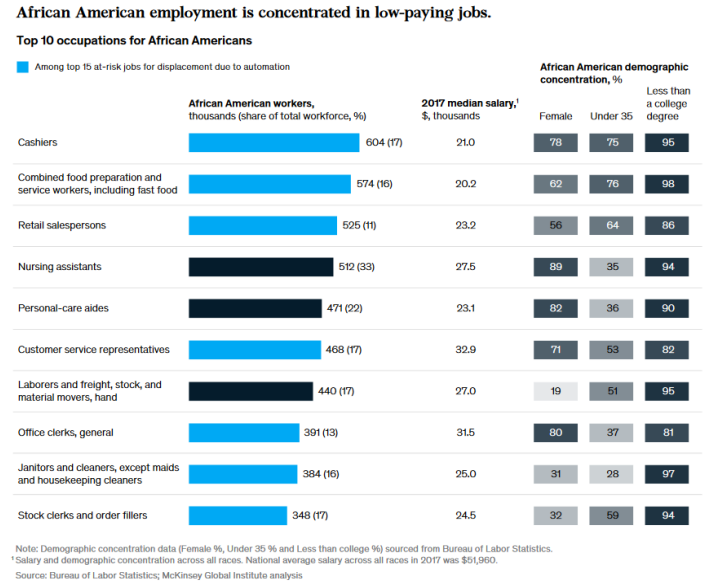


Figure 2: Discriminations of African Americans in low-paying jobs

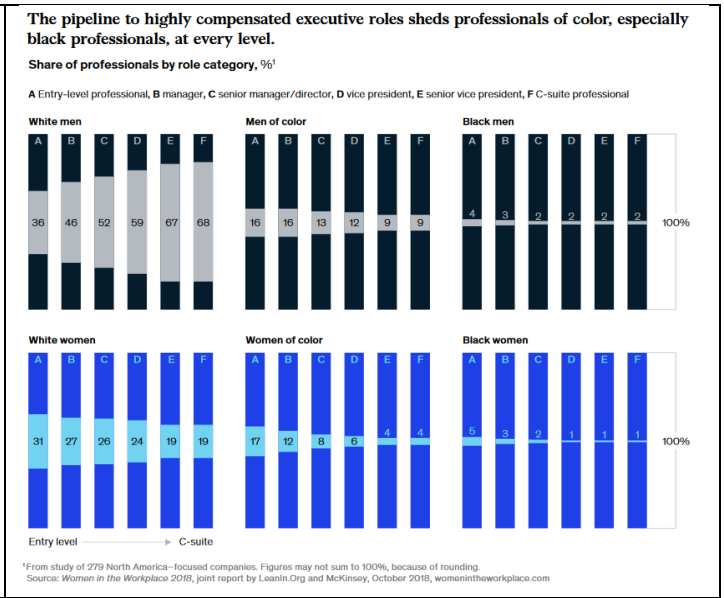


Figure 3: Executive roles based on the shed of colors & gender

A sample US statistics of the African Americans are concentrated in the low paying job (Figure 2) with a 2017 median salary for the top 10 low paying occupation as 2/10 more than USD 30,000 but below USD 35,000; 2/10 above USD 25,000 but below USD 30,000 and 5/10 below the USD 25,000, which means that 50% are in the lower 50 percentiles of the 10 low paying job. The demographics of these African Americans in the 10 low-paying jobs are 1) 8/10 have less than college education; 2) 6/10 are under 35, and 3) 7/10 of them are female. A distinctive show of racial and gender discriminations in highly compensated executive roles of men and women (Figure 3) are the profiling of jobs of (1) high 46% to 68% of managerial, senior manager/director, vice president, and c-suite professional are white men with less than 5% of these being black males; (2) less than 30% white females are in these executive roles and 5% or less for black females. As such, Discrimination added to Diversity can potentially be a highly disparate-divisive beast.

c) Diversity-Discrimination-Divide as decimating disasters.

Divide added to the Diversity-Discriminating factors are decimating disasters. Historical shreds of evidence of these are abundant as highlighted below from the established:

(i) ***Class divides*** – This essentially is the defined but not definitely "abolished" class that a person is "born into". A key illustration is the Indian caste system compounded by the colonial suppressions resulting in 4 castes with the lowest being the "Shudras", with other "caste" systems documented in other countries like the old Japan, Korea, Balinese, Pakistani, Nepalese, Sri Lankans, Yemeni, African Countries, Latin American (New World Encyclopedia, 2019). A key often forgotten discriminated group based on race-ethnics are the Australian aborigines, the Borneo "Orang Asli"

(indigenous people) to the American tribal natives or Amazon tribes, and many others. This diverse race-ethnicity that is also based on minority groups from China to Europe has been the cause of countless mass murders, politicides, and genocides. In the U.S., Black families begin with lower endowments of equity capital because of differences in rates of inheritance that is 2.6 times in share of the population (8 % against the whites at 26% at the 2018 levels) and the 2016 average inheritance value which is 2.3 times (at 236,000 USD as compared to the blacks 83,000 USD) (Noel, et.al., 2019). The class divides due to race-ethnicity directly affect the types of education access impacting on the 20|20 Education for All. Time and again, these groups lack the capacities and capabilities to fight for their basic human rights and education rights.

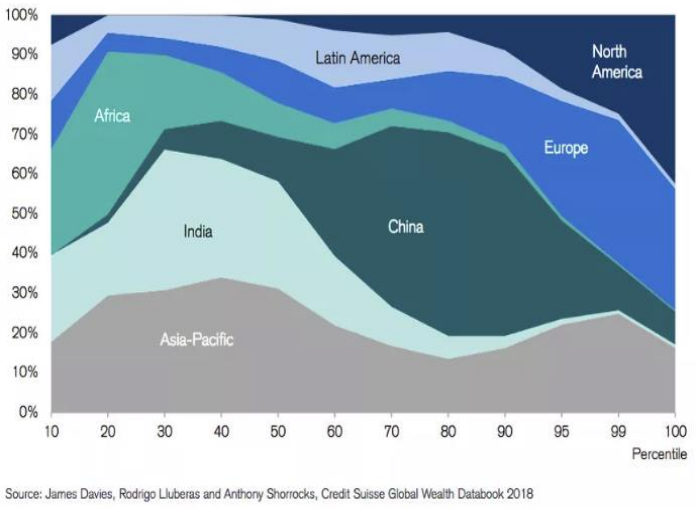


Figure 4: Regional Global Wealth in 2018

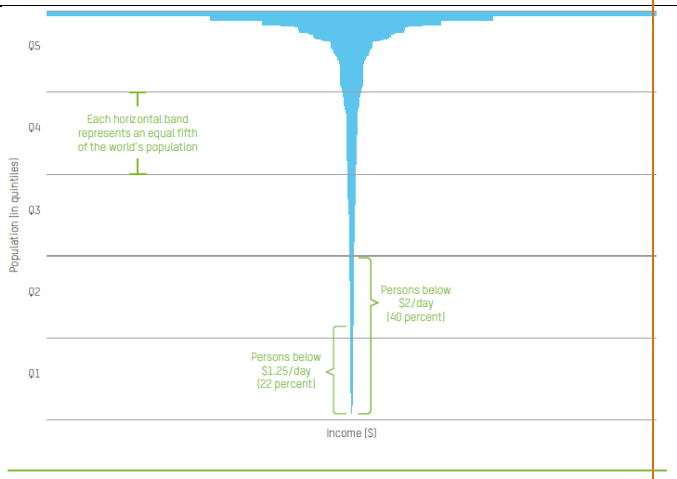


Figure 5: Global Income by Percentile of Population (USD)

(ii) ***Income-wealth divides*** **–** The wealth divide has existed since eons ago where wealth & inadvertently the elitist royals that separate the poor on a racial basis (Noel, et.al, 2019) are established through war exploits. While this "old wealth" is the present-day's royals-elites gentries, we have the upcoming "new wealth" created through legitimate-illegitimate business exploits. This is the present-day norm of the class divides of the moneyed/non-moneyed or races (Figure 4) through the economics of income-wealth classifications-distributions of income class (e.g. upper-middle, middle-middle, or lower-middle-income brackets). On the global income-wealth issue, the 'Champagne Glass' Global of Income by Percentile of Population (USD) shows 62% of people earning $1.25 to $ 2 per day (Figure 5) indicating how much global income is concentrated at the very top that is in North America and Europe, while the vast majority of people in Africa, India and Asia-pacific take a comparatively meager share of global income that forms the 'stem' of the glass (Cummins and Ortiz, 2011) (Figures 4 and 5). Black Americans can expect to earn up

to $1 million less than white Americans over their lifetimes. (Urban Institute, 2017) (Figure 6). China as a growing economic giant has a greater share of the "middle class" growth. This 'Champagne Glass' reality in effect underscores the immediate diversity issues of discriminations and divides attributable directly to income disparity or wealth disparity across all countries.

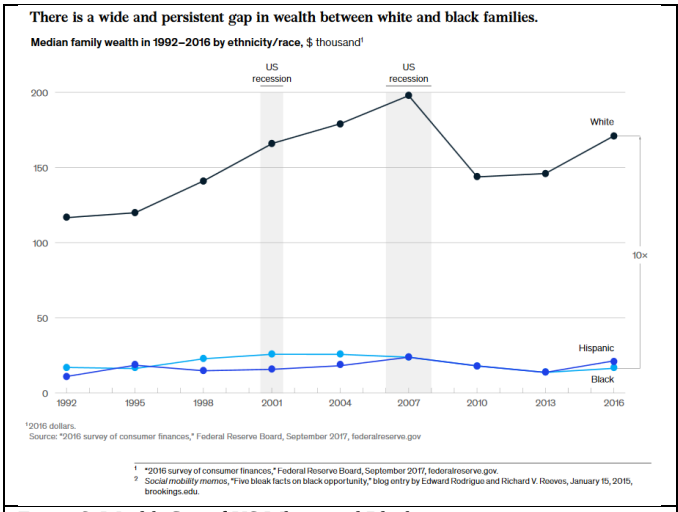


Figure 6: Wealth Gap of US Whites and Blacks

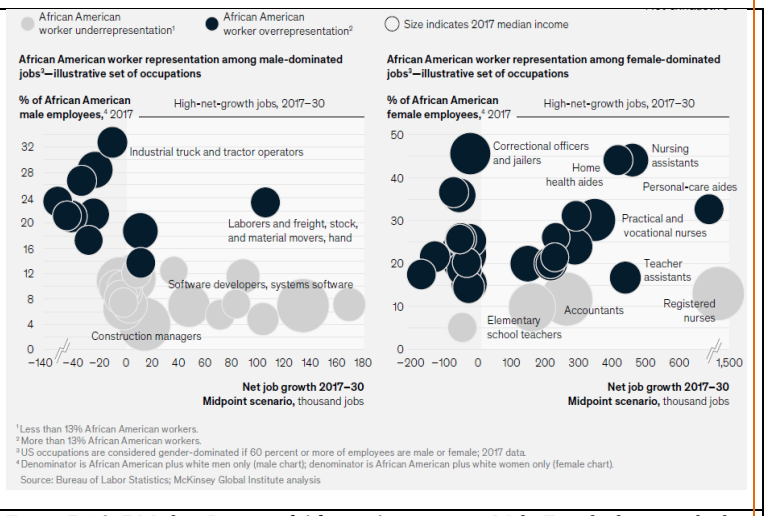


Figure 7: 2017 Median Income of African-Americans in Male-Female dominated jobs

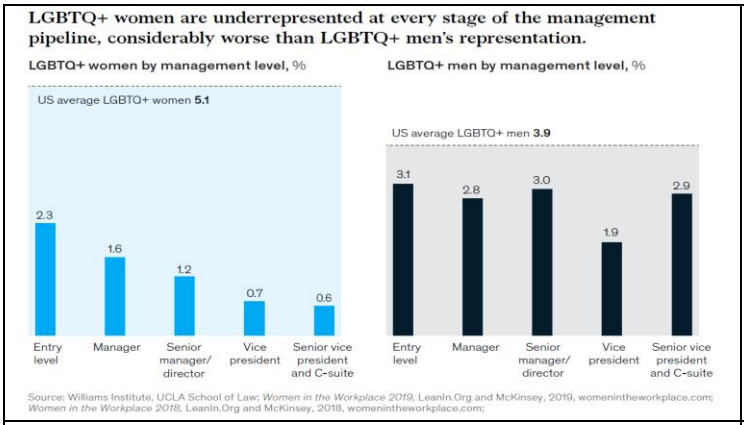


Fig. 8 LGBTQ & women representation in management

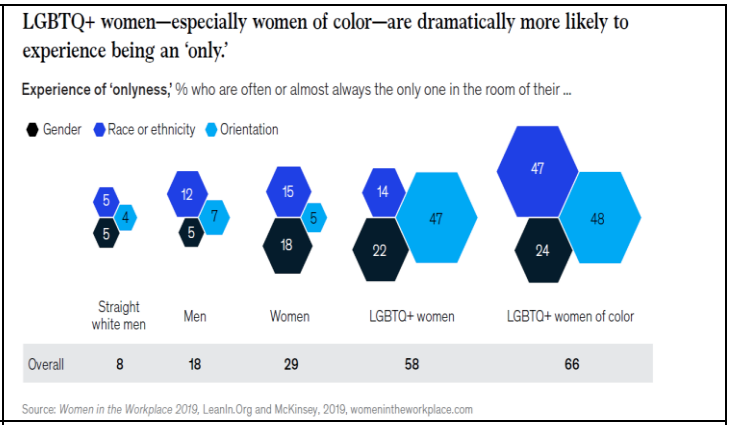


Fig. 9 LGBTQ & women "only" experience

(iii) ***Gender divide*** (Cook, et.al., 2019; McCulloch, 2017) – This is the running battle of the sexes of the "glass ceilings" and past suffragettes and into the 21st Century "Me Too" movements as classic examples. It has been said that it will take 280 years for women to attain gender equality. This is compounded by a new and revitalized coming out of suppressed "sexual orientation" of the LGBTQ (Lesbians, Gays, Bi, Transsexuals, and Queers) calling for equalities and equity recognitions and respects (Fig. 8). There is a disparity and potential discriminating factor of the LGBTQ of the women "onlyness" at 29%, LGBTQ & women "onlyness" at 58%, and LGBTQ & women of color "onlyness" at 58% as compared to men or straight white men (Fig. 9). In terms of management representation, LGBTQ & women are under-resented at

all levels of the management hierarchy as compared to men. Even in the Covid-19 pandemic, the women are not spared, as more women-dominated jobs in the education, human health and social services, wholesale and retail trade, accommodation, and food services are not spared in the industries that face higher decline during this period where they are the breadwinners (Fig. 10).

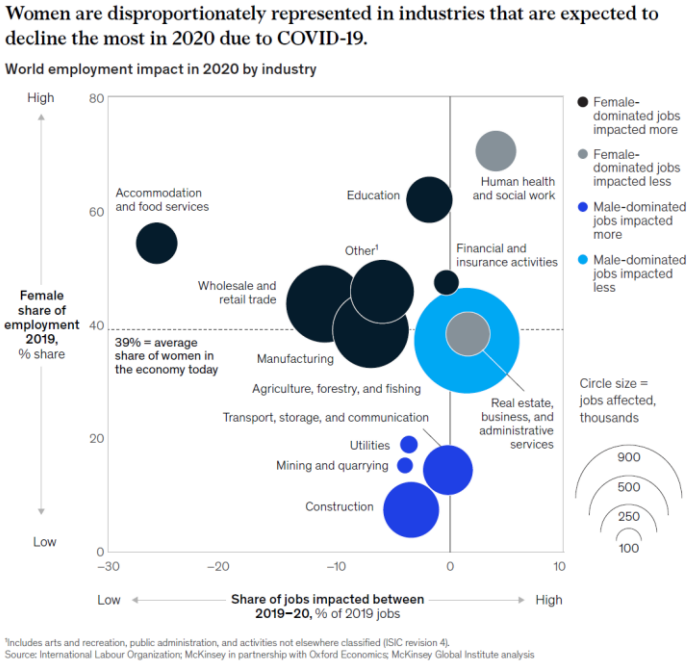


Fig. 10 Impact of Covid-19 on women's representation in different Industry

(iv) **Displacement as a decimating Diversity issue** – GRID (2018) reported that in 2017, 30.6 million across 147 countries and territories are displaced through disasters or conflicts of which 18,780,000 are people displaced by disasters | 11,774,000 are people displaced by conflict. Key geographic distributions of displacement are: (1) The Americas 4,476,000 | 457,000 (16.1%); (2) Europe and Central Asia 66,000 | 21,000 (0.3%); (3) Middle East and North Africa 233,000 | 4,485,000 (15.4%); (4) Sub-Saharan Africa 2,561,000 | 5,472,000 (26.3%); (5) South Asia 2,840,000 | 634,000 (11.4%); (6) East Asia and Pacific 8,604,000 | 705,000 (30.5%). The ten worst-affected countries accounting for more than a million new displacements each are China, the Philippines, Syria, the Democratic Republic of the Congo (DRC), Cuba, the United States, India, Iraq, Somalia, and Ethiopia. The number of new displacements associated with conflict and violence almost doubled, from 6.9 million in 2016 to 11.8 million in 2017 with Syria, DRC, and Iraq together accounting for more than half of the global figure. 18.8 million new internal displacements associated with disasters were recorded in 135 countries and territories. Weather-related hazards like hurricanes-typhoons induced or seasonal flooding and natural disasters of earthquakes, volcanic eruptions triggered the vast majority, with floods

accounting for 8.6 million and storms 7.5 million. China, the Philippines, Cuba, and the United States were the worst affected.

Skretteberg's (2019), **"***2019 will be another year of crises"*, noted that at the start of 2018, 68.5 million people were displaced by war and violent conflict with little evidence to suggest its decrease in 2019. The relentless conflicts areas are in: (1) Africa & Sahel regions like Sudan, Central African Republic (CAR), Cameroons, Democratic Republic of Congo, Mali & Libya (2) Europe as the key recipient of migrants and refugees, (3) the Middle East particularly Yemen, Syria, Palestinian (4) Central America like the Northern Triangle of El Salvador, Guatemala, and Honduras, Columbia, Brazil, Ecuador, Peru and Venezuela (5) Asia like the Rohingyas, Uighurs, Afghanistan, whereby these conflicted areas could be resolved by political solutions that require political will. The problematic reality is the rich countries' lack of will to stand up for the world's vulnerable, displaced people as shown by the great gap between humanitarian needs and funds made available by the international community. The number of people needing humanitarian aid in 2019 has increased by 132 million, but only 52% of promised funds were realized in 2018. The most recent commitment of funds is to the 2020 Lebanese port disaster, but with conditions that are awaiting fulfillment.

All these displacements through conflicts or natural disasters have brought about untold sufferings and shortcomings to the already impoverished people with little to no access to basic life necessities thus impacting 20|20 Education to All.

Proposed Human-Systemic Factors of DDDD (Diversity-Discrimination-Divide Dilemma)

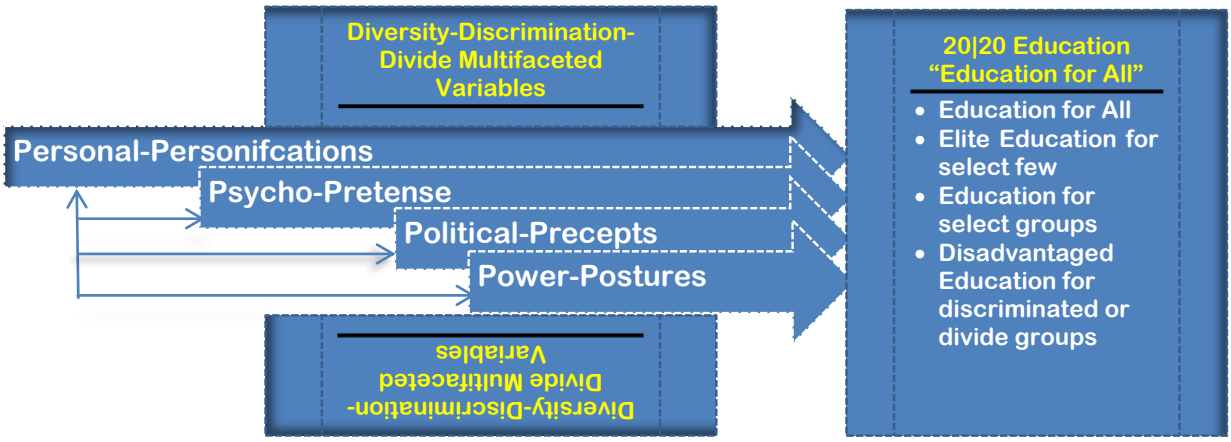


Figure 11: Proposed Contemporary Human-Systemic DDDD and 20|20 Education Framework

While the DDDD (Diversity-Discrimination-Divide Dilemma) has normally been reviewed and researched (Triandis, et.al., 1994; Knippenberg & Schippers, 2007; Knippenberg, & Mell, 2016; Cook, et.al., 2019; Cummins & Ortiz, 2011; Diversity.com, 2020) as issues, they are done as independent constructs, albeit all the diversity factors within the DDDD are inherently inter-dependent. These interdependencies have been discussed in the previous section defining the decimation-divide dilemma based on the intertwining diversity constructs. While these diversity issues have been addressed independently through governmental, international organizations especially those under the United Nations Charter, independently funded international or local NGOs, and charitable or adversities groups, they are only able to provide solutions within their line of sight and operations, representing the tips of the icebergs. Often overlooked are the cause-effect issues of the root cause of the DDDD that can potentially be the mitigating factors compounding the DDDD issue. This paper intends to look at four potentially human-based leading to systemic-based constructs that can potentially compound the degree or prevalence of the DDDD issues. In addition, it uses the Covid-19 pandemic to illustrate the interplay of the four sets of Human-Systemic factors with diversity factors that affect the 20|20 Education for All agenda.

Based on these four human-systemic based constructs affecting the DDDD (Fig. 11) and ultimately the 20|20 Education for All, this paper proposes four main hypotheses:

Hypothesis 1: There is a multi-directional relational effect of the 4 external personal personifications, psycho-pretense, political-precepts, and power-posture factors on the intermediating diversity-discrimination-divide multifaceted variables.

Hypothesis 2: There is a direct relational effect of the intermediating diversity-discrimination-divide multifaceted variables on the 20|20 Education for All.

Hypothesis 3: There is a direct relational effect of the 4 human-systemic personal-personifications, psycho-pretense, political-precepts, and power-posture factors on the 20|20 Education for All.

Hypothesis 4: There is an effect of the 4 human-systemic personal-personifications, psycho-pretense, political-precepts, and power-posture factors on the intermediating diversity-discrimination-divide multifaceted variables on the 20|20 Education for All.

This paper recognizes the fact that these hypotheses cannot be "realistically tested empirically" in the real world environment as most people, nations, and leaders go into a state of denials, live in their elite bubbles for their self-interest when alleged of doubtful integrity, ethics & honesty. They ensnare and enlarge their opportunistic fortunes, exercise their power through positions or monetary favoritism through partisan politics and groupthink, and the creation of conspiracy theories and fake news. This does not mean that there is no evidence, as the everyday happenings of these discriminations-divide-decimations are real happenings in the daily life of all nations

and people who are next to being powerless to fight against them but "forced" to accept them as part and parcel of human sufferings in their short life span and journey on earth. But at the same time, there is also optimism with few cases that shine through these 4 human-systemic Personal-Personification, Psycho-Pretense, Power-Postures, and Political-Precepts interplaying foggy factors. As such, this paper aims at highlighting and providing an academic discourse rather than an empirical measure of the recurrent diversity issues that are supported by the vast real-time happenings affecting diversity and the potential interplay of these 4 human-systemic factors, that is potentially herculean and impossible be tested in empirical studies. This academic discourse is provided below.

Academic Discourse and Analysis of the Human-Systemic Factors influencing diversity and affecting 20|20 Education for All

(a) Personal-Personification Dimension

As scientific DNA has proven, no two individuals are the same and each person has his/her own sets of genes, genetic beliefs values, and convictions-commitments that dictate their actions. Though these actions can be influenced by others, human genetics and thinking ultimately lead them to do what their instinct-innate decide for them which is beyond the fathoming of all psychiatrists in this world. This personal instinctive-innate can lead to the personification of a greater self than one is, and these personifications are manifested in "leaders" who demand total unquestioned blinded loyalties from their fellows' believers or followers. These personifications seek "glorified" high profiled exposures of their bigger than life stature, shameless infamies, "above the law mindset", as chief law enforcement officer to protect their agendas with high disregards of judiciary independence, politicizing and kneecapping governmental agencies, twisting facts to meet their twisted wantons that they are "above laws". History has shown many of these leaders of historical crusades, civil wars, bi-lateral skirmishes or border wars, and world wars. The modern-day manifestations take the forms of the present day's presidents, prime ministers, religious-sectarian-partisan-cult leaders, charismatic leaders-warlords and tycoons-millionaires-billionaires, from the Eastern to the Western hemisphere as documented in high profiled real-life actions. They deem themselves as the "chosen ones" or "cult-like figures" to lead and guide their people regardless of legitimacy or otherwise.

These personifications, if good, will benefit a certain group and go down in the history as legends who lived and fought for their kinds. On the other hand, the greater groups have set the devilish norms of lying through poker faces, calling every other thing "hoaxes or fake news" that they propagandize through their actions or social media. These personifications have created a more divided society and country promoting discord-destructions across the whole social and societal fabrics of creating left-wings, right-wings, moderates, and centralist ideological groups that have amplified the Diversity-Discrimination-Divide Dilemma. These are now more manifested in hate crimes that have increased over the decades. Hate Crime is not delimited to

race as shown by the Hate Crime Statistics Act (28 U.S.C. § 534, 1990) that defines hate crimes as "crimes that manifest evidence of prejudice based on race, gender or gender identity, religion, disability, sexual orientation, or ethnicity." The 2018 US Victims of Hate Crime Incidents showed 7,036 single-bias incidents involved 8,646 victims and 84 multiple-bias hate crime incidents, which involved 173 victims with a more detailed profile across different diversity factors in the 2018 US Statistics (Figure 12).

Bias Motivation Categories for Victims of Single-bias Incidents in 2018: This is a pie chart showing the percentage of bias motivation categories for victims of single-bias incidents in 2018. They are as follows:

Race/Ethnicity/Ancestry/Bias	59.6%
Religious	18.7%
Sexual Orientation	16.7%
Gender Identity	2.2%
Disability	2.1%
Gender	0.7%

Back to the image

Single-bias Incident Bias Motivations by Category: Total number of single-bias incidents in 2017: 7,106, in 2018: 7,036. This is a bar chart comparing the 2017 and 2018 data for bias motivation categories for single bias incidents. They are as follows:

Bias Motivation Categories	2017	2018
Race/Ethnicity/Ancestry/Bias	4,131	4,047
Religious	1,564	1,419
Sexual Orientation	1,130	1,196
Gender Identity	119	168
Disability	116	159
Gender	46	47
Total	7,106	7,036

Figure 12: 2018 US Hate Crime Statistics across different Diversity Factors
Source: US Department of Justice, https://www.justice.gov/hatecrimes/hate-crime-statistics

(b) Psycho-Pretense Dimension

As noted earlier that each human is a unique DNA sample, personifications coupled with the psycho-pretense construct go into the potentially dark and unchartered territories. These personifications as influenced by the individual psycho-pretense behavior cannot be discerned nor interpreted by others except by the individual himself/herself. This is where the danger lies as ultimately the psychotic human mind dictates the personified actions. This is where the mass tries to interpret and understand, be it puritanically good or bad is beyond what a normal human tries to decipher over the centuries and by the newer psychological and behavioral studies that potentially cannot unlock the individual human psychotic-personified codes in totality. A leader with unquestionable-questionable, good-bad, or benevolent-malevolent individualistic highly deciphered-undeciphered human psychotic-personified codes will take actions within these human genetic codes.

The individualistic Herd behavior and the human psychotic-personified codes in collective forms is the systemic behavior of individuals in groups acting collectively without centralized direction. Raafat, Chater, and Frith (2009) proposed an integrated approach and mechanisms of transmission of thoughts or behavior between individuals and the patterns of connections between them. They suggested that bringing together diverse theoretical approaches of herding

behavior illuminates the applicability of the concept to many domains, ranging from cognitive neuroscience to economics (Raafat, et.al., 2009; Burke, et.al., 2010). These same-similar psychological behaviors of individuals will gravitate to each other into "group think" that can lead to polarization of the personification-psychotic human-systemic actions that can be based on diversity affecting increasing-decreasing the discrimination-divide diversity dilemma.

(c) Political-Precepts Dimension

Whether we want it or not, or trying to avoid it, there is little in escaping politics as politics is everywhere and political games are played consciously or sub-consciously or intentionally or non-intentionally. While people accept that politics are in the realm of politicians, human beings are "political animals" playing it in their social-family life and their work-private life. People shying from politics are inadvertently brought into political games whether they like it or not. A key and high-profiled premise are that the business world is also a political playground for "profits" of which HEIs are moving or has been moving towards. Politics are politics whether these political games are being played in the political world or business realms or even the "philanthropic" or "non-profit" entities. Historical examples from the western to the eastern hemisphere are copious cases of people in the highest offices that have been prosecuted or escaped prosecution or indicted for high crimes or abuse of powers while in offices. By 2020, some high profiled examples of the changing political landscapes from the western to the eastern worlds are that of: (a) an impeached President who is acquitted through partisanship politics whereby witnesses are withheld by the defendant himself, (b) an indicted Prime Minister fighting in a third election to have a strengthened political base with political clouts to make decisions against international laws, or changing or manipulating the constitution to prolong one's term of office or just to remain in power, (c) presidents or prime ministers changing the constitution and supported by the appointed court system to extend their "life of office", again with the political-power clout they wield, (d) warlords and sectarian leaders using their bellicose army-congregations for self-interest, self-centered sharing of spoils of war to extend and sustain their political-precepts of doing it in the interest or the name of or for the "pretense good" of the masses.

Underscoring this political-precepts dimension is the key outcome of the 21st-century political strife is witnessing the highest levels of displacement on record with nearly 1 person being forcibly displaced every two seconds as a result of internal conflict or persecution. This displacement of the people underlying the diversity of "who they and where they come from" is more important than ever before. An unprecedented 70.8 million people (UNHCR, 2019) with over half of whom are under the age of 18 around the world have been forced from home. Among them are nearly 25.9 million refugees fleeing from wars like the Syrians**,** Palestinians, Yemenis from internal strife like the Angolan, Congolese, CAR, Libyans, Somalians, Sudanese, or persecutions like the Bosnians, Romas, Rohingyas, Serbians, and Uighurs to name a few (Fig. 13). According to the United Nations Guiding Principles on Internal Displacement, IDPs are

"persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized state border". The 2019 Internal Displacement shows that South Asia has the largest urban displacement at 92.2%, followed by East Asia & Pacific (80.1%), sub-Saharan (76.1%), Europe & Central Asia (62.7%), America (50.7%), and the Middle East & North Africa (75.6%) (IDMC, 2019) (Fig. 14).

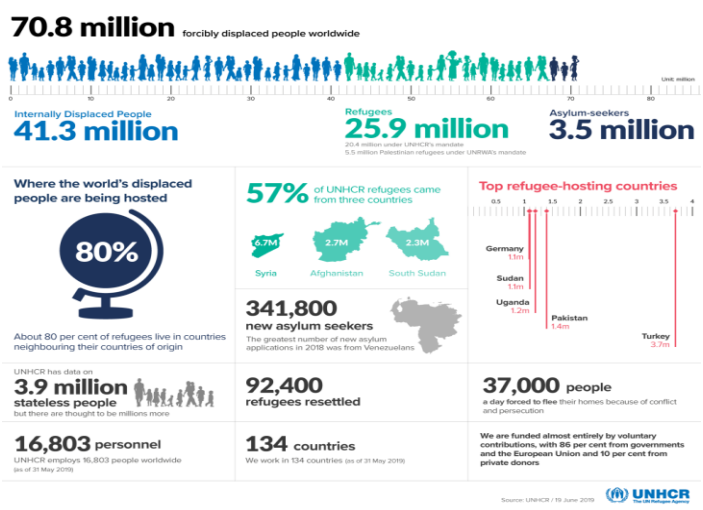


Figure 13: Forcibly displaced people worldwide in 2019

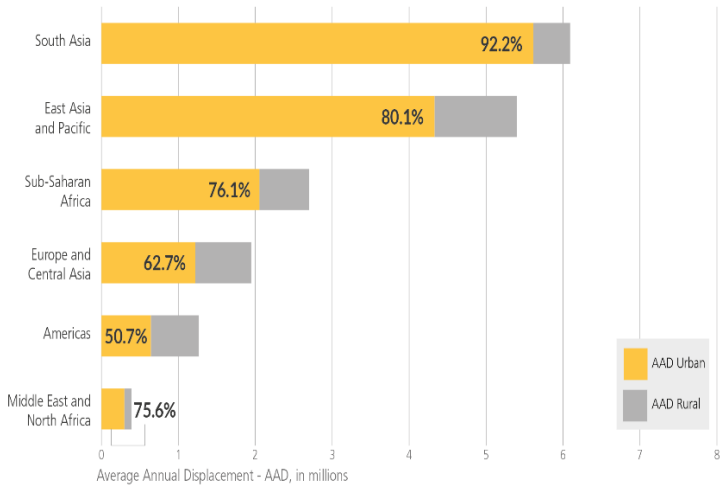


Figure 14: IDMC | GRID 2019 | Global Report on Internal Displacement 2019

On the education front, children in fragile, conflict-affected countries are more than twice as likely to be out of school compared with those in countries not affected by conflict; similarly, adolescents are more than two-thirds more likely to be out of school (Source: GEM Report, Policy Paper 21, June 2015, p.2). Each year of education reduces the risk of conflict by around 20% (Source: World Bank, Doing well out of war (Paul Collier), 1999, p.5). In countries affected by fragility and conflict, the number of girls completing school for every 100 boys rose from 74 to 88 for primary, and from 67 to 83 for lower-secondary between 2002 and 2015 (Source: GPE estimate based on UIS data). There are also millions of stateless people, who have been denied nationality and access to basic rights such as education, healthcare, employment, and freedom of movement. In 2016, 132 million girls worldwide are out of school. This includes 34.3 million girls of primary school age, 30 million girls of lower secondary school age, and 67.4 million girls of upper secondary school age. (Source: UIS/GEM Report Fact Sheet 48, p.5). One additional school year can increase a woman's earnings by 10% to 20% **(**Source: World Bank, Returns to Investment in Education, 2002).

Another political-pretense illustration is the United Nations' definition of acts of genocide as "acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group". This covers killing members of the group; causing serious bodily or mental harm to members of the group; deliberately inflicting on the group conditions of life calculated to bring

about its physical destruction in whole or in part; imposing measures intended to prevent births within the group; [and] forcibly transferring children of the group to another group. (Office of the UN Special Adviser on the Prevention of Genocide (OSAPG): Analysis Framework). Roser and Nagdy (2020) highlighted three mainstream theories of the causes of genocide broadly:

1. **Fractionalization, grievance, and dehumanization**: Kuper (1982) argued that genocide can be predicted by higher ethnolinguistic or religious fractionalization within a country combined with grievances between groups leading to the dehumanization of the victim group.
2. **National crises**: Catastrophic war, economic depression, or revolution that trigger genocide-mass killing is motivated by: (a) particular group causing crisis and eliminations of others, (b) crisis that creates the opportunity for a group to consolidate their power.
3. **Government power**: Rummel's (1997) power principle argues that "The more power a government has, the more it can act arbitrarily according to the whims and desires of the elite, and the more it will make war on others and murder its foreign and domestic subjects. The more constrained the power of governments, the less it will aggress on others." He further classified different states violence as (a) **Genocide**: the killing of people by a government because of their indelible group membership (race, ethnicity, religion, language), (b) **Politicide**: the murder of any person or people by a government because of their politics or for political purposes, (c) **Mass Murder**: the indiscriminate killing of any person or people by a government, and (d) **Democide**: the murder of any person or people by a government, including genocide, politicide, and mass murder.

   A distinction is made between acts of genocide and politicide, the first being motivated by ethnic or religious differences, while the second is motivated by political opposition to the dominant power. Another important distinction is made between genocide/politicide and state repression or terror. In genocides, the victimized groups are defined primarily in terms of their communal (ethnolinguistic, religious) characteristics. In politicides, by contrast, groups are defined primarily in terms of their political opposition to the regime and dominant groups. Genocide and politicide are distinguished from state repression and terror. In cases of state terror, authorities arrest, persecute or execute a few members of a group in ways designed to terrorize the majority of the group into passivity or acquiescence. In the case of genocide and politicide, authorities physically exterminate enough (not necessarily all) members of a target group so that it can no longer pose any conceivable threat to their rule or interests.

Figures 15 and 16 show Russel's definitions, documentation, and estimates of genocides by countries, and the number of active genocides and politicides around the world.

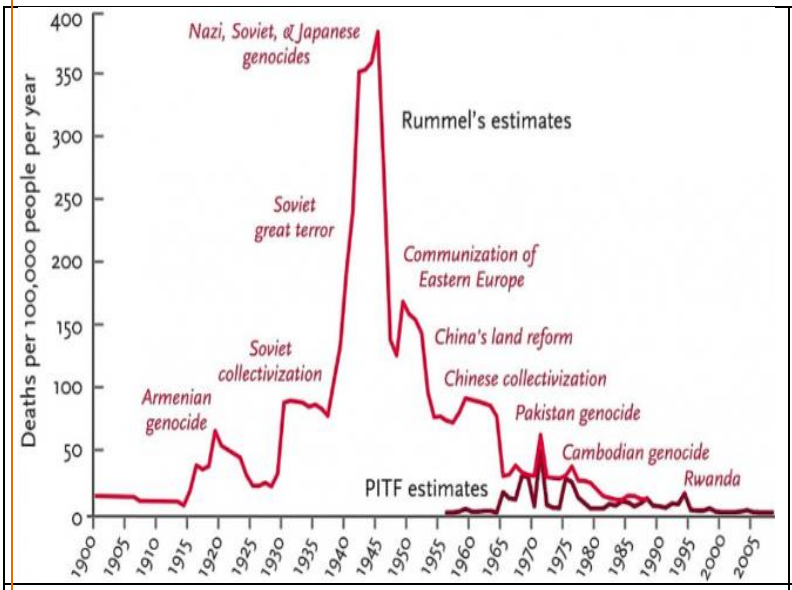


Figure 15: Countries' estimated Genocides

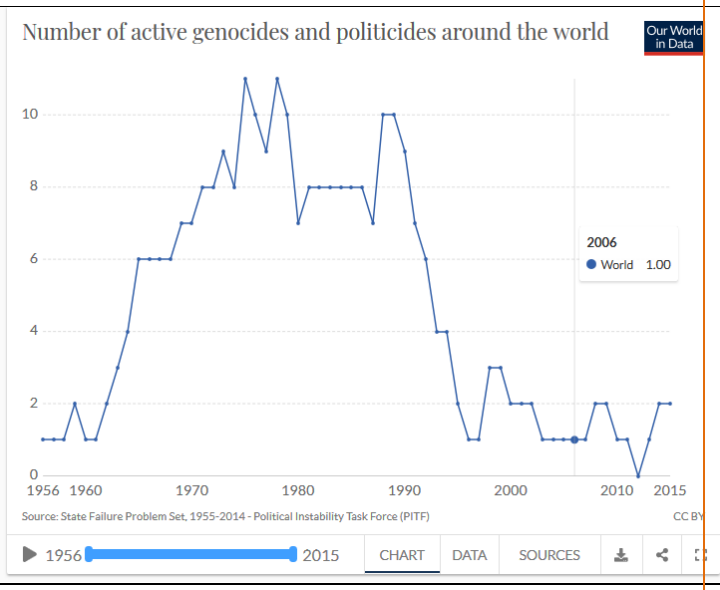


Figure 16: Number of Genocides & Politicides around world

(d) Power-Postures Dimensions

Personifications of self, powered by the political-power dimensions creates multifold amplifications of the Diversity-Discrimination-Divide Dilemma. Two eminent types of power are discussed here as, (i) **Moneyed Power –** This is the accepted human norm whereby money is the king and rules all and get all. With money, anything can be done, albeit being legal or legitimized through politics or just accepted norms of society willingly or unwillingly. In the education field, these are in the forms of "tea monies, donations, gifts, etc., etc." that easily get the moneyed easier smoother acceptance into the elite schools. It is such a common practice in Asia that it has become a cultural norm that monies can get you the school of selected few, regardless of whether you are from the top crop or the lowest in the Multi *Intelligence* or Quotient spectrum of IQ (Intellectual Quotient), EQ (Emotional Quotient), PQ (Physical Quotient), AQ (Adversity Quotient) and SQ (Spiritual Intelligence). The most recent scandal is illustrated in the U.S. corrupted practices of "payment in exchange for college entries" of the better-off groups. (ii) **Positional power –** This power is derived from being in a position that wields the power of influence and control over others who are subjugated to accept as part of the group or silenced to accept as norms. This includes the whims and fancies of the exercise of government power leading to genocides, mass murders, politicides from the eastern to the western hemispheres that have been identified by Rummel's (1997) power principles in the previous section. These governmental power are manifested in dictatorial regimes in the guise of populist democratic elections to legitimize. Over the last few years, current administrations in some countries have gone to the extent of modifying the nations' constitutions to extend their continued power grasp or extending their dynastic power. Once passed, their strangleholds on the country and its people are cemented and strengthened. These are also manifested in the groupthink and herd mentality to exercise power as a "power group" based on similar or forced

or coerced acceptance of these power abuse manifestations. At the institution level, this is manifested as "you scratch my back and I scratch yours" clutch on groupthink institutional, departmental or divisional power. At the personal level, this is manifested in the forms of "forcing" the students to do something in exchange for grades. These are clearly illustrated in the group partisan exercise of legislative or senatorial power, or even in the U.N.'s five permanent members' power play of "You propose, I veto" mentality that cause discrimination-divide gaps of the wellbeing of all nations and the distribution of world income-wealth and socio-economic structure and poverty gaps affecting the 20|20 Education for All agenda.

Overall Academic Discussions and Implications

The 20|20 Education for All is composed of 4 main sets of education options that are (1) Education for All; (2) Elite Education for Select Few; (3) Education for Select Group; and (4) Disadvantaged to No Education for discriminated or divided groups. In the best-case scenario, regardless of the diversity factors and highly dependent on the national policy of "universal education access to all", there exists evidential structural access to education based on the socio-economic status of a family standing based on wealth or political status-connection of the family and gender-race-ethnicity. As there are two main groups of constructs of diversity factors in itself, and the influential factors affecting diversity, the academic discussion will be separated into three main clusters:

a. **Diversity factors are taken independently without consideration of the Human-Systemic Multifaceted DDDD (Diversity-Discrimination-Divide Dilemma) factors –** The first scenario is in taking the diversity factors independently without considerations of their inter-relations or interactions. In the first scenario, for most countries and in most cases, there are "outright" structural barriers or "accepted norms" of structural barriers to education access based on key diversity factors that are considered independently of the race, color, ethnicity, socio-economic status, language, religious beliefs, cultural background**,** political beliefs, ideologies, physical & mental ability as there are so many different types of schools for these different types of diversity factors. There are fewer evidential cases of disadvantaged education access based on age, gender except for segregated schools, nationality-race-ethnicity, or gender-sexual orientations. In the first case scenario, there exist schools based on gender segregation, special schools for those with physical & mental abilities, more prominently shown in the blinds and deaf schools. Then there are specialized religious schools based on religions, language, or even cultural beliefs. In most countries, since there are different groups with differing social-economic standings, this is the bane of the existential elite schools for the privileged few and the general public or private schools that cater to the middle to the lower strata of society. The very lower-lowest strata of society or disadvantaged groups have no choice but to opt for free public education for the masses. Education access in Asian or Middle-Eastern countries that have not been "colonized" and that have a more common language or race

denominator is freer of the diversity factors effect on education for all. Schools segregation based on racial, color, ethnicity, and religious factors are much more prevalent in American or European countries due to the century-old "early settler" migrations-mentality mindsets from the African or Latin American continued who claims first "rights" to the country as early founders' establishment. The more recent immigration or refugees due to political and socio-economic factors make these newer groups of migrants feel or fit in as "second class" citizens as opposed to the earlier groups that claim first rights to the country's founding establishment and belonging. The U.S. and European countries that are supposed to have more advanced education systems and are in major education frontiers or changing paradigm shifts will find the diversity factors more prevalent and highly discussed than in the developing or under-developed third world countries that are more open to political, natural disasters and highly disparate socio-economic issues and strata.

b. **Diversity factors are taken inter-relatedly without consideration of the Human-Systemic Multifaceted DDDD (Diversity-Discrimination-Divide Dilemma) factors –** Taken independently, each diversity factor in itself has brought about a diverse set of education options. Taking the interplays of the key diversity factors like race-ethnicity-income-wealth and socio-economic factors into consideration, the issue of education for all shows a greater discriminating disparity in the expensive elitist education for select few, paid private education for specific groups, and free public education for the masses. On the other side of the continuum whereby the depraved condition of the nation, the economic downturns, its human rights abuse, the persecution of its people, the self-centered self-interest of personified self, partisan politics with groupthink towards national exploitations, there is little left to its educational endeavors. Education for all is meaningless due to a lack of human capacities and capabilities that underscores the drove of displaced people or migrations to start a better life. The so-called American dream lacks the luster of the past and the migrations to Europe are bringing higher levels of racisms, white supremacy, or narcissistic movements through hatred speech for self-protection that affects 20|20 Education for All.

c. **Human-Systemic Multifaceted DDDD (Diversity-Discrimination-Divide Dilemma) factors intersection of the Diversity factors –**

(i) Personal-Personification, Psycho-Pretense, Power-Postures, and Political-Postures interplaying factors – Unfortunately, the Covid-19 pandemic has been politicized. The Covid-19 pandemic is used to illustrate the classic case study of the psycho-pretense of the "I" leaders' personal-personification issues of developed and developing nations. Through their personal-psycho-personification behaviors and thought processes guiding their political guts-gains, they have

miscalculated, misplanned, misinformed, and misguided the public against sound scientific health advisories from a data-grounded scientist or just plain common sense. Their tendencies to "believe only in themselves, the "I" mentality or supra-nationalist mentality" have led them to discount scientific advisories leading to sluggish and slothful containment-mitigation strategies and potentially undermining the balancing of life-economic decisions. These are further undermined by the increasing blame games, fingers pointing, disinformation-misinformation, and conspiracy theories to "cover-up" for their wrongs. The personification-psycho is illustrated through the "I" of being the greatest and can do what I want by taking its country out of the Paris Climate Accords, the 2015 Iranian deal, the WHO and by putting the pandemics blames as a "Chinese Virus" and so forth. This included putting sanctions on countries, companies, and people who the "I" personifications deem fitting or on fancies or conspiracy theories. Supplementing this is the political-power and partisan politics of power grabs in using emergency powers to consolidate their political-power positions by politicizing the pandemic that further undermines national-international cooperation, coordination, and sustainability or national priorities as against personal, political, and partisan selfish gains that potentially do not benefit the diverse masses. The "open the schools at any cost" and "open up the economy as the pandemic will pass as in ordinary cases of flu", have led a few of the countries' great increase of cases and deaths, which they are still not acknowledging or just go into plain denials. On the contrary, these actions potentially cause greater divisiveness across the diversity factors and issues, and indirectly affecting the future of education as 1.3 billion children's education across the globe are affected by this pandemic and the way they learn if they have the opportunities regardless of in-class or online sessions. Compounding the 20|20 Education for All issues are the interplays of these human-systemic factors on key diversity income-race-ethic-gender-socio strata groups that are adversely affected exponentially.

(ii) **Political-Precepts and Power-Postures interplaying factors –** *Groupthink,* a term coined by social psychologist Irving Janis (1972), occurs when a group makes faulty decisions because group pressures lead to a deterioration of "mental efficiency, reality testing, and moral judgment". Gurteen (2014) defines Groupthink as a "psychological phenomenon that occurs within a group of people, in which the desire for harmony or conformity in the group results in an irrational or dysfunctional decision-making outcome". The group members try to minimize conflict and reach a consensus decision without critical evaluation of alternative viewpoints, by actively suppressing dissenting viewpoints, and by isolating themselves from outside influences. The *groupthink* symptoms (Janis, 1982) fall into three clusters of (1) overestimation of the in-group (as strong, smart,

invulnerable, and morally superior), (2) corresponding negative stereotyping regarding the out-groups (as weak, immoral, vulnerable, stupid, and wrong) close-mindedness (e.g. rationalization of doubt), and (3) pressures for uniformity (via mind guards, self-censorship, an illusion of unanimity) potentially leading to several *defective decision-making processes* (Janis & Mann, 1977). Gurteen (2014) also defines Group polarization as "tendency for groups to make decisions that are more extreme than the initial inclination of its members" that results in more extreme riskier decisions if individuals' initial tendencies are to be risky and towards greater caution if individuals' initial tendencies are to be cautious. These flawed decision-making processes are hypothesized to lead to grossly inadequate, polarized (i.e., extreme) and premature group solutions, absence of insight, and lack of concern with the consequences and likelihood of failure. Examples of groupthink "fiascoes" studied by Janis include US failures to anticipate the attack on Pearl Harbor, the Bay of Pigs invasion, the escalation of the Vietnam war, and the ill-fated hostage rescue in Iran. The 2020 fiasco of the Covid-19 pandemic mismanagement is illustrated in some leading countries' administrations that believe in operating under high levels of secrecy with leadership failures due to personification of self. These mentalities underscore the countries' incoherent inconsistent ill-advised non-transparent communications, misinformation and disinformation, finger-pointing blame games, denials, cover-ups to avoid responsibilities and accountabilities, and illusionary ego-centric "total authority" and "I" expertize ignoring scientific advisories leading to two of the highest fatalities and infections in the world. The most recent case of the Political-Precepts and Power-Postures interplaying factors is demonstrated in the August 2020 destruction and devastation of Beirut in Lebanon whereby their economic pains are amplified through the horrendous port explosions of highly inflammable ammonium nitrates, that were stored for years with no actions taken or resolved by governing elites. The 170 dead, 5,000 injured and 300,000 displaced have added to or increased the already affected families-children income-wealth and socio-economic diversity issues access to education to most children, and primarily, 20|20 Education for All.

Recommendations

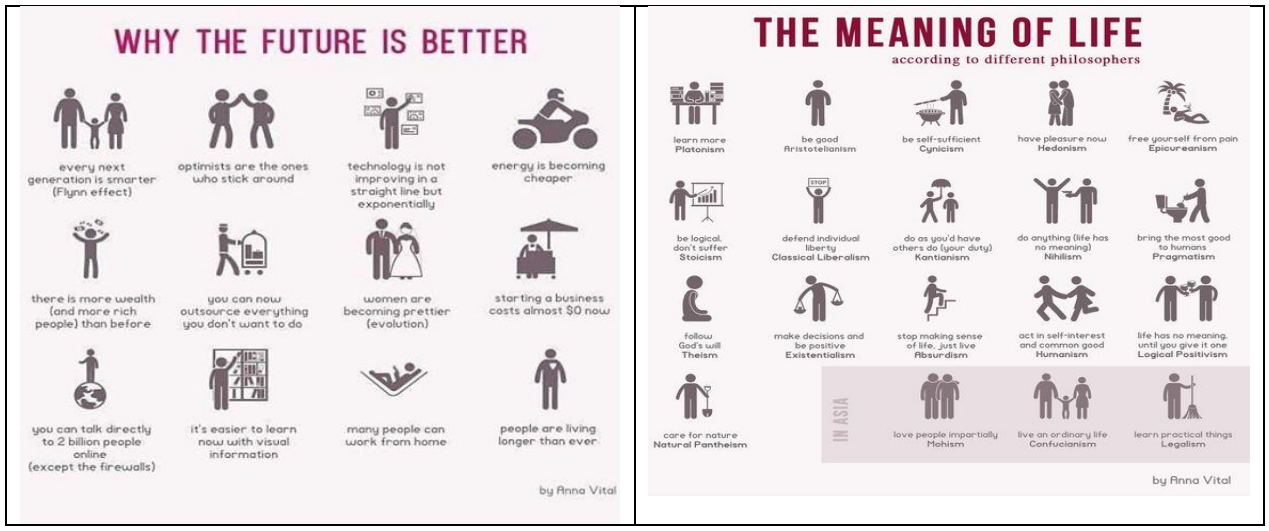
A quote potentially misattributed to Nelson Mandela, fact-checked in 2020, as "Our world is not divided by race, color, gender, or religion. Our world is divided into wise people and fools. Fools divide themselves by race, color, gender or religion" aptly describe the multifaceted Human-systemic factors influence of the diversity dilemma It is human foibles and actions like "the fools" who deviously and unmercifully abuse diversity that divide and rule the powerless for personal or political benefits.

While international agencies like the UN, UNESCO, UNHCR, IMF, ADB, and leading NGOs have progressively worked toward life, education, race-ethnicity, income-socio-economic "equality" with poverty eradication and education for all policies and programs, these are just touching the tip of the ice-berg of diversity issues. Sample of two leading G7 countries like France and U.S. with lofty ideals of the French motto of "Liberté, égalité, fraternité" (liberty, equality, fraternity) and U.S. government "of the people, by the people and for the people" have values grounded in equality and people, all of which are promises made and broken at the end of political rallies and by governmental regimes. The question at hand is whether the world, the nations, the governments, the leaders, and their people can come together to re-establish the fragility of a more diverse and divided world based on the 4 human-systemic *Personal-Personification, Psycho-Pretense, Power-Postures, and Political-Precepts interplaying factors*. If the world stage is not working based on the present-day and futuristic geo-politics, all is not lost, as each nation or its people can re-envision and rebuild better through:

1. **People, People, and People –** Each nation and its people has to decide its future for its future generations. It should re-envision and re-build the fragile fabrics of its societal values and citizenship that call for valuing people, appreciating diversities, and embracing differences. It is a slow journey but once walked, it makes a difference to its people's future survival and sustainable livelihood and prosperity. The bottom line is that the source of evil is in the human itself. The people of a nation should rise above these evils and vices to fully "Value People" to be "People First". While it may not completely break down on the diversity barriers and obstacles, taking the very first step to slowly build a "people focus value and practices system" is the beginning where the whole nation and people believe in and work as a nation for its people. It is "people power" and it is not the battle of sexes or races-ethnicity-colors-income-socio economics but the real battle of the good against the evil.
2. **Provide a "real government that walks the talks" –** The records of governments having their people as their "top priority" throughout the world have been talked about for many centuries and decades in election pitches. Once in power, for the duration of their term of office, the infightings for a slice of the cake and spoils, the nation's budget that lack a united front against corrupted partisan politics working together towards tangible results for the people, is the norm. All is still not lost as the beginnings of the "people power" through demonstrations and civil disobedience is beginning to take forms during the pandemic that showed the self-centered selfishness of self-personified leaders playing partisan or autocratic politics, exercising "illegal" politicides and genocides citing legality of elected government "supreme" executive power. What each nation needs and agrees to work toward as a nation is a government that walks the talk, and this is in the future of each nation and its "people power".
3. **Provide Leadership at all levels –** It is a lifetime blessing that a country can get an emphatic leader and care for its people's real well-being. This is a selfless person as exemplified in very few monarchs that exude real care for their people even though they

live a life of wealth. Very few governmental or national or tribal leaders in the present-day world exude such charisma as sooner or later they are entrapped by its very own actions, enticed by power lust, and ensnared in partisan politics, so much so that they fall prey to self-gains and give in to these vices. While governmental leadership is easily ensnared in these vices, at the institutional and personal levels, there exist rare gems who live and fight for equality in normal times and learn to give in troubled times. As illustrated in the Covid-19 pandemic and the BLM movements, some corporations and the elitist wealthy are heeding these calls for equality and recognize that human life matters through commitments of positive actions and donations to raise the discriminated groups to a higher level of better livelihood.

4. **Prepare and Provide policies and plans that are acted and executed with resources capacity and capabilities –** Once there are good people, good government, and good leaders who are really "of the people, by the people and for the people", the real executable policies and plans should be put in place. The success of these policies and plans is based on the capacities and capabilities of the nation and the people. The base of all failures is not the systems but the human capacity and capability that creates and implement these systems for the good of its people.
5. **Principle-based life –** If all else fail or all else is lost, then, each individual must decide on his/her life principles as there is still light at the end of the tunnel as this is what has driven the continued success of a certain individual who has risen against all odds. They believe that life is not all evil. If people do not live life positively and healthily, then the "I" should take actions into our own hands to believe in Anna Vital's info graphic depict of the new future that can be better within the "meaning of life" of some great philosophers" and work on it as pictured below.



Conclusion

The Diversity-Discrimination-Divide Dilemma (DDDD) has been practiced over the past centuries that are more enhanced and recognized over the last 20th century into the 21st century through the opening up of education access to the disadvantaged-discriminated genders-race-ethnicity groups. Over the last few decades, the human rights movements of equality to formal education availability and access is more pronounced with the recognition of some of the more prominent international and national acts of the United Nation's Sustainable Development Goal 4, the 2015 "Education for All", "The Equality Act 2010" and the No Child Left Behind Act of 2002. There has been progress and drawbacks due to international geopolitics maneuvers and national personification-psychotic politics-power agenda that are existential in the diversity discrimination-divide-decimation issues, all of which ultimately affect the universal 20|20 Education for All agenda.

This paper has propounded an in-depth academic discussion of the diversity issue itself and the interplays of the diversity constructs. It proposes that there is an overlay of the human-systemic factors of *Personal-Personification, Psycho-Pretense, Power-Postures and Political-Precepts* interplaying with the Diversity factors, all of which affect the 20|20 Education for All agenda. Though played down or ignored, the 21st Century diversity issues are still very real in the forms of modern-day man-women-child slavery-labor; genocide-politicides; migrations and human trafficking; internal-external displacements through politics and/or natural disasters, all of which compounded the diversity factors affecting 20|20 Education for All.

To eradicate or just to mitigate issues affecting justice and equality of education availability and access, it needs to start from the international to the national commitment of the governments and leaderships. On the other continuum, the individuals should not wait but rise above the ashes to equip themselves and fight for their survival for their education rights through laborious ethical and legal ways and means. On the positive side, albeit all the existence of illegal and unethical practices of the four key constructs of the human-systemic and diversity interplaying factors affecting 20|20 Education for All, many countries have made real or pretentious efforts and positive actions to reduce poverty of the different groups. The bottom line is a "total person" with Multi *Intelligence* or Quotient spectrum of IQ (Intellectual Quotient), EQ (Emotional Quotient), PQ (Physical Quotient), AQ (Adversity Quotient), and SQ (Spiritual Intelligence) to rise above the human-systemic and the DDDD factors affecting 20|20 Education for All.

References

Burke, C. J., Tobler, P. N,; Schultz, W., Baddeley, M,. (2010). Striatal BOLD response reflects the impact of herd information on financial decisions. *Frontiers in Human Neuroscience.* 4: 48.

Cook, K., Pinder, D., Stewart III, S., Uchegbu, A., Wright, J., (2019), The future of work in Black America, McKinsey & Company, USA.

Cummins, M., and Ortiz, I., (2011) 'Global Inequality: Beyond the Bottom Billion', Social and Economic Working Paper, New York: Unicef, http://unicef.org/socialpolicy/files/Global_Inequality.pdf

Diversity.com, (2020), What is Diversity?, https://www.diversity.com/page/What-is-Diversity

EOC, (2020), What Is Discrimination?, Equal Opportunities Commission, https://www.eoc.org.uk/what-is-discrimination/

EHRC, (2010), THE EQUALITY ACT 2010, EQUALITY AND HUMAN RIGHTS COMMISSION, HTTPS://WWW.EQUALITYHUMANRIGHTS.COM/EN

Gurteen, D. 2014. Group Think & Group Polarization, *Gurteen Knowledge Letter issue: 171,* http://www.gurteen.com/gurteen/gurteen.nsf/id/group-think-and-group-polarization

IDMC, 2018, GRID 2018 Global Report on Internal Displacement, Internal Displacement Monitoring Center, Norwegian Refugee Council, May 2018

Janis, I. L., *Groupthink: Psychological Studies of Policy Decisions and Fiascoes*, Second Edition, (New York: Houghton Mifflin, 1982)

Janis, I.L., & Mann, L. (1977). *Decision-making: A Psychological Analysis of Conflict, Choice, and Commitment*. New York: Free Press.

Just Facts, (2020), Be Informed: Racial Issues, Chatham, New Jersey, https://www.justfacts.com/racialissues.asp#science

Knippenberg, D.V. and Mell, J.N., (2016), Past, Present and Potential future of Team Diversity Research: From Compositional Diversity to Emergent Diversity, *Organizational Behavior and Human Decision Process*, Vol. 136, Pages 135-145

Knippenberg, D.V., and Schippers, M.C., (2007), Work Group Diversity, *Annual Review of Psychology*, Vol. 58, pp. 515-541, Https://Doi.org/10.1146/annurev.psych.58.110405.085546

Kuper, L., (1982), *Genocide: Its political use in the twentieth century*. Yale University Press, 1982.

McCulloch, H., (2017), *Closing the women's wealth gap: What it is, why it matters, and what can be done about it*, Closing the Women's Wealth Gap, January 2017, www.womenswealthgap.org.

Noel, N., Pinder, D., Stewart III, S., Wright, J., (2019), The economic impact of closing the racial wealth gap, McKinsey & Company, USA.

QCC (2020), Definition for Diversity, Queensborough Community College, NY, https://www.qcc.cuny.edu/diversity/definition.html

Raafat, R. M., Chater, N., Frith, C., (2009). Herding in humans. *Trends in Cognitive Sciences.* 13 (10): 420–428.

Roser, M., and Nagdy, M., (2020), Genocides, *Published online at OurWorldInData.org.* Retrieved from: https://ourworldindata.org/genocides

Rummel, R.J., (1997) *Death by government*. Transaction Publishers, 1997.

Skretteberg, R. (2019), *2019 will be another year of crises*, https://www.nrc.no/shorthand/fr/2019-will-be-another-year-of-crises/index.html

Triandis, H. C., Kurowski, L. L., & Gelfand, M. J. (1994). ***Workplace diversity.*** In H. C. Triandis, M. D. Dunnette, & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (p. 769–827). Consulting Psychologists Press.

UNHCR, (2019), UNHCR: Figures at a glance, *Statistical Yearbook*, UNHCR The United Nation Refugee Agency, https://www.unhcr.org/figures-at-a-glance.html

Urban Institute, (2017), "Nine charts about wealth inequality in America (updated)," Urban Institute, October 5, 2017, www.urban.org.

Weitzman, W.L., (1992), On Diversity, *The Quarterly Journal of Economics*, Volume 107, Issue 2, May 1992, Pages 363–405, https://doi.org/10.2307/2118476

Wierzbicki, S., (2015), Census, U.S in. *American Immigration: An Encyclopedia of Political, Social, and Cultural Change* (2nd edition, Volume 1–4). Ed. James Ciment and John Radzilowski, Routledge, 69–72.

Williams Institute, UCLA School of Law; *Women in the Workplace 2019*, LeanIn.Org and McKinsey, 2019, womenintheworkplace.com; *Women in the Workplace 2018*, LeanIn.Org and McKinsey, 2018, womenintheworkplace.com.

World Book Inc., (2019), "Skin." *World Book Encyclopedia*, 2019 Edition, Scott Fetzer Co., Chicago, Illinois

WHAT MATTERS ABOUT ACADEMICS' JOB SATISFACTION? AN ANALYSIS FROM TAIWAN APIKS SURVEY

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ABSTRACT

Various governance and academic performance disadvantages due to changes in social systems have led to increasing competition and teachers' work dissatisfaction among higher education institutions in Taiwan. Building on the academic profession in the knowledge-based society (APIKS) survey, this study examines the perspective of university teachers in Taiwan, leaving insights on the perception and approval of teaching, research, university governance, and the correlation between the three constructs with job satisfaction, as well as unearthing whether these constructs foreshadow job satisfaction. SPSS statistics 25.0 and Amos 25.0 were adopted, and 1,224 valid questionnaires were collected. Results overall indicate that: (1) policy content influences academics' intentions; (2) crisis awareness acts as the best motivation for universities and teachers to initiate change; (3) institutional characteristics had the highest influence and predictive power on teachers' job satisfaction; and (4) emphasis on the institution's mission, effective leadership, good communication, and collegiality in the decision-making process will increase job satisfaction. Based on the analyses, several recommendations and further investigation are forwarded.

Key Words: Academic performance, APIKS survey, job satisfaction, Taiwan, university governance

Introduction

The 21st century's major axis is the development of a knowledge economy. Higher education has provided an arena for growth and competition, enabling worldwide knowledge innovation and human capital (Barrett, 2019; Borkovic, Nicolacopoulos, Horey, & Fortune, 2020). Thus, the competitive advantage of universities has become a critical indicator for national development and ascendancy. Taiwan's higher education institutions (HEIs) have expanded rapidly, from 105 in 1986 to a peak of 163 in 2011. Later, due in part to declining birth rates, some universities have merged or closed, reducing the overall figure to 152 HEIs in 2019 (Ministry of Education, 2020). In 2011, the number of full-time professors also increased to 49,929; however, universities assessing low enrollment and insufficient school funding left faculty positions vacant as teachers retired, leaving the figure in a total of 45,945 teachers in 2019 (Ministry of Education, 2020).

Notwithstanding, the 76.2% higher education admission rate has allowed an increase in the accessibility and universality of Taiwan's HEIs, having the literacy rate (age 15 and above) reach 98.96% (Executive Yuan Gender Equality Committee, 2020). However, demanded qualifications in the job market and changes in international competition have impacted the nature of university education in Taiwan. Today, universities are not merely the palazzos of knowledge creation, high-quality teaching and research, as well as socially responsible practices, are also expected to make the school a political, economic, social, and cultural interweaving and interactive institution (Peng & Ho, 2019).

As Taiwan's government gradually moved towards deregulation, the most salient shift has been the increasing power of university leadership and regulation of the academic profession (Amsler & Shore, 2017). Therefore, Taiwan's higher education has evolved from emphasizing alignment with the country's economic development blueprint to gradually focusing on university positioning and developing school-distinctive areas of expertise; namely, the government steered firmly the development and direction of higher education in the past and has now begun to allow institutional autonomy and academic freedom (Chen, 2019; Kohtamäki, 2019).

With the shift of concern from narrow to diversified demands, universities face unprecedented challenges encountering pressure at the national level to subsist and while also competing in the international ranking system. Furthermore, the ministry of education (MOE) has adopted a key-performance-indicator-based evaluation method to allocate funding and encourage universities to cooperate with policy development and meet international standards (Dembereldorj, 2018; Liu, 2016). Additionally, HEIs also face internal challenges, ensuring faculty job satisfaction is imperative to high competitiveness at both the national and international levels. `Highly satisfied faculty will generally be innovative and motivated to establish and maintain an environment conducive to learning' (Truell, Price, & Joyner, 1998, p.120). Universities must then adopt

diverse institutional governance schemes to increase faculty job satisfaction which will in turn drive cooperation, school quality, and prestige. On this note, the first aim of the contribution delves into the following research questions. What is the perception of university teachers in Taiwan to the current institutional governance? Is job satisfaction related to the type of institutional governance or requirements?

University teachers hold significant influence to exert school affairs and quality assurance as well as having a key role in the development of social talents. Ergo, merging academics' teaching and research responsibilities with institutional development and requirements improves the university's sustained development and increases substantially academics' job satisfaction (Albert, Davia, & Legazpe, 2018; Ho, 2014; Mamiseishvili, Miller, & Lee, 2016). Namely, if the faculty's multiple roles (teaching and research) are acknowledged by their institutions, faculty hence matches educational targets and internationalization policies (Arimoto & Daizen, 2013; Bentley, Coates, Dobson, Goedegebuure, & Meek, 2013); this meaning quality course design and research output whilst sustaining a certain degree of satisfaction with academic autonomy and the overall working environment (Balbachevsky & Schwartzman, 2013). Therefore, the second drive of this study explores the following research questions. What is the degree of perception and approval of university teachers' expectations and requirements for teaching and research? Is job satisfaction related to faculty's teaching effectiveness or research performance?

In the past, the funding of universities was based on an equal distribution principle, that is, consistent standards or leveled allocation to meet the basic operational needs (Ministry of Education, 2009). However, after the 1990s, to enhance the competitiveness of universities, the allocation of higher education funds began applying international standards, including 'choice' and 'concentration' as principles (Liu & Chan, 2017; Shin, Watanabe, Chen, Ho, & Lee, 2020; Tai, 2006); simply put, the original funding scheme based on the number of teachers, students and operations were replaced by the linkage of fund obtention with the performance of university research output or teaching results (Arimoto, 2014; Dougherty & Reddy, 2011; Miller, 2016).

Taiwan's MOE has promoted several competitive projects since 2004 to improve the quality of teaching and create top-tier universities (Ho & Nyeu, 2009; Wang, 2013). Past research showed that a university's path is influenced by key performance indicators (KPI) set by policy makers, shifting the evolvement of higher education from 'target' to 'indicator' oriented (Ministry of Education, 2019; Chan, 2017). The neglect of distinctive spheres of expertise and positioning for KPI-based funding led to undiversified institutional development. In addition, teachers struggled to achieve requirements and indicators, resulting in academics' disappointment and letdown (Stensaker, Lee, Rhoades, Ghosh, Castiello-Gutiérrez, Vance, Çalıkoğlu, Kramer, Liu, Marei, O'Toole, Pavlyutkin, & Peel, 2019). For this purpose, the third drive of this study is to identify the major factors influencing and predicting job satisfaction in the context of higher education in Taiwan: university governance, teaching, and research.

Literature Review

In recent years, advanced countries have begun to decentralize their HEIs by instating market-oriented practices that allow higher managerial autonomy within institutions, giving rise to a new governance model for the operation of higher education (Hemsley-Brown & Oplatka, 2006; Teichler, 2017; Young, 2002). New managerialism emerged, as a result, embracing core ideologies of market competition, deregulation, and privatization (Chan, 2010; Chen, 2019). Examining Clark's (1983) propositions, Chan (2010) analyzed and compared Taiwan's higher education under tight state authority and academic oligarchy to market models, uncovering that Taiwan's centralized leadership has now become market-oriented under the influence of new managerialism. Chen (2019) specifically outlined the significance of new managerialism to higher education, including: (1) the merger of government regulations and market functions; (2) emphasis on accountability and outcomes; (3) strengthening the disaggregation of an organization with professional management; (4) increase of administrative transparency; and (5) more efficient resource allocation.

Research indicates that university administrators should possess the following perspectives: (1) functional, the causal link of quality and relevance under the knowledge society (Espinosa, 2019; Neubauer, 2011); (2) structural, rankings and rising stratification of higher education (Stack, 2020); (3) organizational, increasing managerial power or governance (Apkarian, Mulligan, Rotondi, & Brint, 2014; Sims, 2019; Shin, 2011); and (4) spatial, internationalization and globalization (Wadhwa, 2016; Yonezawa & Shimmi, 2015). With these perspectives in mind, good governance allows for superior functional balance, institutional structure, and international cooperation to develop strategies on key issues and strengthens pressure helpful for implementation. Besides, Locke, Cummings, and Fisher (2011) propose university governance not solely be labeled as strong or weak, good or bad; shared governance between institutional administrators and academics is the most successful.

Shin (2010) also identified from the angle of the resource dependence theory that when the external environment changes, universities will selectively respond to the needs related to subsistence or growth. If the government proposes financial incentives at this juncture, it greatly encourages universities to enhance performance and employ efforts to match policy goals and performance standards, leading to major changes in the governance model, especially when multi-stage key evaluations with predetermined indicators are matched with the funding mechanism (Shin & Kehm, 2013). This design creates a higher response from universities to societal demands, which are often significantly influenced by the country (Shin et al., 2020).

In 2001, the MOE publishes the 'university education policy white book', which outlines the importance of 'pursuing excellence and improving quality' to promote effective use of resources and improve teaching and research quality (Ministry of Education, 2001). The establishment of an increased quantity of HEIs in Taiwan is leading to an oversupply of schools, at the same time,

as enrollments increase, the average student profile quality decreases. In addition, recent government budgetary constraints have not been capable of supporting the expansion of educational funding, which has led to the dilution of overall educational resources. The quality and competitiveness of universities will naturally be affected by the constraint of funding (Wang, Chou, & Wang, 2018).

Moreover, past leveled funding allocation placed an excessive emphasis on standardized equality, which by lacking the establishment of competition and evaluation schemes resulted in excessive resource dispersion; this failed to guide schools into building areas of expertise, affecting institutional quality. The continuous promotion of performance-based projects such as the 'research university integration program' and 'development of top-tier universities and top research centers', etc. by the MOE (Ministry of Education, 2005) focused on improving the research standards of universities. However, funding indicators and acceptance solely emphasized the research performance of universities, causing university teachers to favor research over teaching, severely sidelining the essence of education (Arimoto, 2015; Weert, 2013). Therefore, the 'rewarding university teaching excellence program' and the 'higher education sprout project' are implemented to amend the challenges faced by higher education. The MOE attempts to highlight teaching quality and student learning effectiveness, expecting teachers to pursue teaching excellence and professional development. Nevertheless, Wang (2013) indicates that university teachers' involvement in academic research has evident benefits for their prestige and promotion due to its practical and quantified evaluation, while equally entailing disregard for teaching.

Work satisfaction refers to an individual's emotional orientation towards work roles and experience. Getzels, Lipham, and Campbell (1968) believe that 'satisfaction' is a function that exists in the consistency between individual needs and institutional expectations. When personal needs are consistent with systematic expectations, satisfaction will reach the highest point and when inconsistent, satisfaction will reach the lowest point. In other views regarding the level of 'job satisfaction', Lawler and Porter (1967) summarize Maslow's needs with a slight difference shown in the physiological needs being omitted and replaced by higher-level autonomous needs. Therefore, academics' professional life and job satisfaction are highlighted as essential research topics in higher education. Institutional environment (Balbachevsky & Schwartzman, 2013), university governance, and teaching and research (Arimoto & Daizen, 2013; Bentley et al., 2013; Höhle & Teichler, 2013;) have all shown significant impact on the overall job satisfaction of university professors. Furthermore, job satisfaction has a profound impact on the quality of higher education services and organizational commitment (Trivellas & Santouridis, 2016).

Hypotheses

Founded on the aforementioned literature and drivers, research hypotheses are as follows:

1. University teachers with different background variables present significant differences in their perceptions of university governance, research, and teaching.
2. University teachers' perceptions and approval of research, teaching, university governance, and work satisfaction have significant correlations.
3. University governance and teachers' input and performance in teaching and research have significant predictive power on work satisfaction.

Methodology

To verify the research hypotheses, the authors utilized the scale developed by the Academic Profession in the Knowledge-based Society (APIKS) survey to measure the cognition of selected variables by university teachers in Taiwan. APIKS is an international and comparative study, which is the third wave after Changing Academic Profession (CAP) 2007 and Carnegie 1992 projects (Arimoto, 2015), aiming to understand the creation and emergence of the knowledge society, comparing academics' changing working conditions across the world with more than 20 participating countries including Japan, South Korea, Germany, Finland, etc. Taiwan joined the APIKS project in 2018.

As shown in Figure 1, analyses in the present research statistically compare perceptional differences regarding teachers' research, teaching, and university governance contingent on personal background and institutional information. Subsequently, the relation between job satisfaction and the three constructs of teachers' research, teaching, and university governance was verified separately. Finally, the authors unearth whether these three constructs foreshadow job satisfaction.

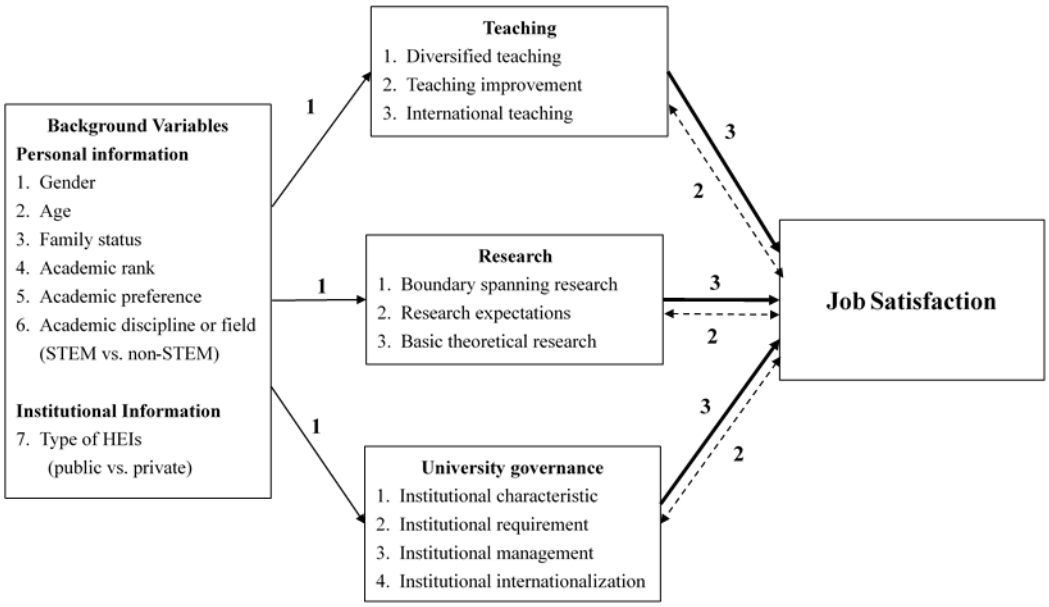

Figure 1: Research Framework

Samples and procedure

This study was conducted with teachers from HEIs in Taiwan with the sampling source originating from 152 colleges and universities. Institutional review board (IRB) approval was granted before the dispersal of the survey instrument. Considering the broad number of full-time teachers, purposive sampling was conducted. To obtain representation in sampling, the study established institutions' geographical location (northern, central, and southern Taiwan) and type (public vs. private) as criteria for sampling and classification before issuance. The survey was distributed between March to July 2019. The authors firstly contacted participants willing to accept or university administrators willing to assist in forwarding the survey by phone or email. After the informed and consent procedure, a physical survey was distributed for participants to fill in and return with anonymity. Pertaining a total of 1,800 surveys distributed, 1,438 were completed, of which 1,224 rendered valid (recovery rate of 68%).

SPSS Statistics 25.0 and Amos 25.0 were used to test the reliability, validity, and suitability of the measurement modes ensuring the quality of the surveys and items considered. First, descriptive statistics, *t*-tests, and one-way analysis of variance tested whether university teachers with different background variables reflect varying perceptions on the three constructs of teaching, research, and university governance. Then, Pearson product-moment correlation coefficient verified the correlation of the three constructs with job satisfaction. Finally, a multiple stepwise regression analysis revealed the construct which holds a major impact and foreshadowing on job satisfaction.

Measures and variables

This research extracts questionnaire items from APIKS survey, namely the four constructs of 'Teaching', 'Research', 'University governance', and 'Job satisfaction' for study and analysis. APIKS questionnaire uses the Likert five-point scale to represent 1 for strongly disagree' to 5 for 'strongly agree'. The following is an explanation of each construct and the analyzed results from the items.

1. Teaching

From the APIKS survey, a total of 8 questions were selected to form the 'teaching' construct to understand the university teachers' perception and approval of teaching activities such as: 'Practically oriented knowledge and skills are emphasized in your teaching', 'At your institution, there are adequate training courses for enhancing teaching quality', and 'Your research activities reinforce your teaching'.

To ensure the consistency and stability of the items extracted for this section, the authors performed Cronbach's α internal consistency analysis. The statistical results showed standardized Cronbach's α=.62, confirming credibility. In addition, the KMO value of the selected items for teaching equaled 0.67, and a Bartlett sphericity test valued 1170.36 (p<.001), allowing exploratory factor analysis (EFA) to be performed. Following the analysis results, the authors labeled items in the teaching sub-constructs as 'diversified teaching', 'teaching improvement' and 'international teaching'; three sub-constructs to serve as independent variables for subsequent prediction in 'job satisfaction'. As for validity on teaching-related items, the Confirmatory Factor Analysis (CFA) results indicated that the suitability between the data and the model rendered not satisfactory, yet acceptable (RMSEA = .01, GFI = .956, AGFI = .907, RMR = .051).

2. Research

This study extracts 10 questions from the APIKS survey for analysis to understand the perception and approval of university faculty on research input; to mention a few of the measurement items: 'Socially-oriented/intended for the betterment of society', 'Commercially-oriented/intended for technology transfer', 'Being active in carrying the research results beyond typical publications', 'Complying to guidelines for research set by research funders', and 'Based in one discipline'.

The statistical result of standardized Cronbach's α=.42 for the research construct as barely credible, KMO of 0.60, and a Bartlett sphericity test value of 776.47 (p<.001), meaning EFA could be performed. The authors made concise items into three sub-constructs 'boundary spanning research', 'research expectations', and 'basic theoretical research' as independent

variables for subsequent predictions of 'job satisfaction'. In terms of validity, the CFA results showed good suitability between the data and the model (RMSEA = .065, GFI = .969, AGFI = .947, RMR = .078, PGFI = .564, PNFI = .513, PCFI = .534).

3. University Governance

The authors also extracted 20 questions from the APIKS survey for analysis to understand the degree of perception of teachers on university governance, to name a few: 'At your institution, there is a strong emphasis on the institution's mission', 'There is collegiality in decision-making processes', 'Performance-based allocation of resources to academic units', 'There is a competent leadership', 'There is good communication between management and academics', and 'There is a top-down management style'.

The statistical results of standardized Cronbach's α=.87, KMO value of 0.90, and the Bartlett sphericity test value of 9041.55 (p<.001), allowing EFA for 'university governance' to be performed. Following the analysis results, the present study capsuled the 'university governance' items into four sub-constructs: 'institutional internationalization', 'institutional characteristic', 'institutional requirement', and 'institutional management', as independent variables for subsequent prediction of 'job satisfaction'. For the validity of 'university governance', the data and model were suitable through CFA (RMSEA = .078, GFI = .894, AGFI = .864, PGFI = .698, PNFI = .731, PCFI = .744).

4. Job Satisfaction

The authors extracted 3 questions from the APIKS survey for analysis to comprehend the degree of perception and status of university teachers' job satisfaction; namely, 'My job is a source of considerable personal strain', 'Teaching and research are hardly compatible with each other' and 'If I had it to do over again, I would not become an academic'. Job satisfaction serves as the dependent variable in this research. The statistical results of standardized Cronbach's α=.52, KMO value of 0.60, and a Bartlett sphere test value of 236.449 (p<.001), allowing EFA for 'job satisfaction' to be performed. For the validity of 'job satisfaction', the data and model were suitable through CFA (GFI = 1.000, NFI=1.000, CFI=1.000, RMR=.000).

Results

To uncover the perception of university teachers in Taiwan on 'teaching', 'research' and 'university governance' and the three constructs' relation and foreshadowing of 'job satisfaction', a total of 1,224 valid surveys were collected consisting of 64.91% males and 35.09% females with the age distribution of 21.5% in the range of 36-45 years old, 39.6% in the range of 46-55 years old, and 38.9% in the range of 56 years and older. Regarding family status,

84.7% 'married/partner' and 15.3% 'single'. Concerning academic rank, 22.2% for 'professor', 37% 'associate professor', 40.8% 'assistant professor'. In terms of academic preference, a higher portion (62%) of teachers identified as 'teaching oriented' while 38% as 'research oriented'; for academic discipline or field, 51.8% of respondents are dedicated to 'STEM' fields, 48.2% are 'non-STEM'; 62.1% of respondents belong to 'public HEIs' while 37.9% to 'private HEIs'. The perceptions of university teachers on teaching, research, and university governance under distinct background variables are shown in Table 1 and Table 2. The analysis results and discussion are as follows.

University teachers' perceptions of teaching, research, and university governance under distinct background variables

As seen in Table 1, for gender in the 'research' construct, the scores of male teachers are significantly higher on 'boundary spanning research' and 'basic theoretical research' compared to those of female teachers, showing t=1.97, p<.05, and t=3.03, p<.01 respectively. Overall, the total score for research is still considerably higher for male teachers than for females (t=2.75, p<.01). It is apparent from the research segment that male teachers are more attentive to research input than females and greatly regard boundary spanning cooperation while participating and investing more in basic research.

Detailed in the age section, the authors observe significant disparities of university teachers depending on age in the three sub-constructs of 'research expectations' (F=4.77, p<.01), 'institutional internationalization' (F=4.93, p<.01), and 'institutional characteristic' (F=7.97, p<.001); as did the two constructs of 'research' (F=3.19, p<.05) and 'university governance' (F=4.02, p<.05). Therefore, a succeeding comparison using the Scheffe method discovered that average scores of 36-45-year-old university teachers are considerably higher than those of 46-55 and 56-and-over years old on 'research expectations', 'institutional internationalization' and 'institutional characteristic'. Regarding the construct of 'university governance', university teachers between 36 and 45 years old are also substantially higher than those over 56 years old. Within the family status section, the analysis found that 'institutional requirement', the average score of 'married/partner' teacher was to a large extent lower than the average score of 'single' teacher (t=-2.18, p<.05).

Table 1: Variance analysis for gender, age, and family status of university teachers on construct or sub construct

Gender			
Construct or Sub-construct	***T***	***p*-value**	
Boundary spanning research	1.97	0.05	Male > Female
Basic theoretical research	3.03	0.00	Male > Female
Research	2.75	0.01	Male > Female
Age			
Construct or Sub-construct	**F**	***p*-value**	**Scheffe's tests**
Research expectations	4.77	0.01	36-45 > over 56 (p<.05) 46-55 > over 56 (p<.05)
Research	3.19	0.04	46-55 > over 56 (p<.05)
Institutional internationalization	4.93	0.01	36-45 > over 56 (p<.05) 46-55 > over 56 (p<.05)
Institutional characteristic	7.97	<.001	36-45 > over 56 (p<.05) 46-55 > over 56 (p<.05)
University governance	4.02	0.02	36-45 > over 56 (p<.05)
Family status			
Sub-construct	***T***	***p*-value**	
Institutional requirement	-2.180	0.029	Single > Married/partner

Referring to 'academic rank' in Table 2, the authors use one-way ANOVA to verify. The results display notable differences in average scores of two sub-constructs 'boundary spanning research' (F=3.82, p<.05) and 'institutional characteristic' (F=3.06, p<.05) for university teachers of distinct academic ranks; average scores in the 'research construct' are also significantly different (F=3.22, p<.05). Afterward, the Scheffe method was used for further comparison. Considering the elevated strictness of the test method, the average score of the sub-construct of 'institutional characteristic' has no significant difference among academic ranks, however for the 'research' construct and 'boundary spanning research', the 'professor' category is notably higher than 'associate professor'.

Concerning 'academic preference' the present study divides teachers' self-conscious personal academic tendencies into: 'teaching oriented' and 'research oriented'. The analysis results indicate that whether it is 'international teaching' (t=-4.81, p<.001), 'boundary spanning

research' (*t*=-3.69, *p*<.001), 'research expectations' (*t*=-3.26, *p* <.001) and 'institutional characteristic' (*t*=-2.39, *p*<.05), or 'teaching' construct (*t*=-3.18, *p*<.001) or 'research' construct (*t*=-4.35, *p*<.001) , teaching-oriented teachers are notably lower than research-oriented ones. Conversely, teaching-oriented teachers' perception of 'institutional requirement' (*t*=2.26, *p*<.05) and 'institutional management' (*t*=3.23, *p*<.001) is higher than research-oriented teachers. In addition, regarding the academic field, intriguing results indicate STEM teachers ranking notably lower than non-STEM teachers in the section of 'boundary spanning research' (*t*=-2.07, *p*<.05). Even so, the 'research expectations' of university teachers show the perception of STEM teachers substantially higher than that of non-STEM teachers (*t*=3.15, *p*<.01).

Table 2: Variance analysis for academic rank, academic preference, **the** academic field of university teachers on 30 constructs or sub-construct

Academic rank			
Construct or Sub-construct	**F**	***p*-value**	**Scheffe's tests**
Boundary spanning research	3.82	0.02	Prof.>Asso. Prof.（*p*<.05）
Research	3.22	0.04	Prof.>Asso. Prof.（*p*<.05）
Institutional characteristic	3.06	0.05	Not significant
Academic preference			
Construct or Sub-construct	***t***	***p*-value**	
International teaching	-4.81	<.001	Research > Teaching
Teaching	-3.18	<.001	Research > Teaching
Boundary spanning research	-3.69	<.001	Research > Teaching
Research expectations	-3.26	<.001	Research > Teaching
Research	-4.35	<.001	Research > Teaching
Institutional characteristic	-2.39	0.02	Research > Teaching
Institutional requirement	2.26	0.02	Teaching > Research
Institutional management	3.23	<.001	Teaching > Research
Academic discipline or field			
Sub-construct	***t***	***p*-value**	
Boundary spanning research	-2.07	0.04	non-STEM > STEM
Research expectations	3.15	0.00	STEM > non-STEM

The relationship between Taiwan's university teachers' job satisfaction with teaching, research, and university governance

The present study utilizes Chiou's (2010) proposition as the criterion for judgment; provided the correlation coefficient |r| of less than .10, 'weak or no correlation' is identified; between .10 and

.39 implies 'low correlation'; between .40 and. .69 is 'moderately correlated'; between .70 and .99 connotes 'highly correlated'; |r| is 1 is 'completely correlated'. Observing Table 3, a low-degree positive and significant correlation is found between 'teaching' and 'job satisfaction' (.17). The correlation coefficient among each sub-construct and 'job satisfaction' in the 'teaching' construct ranges from .09 to .17, also meaning weak to a low-degree positive correlation. Notwithstanding, the correlation coefficient between the 'research' construct and 'job satisfaction' is solely .09, a weak positively significant correlation, and the correlation between 'boundary spanning research' and 'job satisfaction' has not reached a significant level.

Finally, the correlation coefficient between the constructs of 'university governance' and 'job satisfaction' is .15, meaning a low-degree positively significant correlation. The correlation coefficients of 'institutional characteristic', 'institutional internationalization' to 'job satisfaction' are .30 and .23 respectively, both of which are low-degree positively significant correlations. The interesting finding is that the correlation coefficient between 'institutional management' and 'job satisfaction' is -.20 which is a low-degree negatively significant correlation.

Table 3: Correlations matrix of job satisfaction with each construct/sub-construct

	DT	TI	IT	T	BSR	RE	BTR	R	II	IC	IR	IM	UG	JS
JS	.09**	.17**	.09**	.17**	0.04	.08**	.06*	.09**	.23**	.30**	.10**	-.20**	.15**	1

Note: Teaching=T; Diversified teaching=DT; Teaching improvement=TI; International teaching=IT; Research=R; Boundary spanning research=BSR; Research expectations=RE; Basic theoretical research= BTR; University governance= UG; Institutional internationalization= II; Institutional characteristic=IC; Institutional requirement=IR; Institutional management= IM; Job satisfaction=JS

The foreshadowing of job satisfaction from university teachers' teaching, research, and university governance

This study identifies sub-constructs in 'teaching', 'research' and 'university governance' as independent variables, and 'job satisfaction' as the dependent variable, to apply multiple stepwise regression analysis to understand which factors have foreshadowing effects on 'job satisfaction'. After multiple stepwise (Stepwise Estimation) regression screenings, the criterion for selecting a variable is the probability of F value $\leq .05$, while the criterion for deleting a variable is the probability of F value $\geq .10$. After analysis, a total of five items were selected as regression prediction variables: 'institutional characteristic', 'institutional management', 'teaching improvement', 'basic theoretical research, and 'institutional internationalization'. Subsequently, the authors gradually selected these five variables into mode 1 to mode 5; mode 1, adjusted R^2 (0.09), F = 116.43, p <0.001; mode 2, adjusted R^2 (0.13), F = 94.84, p <0.001; mode 3, adjusted R^2 (0.14), F = 66.03, p <0.01; mode 4, adjusted R^2 (0.14), F = 50.94, p <0.05; as

indicated in Table 4, mode 5, adjusted R^2 (0.14), F = 41.78, p <0.05, reached statistical significance considering the regression effect is at a noteworthy level.

Table 4: Multiple regression analysis - ANOVA[a]

Model	Sum of squares	df	Mean square	*F*	Sig.
5 Regression	89.01	5	17.80	41.78	<.001[f]
Residual	519.04	1218	0.43		
Total	608.05	1223			

a. Dependent Variable: Job Satisfaction

f. Predictors: (Constant), Institutional characteristic, Institutional management, Teaching improvement, Basic theoretical research, Institutional internationalization

The five variables predict a total of 14.3% explanatory power for 'job satisfaction'. When the individual explanatory power is in mode 1, the 'institutional characteristic' variable reaches an explanatory power of 8.6%; after the addition of 'institutional management' in mode 2 the explanatory power increases by 4.7% (cumulative explanatory power of 13.3%); when mode 3 joins 'teaching improvement' the cumulative explanatory power reaches 13.8%; when mode 4 joins 'basic theoretical research' the cumulative explanatory power reaches 14.0%. Finally, as shown in Table 5 (model summary), when mode 5 is added to 'institutional internationalization' the explanatory power increases to 14.3%. Therefore, inference of 'institutional characteristic' explaining to the highest degree, followed by 'institutional management', and the roughly similar explanatory power of 'teaching improvement', 'basic theoretical research' and 'institutional internationalization' to be allowed.

Table 5: Multiple regression analysis - Model summary

Model	*R*	R square	Adjusted R square	Std. Error of the estimate
5	0.38[a]	0.15	0.143	0.65

a. Predictors: (Constant), Institutional characteristic, Institutional management, Teaching improvement, Basic theoretical research, Institutional internationalization

In addition to testing the explanatory power of respective variables for the dependent variable, the multiple regression analysis also examines the 'collinearity' problem to determine whether the independent variables of the regression model are truly independent. As shown in Table 6, coefficients in mode 5, when the five independent variables append the regression model, the constant is 2.47. 'institutional characteristic' variable is B=.22, and the standardized regression coefficient β = 0.24, t = 6.90, p<0.001, attains significance, with tolerance = 0.59, VIF = 1.70, finally this translates into an absent collinearity problem. 'Institutional management' variable is B = -.20, and the standardized regression coefficient β = -.23, t = -8.46, p<0.001, reaching significance, tolerance = 0.99, VIF = 1.01, finally showing absence of a collinearity problem. Other variables such as 'teaching improvement', 'basic theoretical research', and 'institutional

internationalization' are equally significant without a collinearity problem. Thus, the regression equation of this study may be written as:

Job Satisfaction = 2.47 + 0.22 Institutional characteristic - 0.20 Institutional management + 0.06 Teaching improvement + 0.06 Basic theoretical research + 0.07 Institutional internationalization

Table 6: Multiple Regression Analysis - Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity statistics	
		B	Std. Error	β			Tolerance	VIF
5	(Constant)	2.47	0.16		15.69	<.001		
	Institutional characteristic	0.22	0.03	0.24	6.90	<.001	0.59	1.70
	Institutional management	-0.20	0.02	-0.23	-8.46	<.001	0.99	1.01
	Teaching improvement	0.06	0.03	0.07	2.38	0.02	0.86	1.16
	Basic theoretical research	0.06	0.03	0.06	2.23	0.03	0.99	1.01
	Institutional internationalization	0.07	0.03	0.07	2.13	0.03	0.60	1.66

a. Dependent Variable: Job Satisfaction

The present findings confirm the negative impact of 'institutional management' on teachers' job satisfaction in HEIs in Taiwan. As per the standardized coefficient β value, 'institutional characteristic' reveals the highest influence while 'basic theoretical research' is the lowest. Among variables owning positive influence, 'institutional characteristic' has the highest; noting the negative influence caused by 'institutional management' is lower than the positive influence of 'institutional characteristic'. To conclude, 'institutional characteristic', 'institutional management', 'teaching improvement', 'basic theoretical research' and 'institutional internationalization' all have explanatory power for 'job satisfaction' and have foreshadowing effects.

Discussion

The increasing accessibility of higher education in Taiwan, declining birth rates, and the impact of global competition pressure universities to transcend past governance models to operate effectively. Although the MOE emphasizes the importance of university autonomy, academic freedom, and system deregulation, pressures from international competition and budget constraints in recent years have led the government to performance-based funding schemes, accenting teaching effectiveness and industry-academia cooperation (Chan, 2016; Hsu & Li, 2014).

Under specific policy guidelines and performance indicators, universities are encouraged to develop distinctive traits by following the purpose and function of their establishments and are expected to develop personalized operations, however, university development tends to follow the directions specified by government funding guidelines (Shin et al., 2020). Over time, university reforms appear to be aimed at performance while maintaining hints of bureaucracy, alongside a campus culture of first come first served and one may demand more of junior teachers as they must still face promotion stages.

This study, by way of comparison, while considering different background variables, detected teachers between the ages of 36 and 45 to be more attentive than senior members of the expectations of research, campus internationalization, institutional governance, and other related issues. It can be hypothesized that teachers between the ages of 36 and 45 are in the process of career promotion, needing to further regard institutional research requirements and experience more opportunities for interaction and administrative activities. Even so, a university is the assemblage of all teachers and students, therefore academic performance and administrative input must not be sustained only by junior teachers. If more communication channels between senior and junior members are created, increased participation and joint decision-making will contribute to the future development of the university.

In addition, evidence from this study reveals the average scores of 'professors' in the 'research' construct and 'boundary spanning research' to be significantly higher than those of 'associate professors.' These statistical findings reflect the fact that professors possess more resources and connections in interdisciplinary or industry-academia cooperation, equaling more means and momentum for academic cooperation than associate professors (see Table 2). This conclusion also reflects the HEIs and teachers' condition of the strong remain powerful while the weak remain frail; in other words, while the government pursues market-oriented mechanisms and academic excellence, the authors perceive blind spots and veiled concerns of Taiwan's funding allocation and performance indicators. If policies emphasize industry-academia research and development and technology transfer, investment in basic theoretical research becomes indispensable. In addition, cultivating potential assistant or associate professors by granting them funding for research represents opportunities that can be the key paths for university sustainable research development.

The execution of program and affair advancements rely on teachers; especially with Taiwan's increased higher education accessibility, students' enrollment conditions vary, implying teachers' increased devotion to teaching and counseling. Results in the present study are coherent with the reality of Taiwanese teachers' powerlessness to meet research output requirements while managing daily teaching affairs. Moreover, policy content influences academics' intentions (Bowden & Gonzalez, 2012; Zgaga, Teichler, Schuetze, & Wolter, 2019), and teaching faculty obtain more recognition and execution opportunities compared to research faculty as they experience more contact with recent performance-based projects promoted by the

MOE (such as the teaching excellence project), institutional indicators, related regulations, multi-promotion policy, and institutional management styles, etc. Although institutional autonomy is a prerequisite for universities and teachers to engage freely in academic work and to stimulate creativity, autonomy and accountability are two sides of the same coin (Euben, 2002). Teachers who demand greater faculty autonomy must simultaneously reflect on the increased teaching and research responsibility.

In addition, Taiwan's non-STEM teachers manifest a higher perception of 'boundary spanning research' than STEM ones. A reasonable explanation may be the response of non-STEM teachers as their departments experience low student admissions, job shortages, and lack of employment competitiveness. To avoid merged or abolished departments, active reflection on possible solutions, regard of interdisciplinary research, social service which reflects both theory and practice, and market-oriented industry research and development is conducted. In Taiwan, the declining birthrate is the greatest crisis in school operations, especially in private universities; crisis awareness acts as the best motivation for universities and teachers to initiate change (Roeser & Peck, 2009). This ability to perceive and adapt to sustained development or complex crossroads allows non-STEM academics to be more flexible while searching for cross-disciplinary opportunities so that the traditional discipline gradually remaps its scope. Even so, the uncertainty of the discipline will remain so long as the job market evolves.

The relationship betwixt teaching, research, university governance, and job satisfaction among university teachers in Taiwan indicated a weak to a low degree of positive and significant correlation in all sub-constructs except for 'boundary spanning research' (not significant). In terms of predictive capacity on university teachers' job satisfaction, 'institutional characteristics' had the highest influence, especially when school's senior administrators demonstrate effective leadership. Emphasis on the institution's mission, effective communication between management and academics, and collegiality in the decision-making process will increase teachers' job satisfaction. In contrast, 'institutional management' indicated a negative impact on the job satisfaction of university teachers. Since teachers enjoy high social prestige and practice in a complex body of knowledge, a possible rationalization for the negative impact may be that high-pressure and top-down management models create dissatisfaction and unwillingness to cooperate with school policies. Therefore, it is recommended that university leaders provide effective communication and an administrative support system to substitute requirements with encouragement, inspiring faculty willingness and support towards institutional planning and policy implementation (Teichler, 2017).

Concluding Remarks

The prime contribution of the present study is to enrich the field of higher education from the perspective of university teachers, leaving insights on the two most important responsibilities of personal academic tasks (teaching and research), the perception and approval of university governance, and the correlation between job satisfaction. Its conclusions and recommendations add to a diversity of literature on governance and academic profession in changing academia for a non-western context. Finally, by setting job satisfaction as the dependent variable, the authors may observe factors that predict university teachers' job satisfaction under declining birth rates, global competition, and institutional transformation. After all, under the premise of comprehensive reforms in higher education systems around the world, university teachers in Taiwan have recognized the need to integrate the academic profession, industrial practices, and the market. This crisis awareness has led non-STEM teachers to further participate in multidisciplinary and socially oriented research for the betterment of society. This phenomenon is true for university teachers who have persistently emphasized academic freedom and academic identity, a truly complicated transformation to build.

Alternatively for university governance, 'institutional characteristics' have become an important positive factor in foreshadowing teacher job satisfaction; teachers expect university administrators to have effective leadership to encounter the dynamical and competitive environment of higher education. Universities should clearly state tailored positioning and missions, stress communication, and collegial governance models with bottom-up decision-making. This regard also reflects the gradual effect of academic authority and power in HEIs promoted by the MOE after the passage of the 'university law' in Taiwan (Liu, 2014). By contrast, the top-down management style has become a negative factor in predicting teacher job satisfaction. This finding is the worthy inspiration for Taiwan's current university governance model, reminding school administrators pursuing world rankings, performance, or funding allocation to include the voice and participation of grassroots teachers when planning and implementing strategies.

To conclude, a hope from university teachers to become influential on key academic policies exists. This research has given rise to many questions in need of further investigation in the following areas: how can universities create supportive and collegial campus atmospheres and administrative operations? and how is shared governance impacting Taiwan's current university governance model?

References

Albert, C., Davia, M. A., & Legazpe, N. (2018). Job satisfaction amongst academics: The role of research productivity. *Studies in Higher Education, 43*(8), 1362-1377.

Amsler, M., & Shore, C. (2017). Responsibilisation and leadership in the Neoliberal University: A New Zealand perspective. *Discourse: Studies in the Cultural Politics of Education, 38*(1), 123-137.

Apkarian, J., Mulligan, K., Rotondi, M. B., & Brint, S. (2014). Who governs? Academic decision-making in US four-year colleges and universities, 2000-2012. *Tertiary Education and Management, 20*(2), 151-164.

Arimoto, A. (2014). The teaching and research nexus in the third wave age. In Shin, J. C., Arimoto, A., Cummings, W. K., & Teichler, U. (Eds.), *Teaching and research in contemporary higher education: Systems, activities, and rewards* (pp. 15-33). Dordrecht: Springer.

Arimoto, A. (2015). The teaching and research nexus from an international perspective. In Cummings, W. K., & Teichler, U. (Eds.), *The relevance of academic work in comparative perspective* (pp. 91-106). Dordrecht: Springer.

Arimoto, A., & Daizen, T. (2013). Factors determining academics' job satisfaction in Japan from the perspective of role diversification. In Bentley, P. J., Coates, H., Dobson, I., Goedegebuure, L., & Meek, V. L. (Eds.), *Job satisfaction around the academic world* (pp. 145-165). Dordrecht: Springer.

Balbachevsky, E., & Schwartzman, S. (2013). Job satisfaction in a diverse institutional environment: The Brazillian experience. In Bentley, P. J., Coates, H., Dobson, I., Goedegebuure, L., & Meek, V. L. (Eds.), *Job satisfaction around the academic world* (pp. 55-82). Dordrecht: Springer.

Barrett, B. (2019). The dual roles of higher education institutions in the Knowledge-Economy. *International Journal of Multidisciplinary Perspectives in Higher Education, 4*(1), 74-88.

Bentley, P. J., Coates, H., Dobson, I. R., Goedegebuure, L., & Meek, V. L. (2013). Academic job satisfaction from an international comparative perspective: Factors associated with satisfaction across 12 countries. In Bentley, P. J., Coates, H., Dobson, I., Goedegebuure, L., & Meek, V. L. (Eds.), *Job satisfaction around the academic world* (pp. 239-262). Dordrecht: Springer.

Borkovic, S., Nicolacopoulos, T., Horey, D., & Fortune, T. (2020). Students positioned as global citizens in Australian and New Zealand universities: A discourse analysis. *Higher Education Research & Development*, 1-16.

Bowden, R. G., & Gonzalez, L. (2012). Faculty appointments and scholarly activity: A changing of the guard? *International Journal of Higher Education, 1*(2), 166-183.

Chan, P. H. (2017). Exploring the strategic planning direction of higher education resource allocation from the perspective of comparative interest and competitive advantage. *Taiwan Education Review Monthly, 6*(4), 01-08.

Chan, S. J. (2010). Reforming higher education governance policy in Taiwan: The perspective of new managerialism. *Journal of Educational Resources and Research, 94*, 1-20.

Chan, Y. (2016). Recent promotion of policies of collaboration between industry and higher education in Taiwan. *Taiwan Education Review, 702*, 10-18.

Chen, R. J. (2019). *Educational administration and governance: New managerialism approach.* Taipei, Taiwan: Xuefu Culture.

Chiou, H. (2010). *Quantitative research and statistical analysis -SPSS/PASW Chinese Windows version data analysis example analysis* (Fifth Edition). Taipei, Taiwan: Wu-Nan Book Inc.

Clark, B. R. (1983). The higher education system. Academic organization in cross-national perspective. Berkeley, LA: University of California Press.

Dembereldorj, Z. (2018). Review on the impact of world higher education rankings: Institutional competitive competence and institutional competence. *International Journal of Higher Education, 7*(3), 25-35.

Dougherty, K. J., & Reddy, V. (2011). *The impacts of state performance funding systems on higher education institutions: Research literature review and policy recommendations.* Community College Research Center Working Paper No. 37, Columbia University, New York, NY.

Espinosa, E. O. C. (2019). The formation of intellectual capital and its ability to transform higher education institutions and the knowledge society. *IGI Global*, 1-312.

Euben, D. R. (2002). *Academic freedom of professors and institutions.* Washington, DC: American Association of University Professors. Retrieved from https://www.aaup.org/issues/academic-freedom/professors-and-institutions

Executive Yuan Gender Equality Committee (2020). *Literacy rate of the population over 15.* Retrieved from https://www.gender.ey.gov.tw/gecdb/Stat_Statistics_Detail/Data.aspx?sn=cC3K6vUAfeUlTCcfbr03CQ%3D%3D

Getzels, J. W., Lipham, J. M., & Campbell, R. F. (1968). *Education administrations as a social process, theory, research, practice.* New York, NY: Harper & Row.

Hemsley-Brown, J., & Oplatka, I. (2006). Universities in a competitive global marketplace: A systematic review of the literature on higher education marketing. *International Journal of Public Sector Management, 19*(4), 316-338.

Ho, C. C., & Nyeu, F. Y. (2009). Globalization and higher education strategic alliance. *Bulletin of Educational Resources and Research, 44*, 29-50.

Ho, S. H. (2014). New thinking on school institutional research: The establishment of student enrollment management models in universities and colleges. *Evaluation Bimonthly, 52*, 14-18.

Höhle, E. A., & Teichler, U. (2013). Determinants of academic job satisfaction in Germany. In Bentley, P. J., Coates, H., Dobson, I., Goedegebuure, L., & Meek, V. L. (Eds.), *Job satisfaction around the academic world* (pp. 125-144). Dordrecht: Springer.

Hsu, Y. D., & Li, J. Y. (2014). A review of the implementation of university autonomy from the perspective of the legal status of universities: Focusing on the legal personalization of universities. *Contemporary Educational Research Quarterly, 22*(1), 169-209.

Kohtamäki, V. (2019). Academic leadership and university reform-guided management changes in Finland. *Journal of Higher Education Policy and Management, 41*(1), 70-85.

Lawler, E. E., III., & Porter, L. W. (1967). The effect of performance on job satisfaction. *Industrial Relations, 7*, 20-28.

Liu, K. C. (2014). A discourse analysis on 'Stepping Towards premier University' policy in Taiwan: The perspective of post-structuralism. *Taiwan Journal of Sociology of Education, 14*(2), 33-71.

Liu, H. H., & ChanYang, Y. (2017). Research funding allocation mechanism in higher education in the United Kingdom and its implications for Taiwan. *Contemporary Educational Research Quarterly, 25*(2), 77-112.

Liu, N. C. (2016). Academic ranking of world universities and the performance of East Asian universities. RIHE international seminar reports. No. 24. *Research Institute for Higher Education*, 1-16.

Locke, W., Cummings, W., & Fisher, D. (2011). Comparative Perspectives: Emerging Findings and Further Investigations. In Locke, W., Cummings, W. K., & Fisher, D. (Eds.), *Changing governance and management in higher education: The perspectives of the academy.* (pp. 369-380). Dordrecht: Springer.

Mamiseishvili, K., Miller, M. T., & Lee, D. (2016). Beyond teaching and research: Faculty perceptions of service roles at research universities. *Innovative Higher Education, 41*(4), 273-285.

Miller, T. (2016). Higher education outcomes-based funding models and academic quality. *Lumina Foundation*, 1-18.

Ministry of Education, Taiwan, ROC. (2001). *University education policy white paper*. Taipei, Taiwan: The author.

Ministry of Education, Taiwan, ROC. (2005). *Rewarding University Teaching Excellence Project- 94 annual project work manual*. Taipei, Taiwan: The author.

Ministry of Education, Taiwan, ROC. (2009). *Review of the current situation of higher education and the development strategy project report on the pursuit of excellence*. Taipei, Taiwan: The author.

Ministry of Education, Taiwan, ROC. (2019). *Higher education sprout project.* Retrieved from https://sprout.MOE.edu.tw/SproutWeb/Project/Origin

Ministry of Education, Taiwan, ROC. (2020). *Education statistical information network.* Retrieved from https://stats.MOE.gov.tw/

Neubauer, D. E. (2011). The emergent knowledge society and the future of higher education: Asian perspectives. Comparative development and policy in Asia. *Routledge, Taylor & Francis Group*. 1-224.

Peng, Y. P., & Ho, S. H. (2019). Does HEI external social capital lead to better performance? Examination of mediating model of internal social capital and institutional slack resource. *Contemporary Educational Research Quarterly*. *27*(3), 65-99.

Roeser, R. W., & Peck, S. C. (2009). An education in awareness: Self, motivation, and self-regulated learning in contemplative perspective. *Educational Psychologist*, *44*(2), 119-136.

Shin, J. C. (2010). Impacts of performance-based accountability on institutional performance in the US. *Higher Education*, *60*(1), 47-68.

Shin, J. C. (2011). South Korea: Decentralized Centralization – Fading Shared Governance and Rising Managerialism. In Locke, W., Cummings, W. K., & Fisher, D. (Eds.), *Changing Governance and Management in Higher Education: The Perspectives of the Academy* (pp. 321-342). Dordrecht: Springer.

Shin, J. C., & Kehm, B. M. (eds.) (2013). *Institutionalization of World-class University in Global Competition.* Springer.

Shin, J. C., Watanabe, S., Chen, R. J., Ho, S. H., & Lee, J. (2020). Institutionalization of competition-based funding under neoliberalism in East Asia, *Studies in Higher Education*, DOI: 10.1080/03075079.2020.1823641

Sims, M. (2019). Neoliberalism and new public management in an Australian University. *Australian Universities' Review*, *61*(1), 22-30.

Stack, M. (2020). Academic stars and university rankings in higher education: Impacts on policy and practice. *Policy Reviews in Higher Education*, *4*(1), 4-24.

Stensaker, B., Lee, J. J., Rhoades, G., Ghosh, S., Castiello-Gutiérrez, S., Vance, H., Çalıkoğlu, A., Kramer, V., Liu, S., Marei, M. S., O'Toole, L., Pavlyutkin, I., & Peel, C. (2019). Stratified university strategies: The shaping of institutional legitimacy in a global perspective. *Journal of Higher Education*, *90*(4), 539-562. Tai, H. H. (2006). *World-class universities: Excellence and innovations.* Taipei, Taiwan: Higher Education Cultural.

Teichler, U. (2017). Academic profession, higher education. *Encyclopedia of International Higher Education Systems and Institutions*, 1-67.

Trivellas, P., & Santouridis, I. (2016). Job satisfaction as a mediator of the relationship between service quality and organizational commitment in higher education. An Empirical Study of Faculty and Administration Staff. *Total Quality Management & Business Excellence*, *27*(1-2), 169-183.

Truell, A. D., Price, W. T., & Joyner, R. L. (1998). Job satisfaction among community college occupational-technical faculty. *Community College Journal of Research and Practice*, *22*(2), 111-122.

Wadhwa, R. (2016). New phase of internationalization of higher education and institutional change. *Higher Education for the Future*, *3*(2), 227-246.

Wang, B. J., Chou, C. P., & Wang, H. H. (2018). *Evaluation of the effectiveness of rewarding university teaching excellence project* (RDEC-RES-099-023). Retrieved from https://ws.ndc.gov.tw/Download.ashx?u=LzAwMS9hZG1pbmlzdHJhdG9yLzEwL3JlbGZpbGUvNTY0NC8zMjM4LzAwNTg5MjBfMS5wZGY%3D&n=MjAxMTA4MzAxNTQwNTY0MDcxNDgwLnBkZg%3D%3D&icon=.pdf

Wang, S. P. (2013). Policy analysis of establishing the world-class university in Taiwan from international perspectives. *Educational Resources and Research, 112*, 151-175.

Weert, E. de. (2015). Teaching and Research in Binary Systems of Higher Education: Convergent or Distinctive Profiles? In Cummings, W. K., & Teichler, U. (Eds.), *The relevance of academic work in comparative perspective* (pp.75-90). Dordrecht: Springer.

Yonezawa, A., & Shimmi, Y. (2015). Transformation of university governance through internationalization: Challenges for top universities and government policies in Japan. *Higher Education: The International Journal of Higher Education Research, 70*(2), 173-186.

Young, I. M. (2002). *Inclusion and Democracy*. USA: Oxford University Press.

Zgaga, P., Teichler, U., Schuetze, H. G., & Wolter, A. (2019). *Higher education reform: Looking back -- Looking forward, second revised edition. Higher education research and policy.* Peter Lang Publishing Group.

DATA MINING THE CATEGORIES OF TEACHERS AND OFFERING PROMOTION STRATEGIES FOR THE MAINSTREAM - CASE OF A TECHNOLOGY UNIVERSITY IN TAIWAN

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ABSTRACT

Teachers constitute a vital part of an educational institution. A typical university world over consists of teachers mainly engaged in activities of teaching, research, and administration (service). However, not all teachers are efficient enough to perform all three activities in equal measures. It creates an imbalance and leads to differences in their performances and, in turn, affects their promotion. In the last decade, teachers in the case university, who outperformed in research got priority in promotion compared to others. It created disparities in promotion avenues among the teachers. Therefore, the question before the Management was how to overcome this imbalance and develop measures appropriate for all teachers. The present study attempts to diagnose the categories/clusters of teachers in a case university and devise suitable evaluation measures for their promotion. We linked data on teachers' evaluation of activities related to teaching, research, and administration. Records of 343 teachers were analyzed. Basic statistical analysis, ANOVA, correlation, and C5 decision tree were carried out. Teachers' teaching evaluation scores varied significantly by gender and had a positive relationship with research, service, and students' performance. Concerning the professional title, 70% of teachers (lecturers, assistants, or associate professors) belonged to the teaching group, and merely 3% of faculties in this group got promotions in the last eight years. Thus, the case university needed to devise appropriate measures to improve the odds of promotion of teachers in this group. The present study dwells on these aspects and discusses certain measures for adoption.

Keywords: Job resources; Teacher expertise; Teaching practice research program; Teacher evaluation; Teacher promotion

Introduction

Teachers constitute a vital part of an educational institution. In a typical university world over, teachers are mainly engaged in activities of teaching, research, and administration (service). In the higher education setting, like in universities, teachers not only have to teach courses but also carry out research, publish papers, tutor, and perform certain administrative duties. Moreover, teachers in doctoral universities, besides teaching courses, are required to submit research proposals to attract funding, carry out research, supervise students for research, and perform certain administrative duties. The quality and performance of teachers not only affect the university but also has a bearing on their career development, including promotion.

Though research output is a crucial component of teachers' performance appraisal, not all teachers can do well in this respect. In two separate previous studies, it was reported that 43% of faculty members did not report any publication two years before the survey date (Finkelstein 1984), while 41% of faculty members had never published anything (Boyer 1990). It creates disparities in promotion avenues among the teachers and poses a question before the Management that how to overcome this imbalance and develop measures appropriate for all teachers. Boyer (1990) conceptualized faculty work in four different kinds of 'scholarship' in which university teachers are generally engaged. (1) The scholarship of discovery (traditional research and creative activity), (2) the scholarship of integration (synthesis of theoretical or empirical material within or across disciplines), (3) the scholarship of application (use of ideas from one's occupation for solving problems), and (4) the scholarship of teaching (now generally referred to as the scholarship of teaching and learning). Boyer (1990) encourages faculty belonged to the category of teaching scholarship to go beyond the content of their specific disciplines, to research and apply pedagogical methods, and to share their findings with their colleagues. Thus, faculty members who cannot contribute to research output can develop unique expertise according to their characteristics and still make a unique contribution.

In addition, Blair (2018) proposed a similar idea of stating that academic roles could be separated into a lecture (teaching), conference (research), and lecturer (scholarship) to reduce the educational load. However, on the other hand, some researchers recommended the collaboration of the three duties (Galal et al., 2014; Kandiah and Saiki, 2012; Walsh and Wright, 2016). Whitfield and Hickerson (2013) designed a checklist for teachers to assess their preparedness for teaching, service, and research. It was found that most had participated in teaching preparation activities (Whitfield and Hickerson, 2013). In a research-oriented university, however, the strategy of encouraging teaching lecturers to develop service and research and then get promotion becomes a vital challenge.

Therefore, Ho (2015) described that if the system of teachers' promotion can be combined with the orientation of the school, distinguishing feature development, incentives, and the expertise of teachers, then the motivation and willingness of teachers to cooperate with institutional promotion, teaching and research tasks, and industry-university cooperation will be relatively

improved. In 2015, the Ministry of Education (MOE) in Taiwan assigned three universities to demonstrate three different promotion pathways for teachers. It was concluded that besides research incentives, teaching practice and industry-university cooperation are the other two areas worth considering. Subsequently, the MOE in 2018 advocated the program of teaching practice and research to implement teaching innovation and strengthen the task of cultivating talents in universities.

The teacher evaluation consists of a combination of teaching, services, and research. Several studies have identified the factors influencing teachers' evaluation, including background variables such as field, gender, and professional title, etc. (Drake et al., 2019; Hameed et al., 2015; Li et al., 2016; Wang et al., 2017), students' grade point average (Akram and Zepeda, 2013; Sayavedra, 2014), tutor and student relationship (Agrawal et al., 2019; Horneffer et al., 2016), administrative position (Argyriou et al., 2014; Williams and Crates, 2015) and research performance (Cai, 2015; Wang et al., 2016). In the present research, these factors were considered to detect their influences on teaching, service, and research performance.

The research structure is shown in **Figure 1**. The study aims (1) to explore the factors influencing teachers' evaluation/promotion considering activities of teaching, research, and administration (service), (2) to examine the correlation among scores of teaching evaluation, tutor-student relationship, administrative duties, and research output. (3) to clarify the category of most teachers in the case university and offer helpful suggestions for decision-makers. The C5 data mining in the study was carried out to diagnose teachers' cluster types based on their expertise in the case university. The study's outcome may be useful to improve the odds of promotion of faculties belonging to the teaching cluster and help the Management of other universities tackle similar situations in their institutions.

Figure1: Research structure

LITERATURE REVIEW

TEACHING QUALITY ASSESSMENT

There are several research reports available on teaching evaluation to assure teaching quality. According to Marsh and Roche (1997), a valid teaching evaluation offers: (1) useful feedback for diagnosing strengths and weaknesses in teaching effectiveness, (2) provides the suggestions for professional development aimed at improving teaching, and (3) creates a tangible incentive in working towards improving teaching. Cohen (1980) described that student-rating feedback had made a modest but significant contribution to the teaching improvement. Bianchini, Lissoni, and Pezzoni (2013) analyzed the determinants of teaching quality and proposed a new statistical methodology to measure instructors' characteristics. Bianchini (2014) listed several items related to teaching dimensions, such as punctuality, willingness to clarify, ability to raise interest, clarity in exposition, and quality of educational material. Ho (2015) described that teaching quality assessment could roughly include teachers' teaching ability, curriculum organization, teacher-student interaction, course difficulty, course burden, lecture assignments, assessment methods, teaching enthusiasm, and student learning effectiveness/value. These contents not only remind teachers of the importance of teaching behavior but also reflect students' need for their teaching.

C5 data mining

Data mining is the computational procedure of discovering patterns in big data sets, which include the methods at the intersection of statistics, decision trees, artificial intelligence, machine learning, and database systems (Michael and Gordon, 1997; Zare et al., 2019). Take the decision tree for an example; the goal of classification is to predict the value of a user-specified goal attribute based on the values of other attributes, known as the predicting attributes. C5 is an algorithm used to generate a decision tree developed by Ross Quinlan (2017). C5 can create classifiers demonstrated either as decision trees or as rule sets. It handles missing data, can deal with a large number of input variables, and builds models efficiently. The decision tree is built in a top-down graph. The first attribute is at the top of the tree, and the next branch leads to either a new attribute or output. C5 decision trees are created from several features, and then the tree is classified by using a subsequent set to build the model. Besides, the algorithm of C5 can extract valuable patterns and create improved features (Khanbabaei et al., 2019; Khraisat et al., 2020; Pandya and Pandya, 2015; Razi and Shahabi, 2016). In the present study, the C5 decision tree was applied to explore the types of scholarships among the teachers in the case university.

TEACHER PROMOTION

The teachers' promotion is related to the outcome of activities in their respective professional fields. According to the MOE (2016), Taiwan, there are guidelines for different categories of teachers' field of activities for promotion purposes:

(1) Academic research: Teachers who have made specific contributions to the research results in an academic field have been able to submit outstanding works for review.

(2) Industry-university cooperation: Teachers in applied science and technology, who have innovated, improved, or extended the specific research and development results of the specific technology or practice can submit the technical report for review.
(3) Teaching practice: Teachers' role in the development of curriculum, teaching materials, teaching methods, teaching aids, the use of scientific and technological media, assessment tools, innovative, improvised, or extended application of specific research and development results, and who can effectively improve students' learning outcome or promote significant contributions within and outside the school. Teachers can submit all these contributions in the form of a technical report for review.
(4) Art or sport: In the academic field, art teachers have unique and specific contributions. They can submit their creation or performance reports for review. The sports teachers themselves or student-athletes under their guidance can participate in significant domestic and international sports competitions to win ranking, and teachers can obtain a certificate of achievement and submit it for review.

TEACHING PRACTICE RESEARCH PROGRAM

Taiwan's MOE (2018) defined the program on teacher's efforts to improve the quality of teaching, promote the learning outcomes of university students; raise questions through educational materials or literature, through curriculum design, teaching materials; or by the introduction of teaching aids and the use of technology media. The teachers who received the subsidy from the MOE are required to share and present their research outcomes to the public. The integrated teacher assessment system will be a diversified approach providing teachers with the ability to grow and develop innovative pedagogies, and create an institutional research database for students' learning improvement. In the case of universities, the number of teachers who pass the teaching practice research program increased (MOE, 2018). Therefore, more teaching resources could be the new driving force for the teacher's promotion.

JOB RESOURCES

Job resources are physical, psychological, social, or institutional aspects of the job that may reduce job demands and the associated inner and outer costs. Xanthopoulou et al. (2007) stated that job resources are related to personal characteristics such as employees' self-esteem, self-efficacy, and optimism and influence their work environment. A lack of job resources leads to teachers' stress and diminishing job satisfaction (Demerouti et al., 2001). Chism (2006) and Song et al. (2013) mentioned that institutions should have a system to acknowledge and recognize the excellence in teachers who could inspire other faculty members to achieve higher levels of performance in teaching. Through career promotion, a teacher can have more job resources like a higher salary, a fewer curriculum, more assistants, and a higher reputation. Also, these measures will lead to enhanced chances of their retention in the university

METHODS

SAMPLES AND PROCEDURE

In the present study, we linked data of teaching evaluation scores, tutor-student relationship scores, projects, and publication statistics (Scopus indexed journals only), and the administrative duties in the case university. The secondary data was collected from the offices of academic affairs, students' affairs, research and development, and human resources. All the data had identification numbers, hence no ethical issues. A total of 343 valid teaching evaluation records of teachers in the case university in the academic year 2017-18 were analyzed. To understand the composition structure of teachers in the case university, first, the basic statistics were carried out. Secondly, through ANOVA, the significant factors which influenced the teachers' evaluation were detected. Thirdly, the correlation coefficient of teaching, research, and service were analyzed. Finally, according to C5 cluster rules, three categories of teachers were explored.

MEASURES AND VARIABLES

The main variables related to a teacher are professional field, gender, professional title, administrative position, evaluation performance, projects, publication output, and students' grade point average (GPA) in curriculums taught by the teacher.

To explore the correlation among teaching, service, and research, we linked the secondary data from different offices. Using a questionnaire, the office of academic affairs collected the data on teacher evaluation scores to diagnose the teaching performance. The questions included were:

(1) The content of the teacher's lecture is roughly consistent with the syllabus.
(2) The teacher's attitude is conscientious and well prepared.
(3) The teacher will assign assignments or arrange exams to assess student learning outcomes.
(4) The teacher will attend classes on time and will not be absent for no reason except for special purposes.
(5) The teacher will encourage the students to ask questions and be happy to answer questions for the students.
(6) I am satisfied with the teacher's overall teaching.

The Office of Students' Affairs collected the tutor's scores. The "Class Tutor and Student Relationship Questionnaire" contained the following eight items:

(1) I think the tutor cares about me.
(2) I think the tutor is willing to help students in solving problems.
(3) I think the tutor will take the initiative to understand my situation.
(4) I think the tutor has a good communication channel with students.
(5) When I need it, I know how to contact the instructor.
(6) When I have difficulty, I am willing to discuss with the tutor or request assistance.

Students answered using a five-point scale; the options were "strongly agree," "agree," "neutral," "disagree," and "strongly disagree." The scoring order was 5,4,3,2 and 1 point, respectively. The higher the score, the more satisfied the student was with the tutor.

To predict the teachers' expertise, we applied C5 data mining in the study. It includes six fields (General Education Center:1, Management:2, Science and Engineering:3, Design:4, Humanities, and Social Sciences:5, Informatics:6). Gender was coded as male: 1 and female: 0. The professional titles were coded as a distinguished professor:5, professor:4, associate professor:3, assistant professor:2, and lecturer:1. Tutors were coded as Yes:1 and No:0. Administrative duties were coded as Yes:1 and No:0. Research output was coded as Yes:1 and No:0. Moreover, the dependent variable is the scholarship type (Teaching, research, service).

Also, following the regulations for the promotion of university teachers in Taiwan, we collected promotion data of eight years (August 2010 to July 2018) in the case university to carry out a basic statistical analysis. Thus, from the results, we could check the allocation of the resources concerning teaching, research, and service and could see the weight of factors.

Results

BASIC STATISTICS

Table 1: Frequency counts of all teachers

Item		Count
Field	Management	106
	Science & Engineering	55
	Design	48
	Humanities & Social Sciences	54
	Informatics	52
	General Education	28
Gender	Male	230
	Female	113
Professional title	Lecturer	27
	Assistant professor	125
	Associate professor	140
	Professor	47
	Distinguished Professor	4
Tutor	No	161
	Yes	182
Administration	No	296
	Yes	47
Research	No	268
	Yes	75

The frequency statistics of 343 teachers are shown in Table 1. The number of teachers in the field of Management was higher compared to other areas. Overall, the number of male teachers was higher than females. Associate and assistant professors outnumbered other professional titles. Data showed that over half the number of teachers took up tutoring. Only 47 (14%) of all faculties had additional administrative duties, while 75 (22% of the total number) had research output in the form of publications.

EVALUATION OF TEACHING

TABLE 2: ANOVA

		SS	df	MS	F	Sig
Gender * Teaching	Between	0.241	1	0.241	5.572	0.019
	Within	14.748	341	0.043		
	Total	14.989	342			
Field*Research	Between	11.303	5	2.261	16.106	0.000
	Within	47.298	337	0.140		
	Total	58.601	342			
Professional Title*Research	Between	8.596	4	2.149	14.527	0.000
	Within	50.004	338	0.148		
	Total	58.601	342			
Field*Tutor	Between	102.010	5	20.402	4.538	0.001
	Within	1514.950	337	4.495		
	Total	1616.960	342			
Gender*Tutor	Between	18.743	1	18.743	3.999	0.046
	Within	1598.217	341	4.687		
	Total	1616.960	342			
Field*Administration*Research	Between	2.811	4	0.703	4.477	0.004
	Within	6.593	42	0.157		
	Total	9.404	46			
Professional Title*Administration *Research	Between	1.404	2	0.702	3.862	0.028
	Within	8.000	44	0.182		
	Total	9.404	46			

The teaching evaluation scores varied significantly by gender, and ANOVA (Table 2) showed that female teachers had higher teaching evaluation scores than males (p-value=.019). Besides, we collected the data and linked 343 teachers' teaching evaluation scores and their different curriculum grade point average (GPA) in the report of the database. Correlation analysis results showed that the higher the rating of the teaching evaluation scores, the better was the GPA of students in the curriculum. It was positively significant. Teaching evaluation scores of a teacher declined if the number of failed students was higher.

EVALUATION OF RESEARCH

The Chi-square test showed that the factors of the professional title and field had a significant difference (p-value=.000) in research output (Table 3). Distinguished professors and professors had significantly higher research output than others. It was found that the higher the professional title higher was the research output. Teachers in the field of Informatics and Science and Engineering had more projects and a higher number of publications compared to teachers in other areas. Art teachers, though produced creations but had less research output. Sports teachers contributed differently to specialized events and trained students to participate in various sports competitions hence had no research output. Teachers in the field of Humanities and Social Sciences and General Education had a higher focus on the teaching practice; therefore, it had less research output as well.

Table 3: Crosstable

			Research		Total
			No	Yes	
Professional title	Lecturer	Count	27	0	27
		%Within Professional title	100.00%	0.00%	100.00%
	Assistant professor	Count	108	17	125
		%Within Professional title	86.40%	13.60%	100.00%
	Associate professor	Count	110	30	140
		%Within Professional title	78.60%	21.40%	100.00%
	Professor	Count	23	24	47
		%Within Professional title	48.90%	51.10%	100.00%
	Distinguished professor	Count	0	4	4
		%Within Professional title	0.00%	100.00%	100.00%
Total		Count	268	75	343
		%Within Professional title	78.10%	21.90%	100.00%
Field	General Education	Count	28	0	28
		%Within Field	100.00%	0.00%	100.00%
	Management	Count	88	18	106
		%Within Field	83.00%	17.00%	100.00%
	Science& Engineering	Count	33	22	55
		%Within Field	60.00%	**40.00%**	100.00%
	Design	Count	42	6	48
		%Within Field	87.50%	12.50%	100.00%
	Humanities & Social Sciences	Count	53	1	54
		%Within Field	98.10%	1.90%	100.00%
	Informatics	Count	24	28	52
		%Within Field	46.20%	**53.80%**	100.00%
Total		Count	268	75	343
		%Within Field	78.10%	21.90%	100.00%

Evaluation of Service

Administrative duties

Totally 47 teachers had administrative duties. The statistical analysis shows that the research performance of teachers with administrative responsibilities had a significant difference by the variables of fields and professional titles (Table 2).

Tutor-student relationship

By ANOVA (Table 2), the scores of the tutor-student relationship were significantly different from professional fields, and gender (the p-value was significantly smaller than 0.05). The rating of the tutor-student relationship was higher in the field of Informatics but was lower in the area of Arts. Regarding gender, female tutors (Average=4.43) had higher popularity than male teachers (Average=4.26) shown in Table 4.

Table 4: Basic statistics of tutor and student relationship scores

Item		Count	Mean	SD
Field**(.000)	general knowledge	28	**4.40**	0.29
	management	106	4.35	0.30
	science	55	4.37	0.33
	design	48	4.16	0.51
	humans	54	4.25	0.28
	information	52	**4.40**	0.32
Gender** (.002)	male	230	4.26	0.38
	female	113	**4.43**	0.27

***Note**: ** p-value is significantly smaller than 0.01*

Odds of Teachers' Promotion

To know the promotion numbers in the case university, the original professor and distinguished professor were deleted in the participants; therefore, the samples were 322 to be analyzed. The odds rate of promotion in the case university for 8 years was only .35 (115/322) of total samples in the case university. The distribution was .27 in academic research (87), .05 in skill (17), and .03 in teaching practice (11).

Correlation

We tried to explore the correlation between the teaching, research output (projects and publications), service (administration and tutoring) (Table 5). The findings were as follows: (1) The teaching evaluation scores were positively related to research, administration, and tutor-student relationship scores. (2) The variable of service (administration and tutoring) was negatively related to research output. (3). The publications were significantly positive to projects (the p-value was significantly smaller than 0.05).

Table 5: Pearson Correlations of Work Types

Work types	1	2	3	4	5
1. Teaching	1				
2. Projects	.04	1			
3. Publications	.01	.45**	1		
4. Administration	.09	.08	-.01	1	
5. Tutoring	.05	-.06	-.09	-.24**	1

***Note**: ** p-value is significantly smaller than 0.01*

TEACHERS CLUSTERS

Following the concept of 'Scholarship' by Boyer (1990), the C5 decision tree was applied to explore the type of scholarships among the teachers and to predict important factors, and create classified models. The independent variables were field, gender, and professional title. The dependent variable was the 'scholarship type,' e.g., teaching, research, and service (tutor and administration). The precision rate was .72. The models were as follows (Figure 2):

(1) For professional titles "Associate professor," "Assistant professor," or "Lecturer," the scholarship type was teaching.
(2) For the professional title "Professor," and the field of "Humanities and Social Sciences," the scholarship type was service.
(3) For the professional title "Professor," and the field of "Science & Engineering" or "Informatics," the scholarship type was research.
(4) For the professional title "Professor" and the field of "Management," "Design," or "General Education," the scholarship type was teaching.
(5) For the professional title "Distinguished Professor," the scholarship type was research.

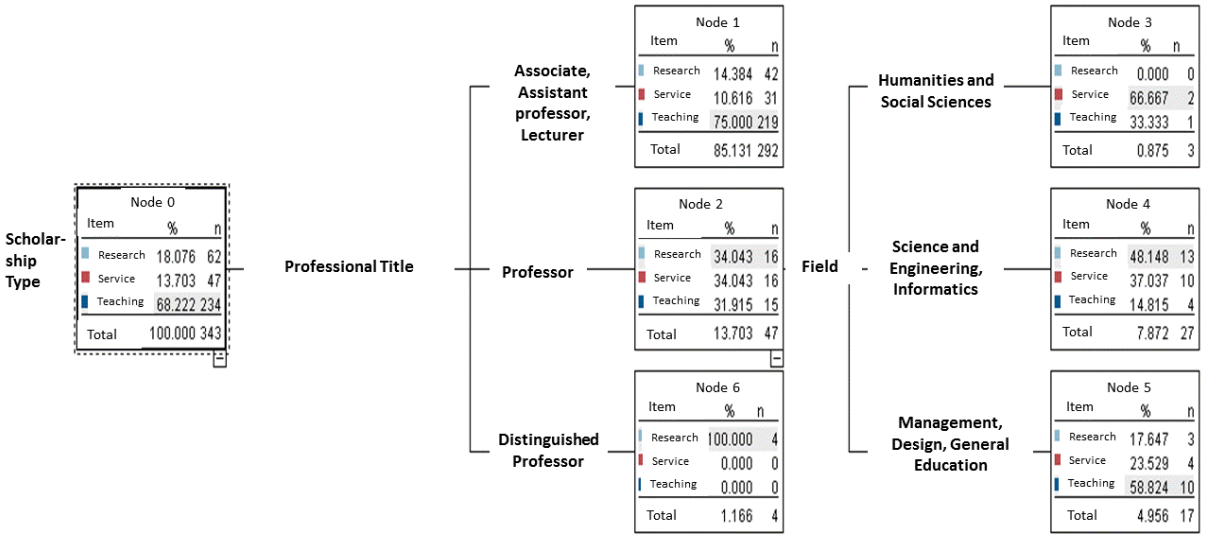

Figure 2: C5 decision tree

From the composition structure, teaching was the main activity of the majority of faculties in the case of university (69%). Also, concerning the professional title as a variable (lecture, assistant professor, and associate professor), 75% belonged to the teaching cluster.

DISCUSSION

Basic Statistics Analysis

In basic statistics, the odds rate of promotion in the case university was .27 in academic research, .05 in skill, and .03 in teaching practice. Research output has a significant weight in the ranking of universities. Therefore, in recent years, higher attention is being paid to the research performance of teachers. As observed in the present study, several factors affected teachers' research output, e.g., workload (number of courses and administrative duties), their field of expertise, lack of research funding (especially in the case of lecturers and assistant professors). Several other reports have indicated that teacher's length of the probationary period, job tenure, teaching load, administrative duties, academic rank, and financial research support has a significant influence on research output (Buchheit et al., 2001; Cargile and Bublitz, 1986; Chen and Zhao, 2013; Chow and Harrison, 1998). Kim (2018) examined teachers' collaborative inquiry (knowledge, practice, communities, and purpose) as a professional development intervention to develop and implement a multicultural education program. The participants shared their experiences, discussed issues, and explored effective ways to achieve their goals based on formal or informal connections. Therefore, team cooperation among the local

institutions or international collaborations is the new trend for enhanced publication output.

Correlation Analysis

In the analysis of correlation, teaching was positive to research, service, and student performance. Therefore, the discussion on teaching strategy was necessary. In this study, it was found that teachers' gender influenced their teaching and tutor-student relationship scores. These results confirm the findings of previous researchers' (Agrawal et al., 2019; Lam et al., 2010; Van Houtte, 2007). Similarly, many researchers have stated that teachers' teaching performance has a significant positive impact on teacher-student interaction (Chen et al., 2006; Emmer et al., 1980), and teachers' professional identity influences their teaching strategies with different pedagogical beliefs (Berger and Van, 2019). Teacher's teaching evaluation scores declined if a higher number of students failed in that course. Previous studies have demonstrated that instructors with a higher degree of tolerance were more popular with students (Cheng et al., 2018; Kirk, 2017). Therefore, faculties in the teaching cluster, must mend their pedagogy and develop a helping attitude towards students to improve their performance/evaluation points.

Besides, it showed a negative relationship between tutorship and administrative duty in correlation analysis. While tutoring involves interactions with students, the administrative function is related to other affairs in the university. According to job resources theory, optimism depends on different characteristics among the teachers. Grayson and Alvarez (2008) reported that teachers who maintained a positive relationship with their students are more likely to stay motivated and enthusiastic and enjoy their work. Veldman et al., (2016) described that low teacher-student relationships showed relatively lower job satisfaction. Besides, some teachers get stressed by higher workload, interactions with colleagues, students, or parents (Greenglass and Burke, 2003). According to the theory of vocational personalities (Holland, 1997), teachers belonging to lower teaching and teacher-student relationship scores may be given a lower workload of social interactions.

Also, regarding job resources, some researchers had discussed the benefits of appointing teaching assistants (TA) as academic support for teachers (Cupido and Norodien-Fataar, 2018; D'Andrea and Gosling, 2005; Duthie and Freeman, 2016). The support of a sufficient budget and TA would be of great help in improving the learning process of students. Also, with the preparation of teaching materials, edit of e-learning videos, assistance in classrooms, a record of student's assignments, and the counseling of students for remedial education, the TA can decrease the workload of teaching faculties so that they can devote more time to innovate pedagogy, improve learners' performance, solve practical problems in the teaching area, etc. This way, the opportunities for promotion to faculties in the teaching cluster can be enhanced.

Data mining

From the composition structure and C5 teachers' clusters, it is clear that the mainstream teachers belonged to the teaching cluster in the case university. A load of teaching, research, and service can be assigned based on each teacher's cluster. For example, faculties who are efficient in

teaching can devote more time to designing new teaching methods and share them with their colleagues and other teaching community. Also, teachers should be encouraged to join the teaching practice research program run by the MOE to publish innovative topics in teaching (Huang, 2020; Lu, 2020). In the last ten years, only Taiwan's Ministry of Science and Technology (MOST), supported the budget for programs for the teachers in universities in Taiwan. However, in the recent five years, the MOE, Taiwan, also allocates a budget for teaching improvement, solving teaching problems, and encourages multiple approaches for teachers' promotion.

IMPLICATIONS AND RECOMMENDATIONS

The study presents the cluster model of teachers in a case technology university in Taiwan. Also, it points out ways for promotion and career development of university teachers based on their clusters. The faculties in the teaching cluster can apply for financial support from the government to research in their respective fields in addition to their teaching activities. Taiwan's MOST also supports the budget for skilled teachers to collaborate with industries to develop joint projects so that the research outcome has direct application to societal needs.

In addition to teaching strategies, teachers falling in the cluster of service could join the research cluster by presenting the paper or submission of projects in their disciplines. While those who belonged to the research cluster can carry out experiments, supervise students, publish their work, and write or edit technical books.

Teachers in the service cluster, who are efficient in the administration can devote more time to the framing of rules and regulations in the university, and in taking timely administrative decisions. These measures will lead to a higher satisfaction level among the different clusters of teachers, and their performance can be evaluated based on the flexible assessment system. Also, the university can judicially allocate resources based on the teacher's cluster and thus can significantly save on wasteful allocations. In this study, data related to only three clusters (teaching, research, and service) in the university were analyzed. Further study on industry-university cooperation and specialized disciplines like art and sports for promotions could be a subject of future research.

Conclusions

To strengthen its teacher development system, the Taiwan government has put in place a range of reforms over the last few years. Universities in Taiwan are required to have an evaluation system based on teachers' field of expertise, strength in deliverables so that appropriate career development and avenues of their promotion can be conceived. In this study, we analyzed the case of a Technology University in Taiwan. The results showed that the majority of the teachers in the university belonged to the teaching cluster. The study discussed measures and allocation of resources based on teachers' characteristics to improve the odds of promotion for the faculties belonging to the teaching cluster. Teachers with leadership potential can be encouraged to take up administrative roles within the university. At the same time, teachers with research aptitude and inventive minds who performed well in research output should be given resources to carry out advanced research and encouraged to apply for research funding from government agencies and private industries. Teachers with excellence in teaching and belonging to the teaching cluster should be encouraged to engage in improvisation of curriculum, teaching materials, innovative pedagogies, teaching methods, better teacher-student relationships, and enhancement in students' learning outcomes. Also, teachers in this cluster should be encouraged to apply for government funding for teaching-related research and share their findings with the teaching community. With these measures, not only university management can achieve the maximum output among different categories of teachers, but also create an ecosystem of teachers and students with a high degree of performance and a sense of fulfillment among all the stakeholders.

References

Agrawal, D. C., Hou, H.Y., Cheng, T.M., Chen, L.S., and Hsu, S.H. (2019). Factors Affecting Student-Teacher Relationship in a Private University of Technology in Taiwan. *Journal of Institutional Research South East Asia*, 17(1), 54-76.

Akram, M., and Zepeda, S. (2013). Correlating teacher self-assessment score with student achievement in English and Mathematics. *Pakistan Journal of Education*, 30(2), 13-32.

Argyriou, A., Iordanidis, G., and Schmidt-Hertha, B. (2014). Management and Administration Issues in Greek Secondary Schools: Self-Evaluation of the Head Teacher Role. *Education Research International*, 2014, 1-11.

Berger J. L and Van K L. (2019). Teacher professional identity as multidimensional: mapping its components and examining their associations with general pedagogical beliefs. *Educational Studies*, 45(2):163-181.

Bianchini, S. (2014). Feedback effects of teaching quality assessment: Macro and micro evidence. *Assessment & Evaluation in Higher Education*, 39 (3): 1-15.

Bianchini, S., Lissoni, F., and Pezzoni., M. (2013). Instructor characteristics and students' evaluation of teaching effectiveness: Evidence from an Italian engineering school. *European Journal of Engineering Education*, 38 (1): 38-57.

Blair, E. (2018). Rebuilding higher educational research, teaching, and service. Confero, 6(1), 35-54.

Boyer, E. L. (1990). Scholarship Reconsidered: Priorities of the Professoriate, Carnegie Foundation for the Advancement of Teaching. *Carnegie Foundation for the Advancement of Teaching*. Princeton, NJ.

Buchheit, S., Collins, A. B., and Collins, D. L. (2001). Intra-institutional factors that influence accounting research productivity. *The Journal of Applied Business Research*, 17(2), 17–31.

Cai, A. L. (2015). Research on construction of teacher science & research performance evaluation system in higher vocational colleges. *Journal of Nanjing Institute of Industry Technology*, 15(03), 80-83.

Cargile, B. R., and Bublitz, B. (1986). Factors contributing to published research by accounting faculties. *The Accounting Review*, 61(1), 158–178.

Chen, M.H., Cheng, D.C., and Tien, H.H. (2006). Research on the relationship between teaching evaluation and teaching effectiveness-The case of National Defense Management College. *Journal of Chia Institute of Technology*, (34).243-265.

Chen, Y., and Zhao, Q. (2013). Gender differences in business faculty's research motivation. *Journal of Education for Business*, 88: 314–324.

Cheng, T.M., Hou, H.Y., Agrawal, D.C., and Lin, J.Y. (2018). Modeling retention in a private university of technology: Improving the odds of undergraduates. *Journal of Institutional Research South East Asia*, 16(2):107-122.

Chism, N.V.N. (2006). Teaching awards: What do they award. The Journal of Higher Education, 77(4), 589–617.

Chow, C. W., and Harrison, P. (1998). Factors contributing to success in research and publications: Insights of influential accounting authors. *Journal of Accounting Education*, 16, 463–472.

Cohen, P. A. (1980). Student ratings of instruction and student achievement: A meta-analysis of multisection validity studies. *Review of Educational Research*, 51,281–309.

Cupido, X. M. and Norodien-Fataar, N. (2018). Teaching Assistants -- A Hit or a Miss: The Development of a Teaching Assistant Programme to Support Academic Staff at a University. Perspectives in Education; Bloemfontein, 36(1), 14-29.

D'Andrea, V. & Gosling, D. 2005. Improving teaching and learning in higher education: A whole institution approach. Maidenhead: Open University Press.

Demerouti, E., Bakker, A.B., Nachreiner, F., and Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86, 499–512.

Drake, S., Auletto, Amy., and Cowen, J. M. (2019). Grading Teachers: Race and Gender Differences in Low Evaluation Ratings and Teacher Employment Outcomes. *American educational research journal*, 56(5), 1800-1833.

Duthie, S.R. & Freeman, L. 2016. From marginal to mainstream: An argument for locating education development in the academic department. South African Journal of Higher Education, 29(6), 78–92.

Emmer, E. T., Evertson, C. M., and Anderson, L. M. (1980). Effective classroom management at the beginning of the school year. *The Elementary School Journal*, 80(5), 219-231.

Finkelstein, M. J. (1984). The American academic profession: A synthesis of social scientific inquiry since World War II. *Ohio State University Press*, Columbus, OH.

Galal, S., Carr-Lopez, S., Gomez, S., Duong, V., Mizoshiri, C., Ujihara, L., Tran, T., Patel, R., and Woelfel, J. (2014). A Collaborative Approach to Combining Service, Teaching, and Research. *American Journal of Pharmaceutical Education*, 78(3), 1-7.

Grayson, J. L., & and Alvarez, H. K. (2008). School climate factors relating to teacher burnout: A mediator model. *Teaching and Teacher Education*, 24, 1349–1363.

Greenglass, E. R., and Burke, R. J. (2003). Teacher stress. In Dollard, M. F., Winefield, A. H., and WineField, H. T., (Eds.), *Occupational stress in the service professions* (pp. 213–236). New York, NY: Taylor and Francis.

Hameed, F., Ali, A., Hameed, A., Saleem, Z., and Javed, Y. (2015). Teacher evaluation: the role of gender. Quality & Quantity, 49(5), 1779-1789.

Ho, S.H. (2015). Promote university teacher evaluation and teaching evaluation thoughts and suggestions. *Evaluation Bimonthly*, 55, 9-12.

Ho, S.H. (2018). Feasibility of Taiwan's pilot division of a professional division of labor and multiple promotion systems: the enlightenment of the implementation of the Anglo-American University's executive experience to higher education policies. *Suzhou University Journal of Education Science Edition*, 4, 101-106.

Holland, J. L. (1997). Making vocational choices: A theory of vocational personalities and work environments (3rd ed.). *Psychological Assessment Resources*, Odessa.

Horneffer, A., Fassnacht, U., Oechsner, W., Huber-Lang, M., Boeckers, T.M., and Boeckers, A. (2016). Effect of didactically qualified student tutors on their tutees' academic performance and tutor evaluation in the gross anatomy course. *Annals of Anatomy*, 208, 170-178.

Huang, J.J. (2000). The teaching practice research program---Turning over a new milestone in Taiwan's higher education. *Evaluation Bimonthly*, 83, 9-12.

Kandiah, J., and Saiki, D. (2012). Collaboration: Perceptions of FCS Professionals in Teaching, Research, and Service. *Journal of Family and Consumer Sciences*, 104(4), 40-45.

Khanbabaei, Mo., Alborzi, M., Sobhani, F. M., and Radfar, R. (2019). Applying clustering and classification data mining techniques for competitive and knowledge-intensive processes improvement. *Knowledge and Process Management*, 26(2), 123-139.

Khraisat, A., Gondal, I., Vamplew, P., Kamruzzaman, J., Alazab, A. (2020). Hybrid Intrusion Detection System Based on the Stacking Ensemble of C5 Decision Tree Classifier and One-Class Support Vector Machine. *Electronics (Basel)*, 9(1), 173.

Kim, J. (2018). Exploring teacher inquiry through a teacher research community: Inquiry as stance and multicultural education as inquiry. *KEDI Journal of Educational Policy*, 15 (2), 87-104.

Kirk, G. (2017). Retention in a bachelor of education (Early childhood studies) courses: students say why they stay and others leave. *Higher Education Research & Development*, 37(4), 773-787.

Lam, Y. H., Tse, S.K., Lam, W.I., and Loh, K.Y. (2010). Does the gender of the teacher matter in the teaching of reading literacy? Teacher gender and pupil attainment in reading literacy in Hong Kong. *Teaching and Teacher Education*, 26, 754–759.

Li, W., Wang, X., and Feng, Z. Y. (2016). Role of SCI in title evaluation of teachers in medical and pharmaceutical college. Journal of the Fourth Military Medical University, 37(5), 52-55.

Lu, H.Y. (2000). Facing the teaching scene in higher education through the teaching practice research program. *Evaluation Bimonthly*, 83, 23-25.
Marsh, H. W., and Roche, L. A. (1997). Making students' evaluations of teaching effectiveness effective. *American Psychologist*, 52, 1187-1197.

Michael J.A. and Gordon S. L. (1997). Data mining techniques: for marketing, sales, and customer support. New York: John Wiley and Sons.

MOE. (2016). Teacher promotion report. Retrieved from https://depart.moe.edu.tw/ED2200/NewsContent.aspx?n=5E9ABCBC24AC1122&sms=C227CFDC4553F3D5&s=699AC8C8EDD8D263

MOE. (2018). Teaching practice research program. Retrieved from https://tpr.moe.edu.tw/subsidy

Pandya, R. and Pandya, J. (2015). C5. 0 Algorithm to improved decision tree with feature selection and reduced error pruning. *International Journal of Computer Applications*, 117(16),18-21.

Quinlan, R. (2017). Is See5/C5.0 Better Than C4.5? Retrieved from https://www.rulequest.com/see5-comparison.html

Razi, F. F., and Shahabi, V. (2016). Forming the stock optimized portfolio using model Grey based on C5 and the Shuffled frog leap algorithm. *Journal of Statistics and Management Systems*, 19(3), 397-421.

Sayavedra, M. (2014). Teacher Evaluation. *The ORTESOL journal*, 31, 1-9.

Song, H., Zhu, X., and Liu, L. B. (2013). The honorable road and its impact on teacher practice: an analysis of China's national honor system in cultivating professional development. *Asia-Pacific Journal of Teacher Education*, 41(3), 253-270.

Van Houtte, M. (2007). Exploring teacher trust in technical/vocational secondary schools: male teachers' preference for girls. *Teaching and Teacher Education*, 23(6), 826–839.

Veldman, I., Admiraal, W., Tartwijk, J., Mainhard, T., and Wubbels, T. (2016). Veteran teachers' job satisfaction as a function of personal demands and resources in the relationships with their students. *Teachers and Teaching: theory and practice*, 22(8), 913–926.

Walsh, D., and Wright, P. (2016). The TPSR Alliance: Community of Practice for Teaching, Research, and Service. *Journal of Physical Education, Recreation & Dance*, 87(5), 35-38.

Wang, L., Wen, H., and Liu, Y. (2016). AHP Based Quantitative Evaluation Index System of Teacher's Research Performance in the University. *International Journal of Multimedia and Ubiquitous Engineering*, 11(7), 391-402.

Wang, P., Zhou, X., Zhang, L., Cui, C., and Chu, P. (2017). Analysis of job burnout of University teachers based on latent class cluster model. *Journal of Shandong Normal University（Natural Science）*, 32(2), 125-130.

Whitfield, T.S., and Hickerson, C. (2013). The Difficult Transition? Teaching, Research, Service: Examining the Preparedness of Communication Faculty Entering the Academe. *The Journal of Scholarship of Teaching and Learning*, 13(1), 1-23.

Williams, N. V., and Crates, K. (2015). Administrator perspectives of Ohio's teacher evaluation system: Implications for educational administration programs in higher education. *Leadership and Research in Education*, 2(1), 25-38.

Xanthopoulou, D., Bakker, A. B., and Schaufeli, W. B. (2007). The role of personal resources in the Job Demands-Resources model. *International Journal of Stress Management*, 14, 121–141.

Zare, S., Ghotbi-Ravandi, M.R., Elahishirvan, H., Ahsaee, M. G., and Rostami, M. (2019). Predicting and Weighting the Factors Affecting Workers' Hearing Loss Based on Audiometric Data Using C5 Algorithm. *Annals of global health*, 85(1), 1-10.

THE ROLE OF EXTRACURRICULAR ACTIVITIES AMONG MEDICAL UNDERGRADUATES: INTERPERSONAL SKILLS AND ACADEMIC ACHIEVEMENT

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ABSTRACT

This study adopted a sequential approach which includes 200 respondents chosen via systematic random sampling method from the Management and Science University. This study aims to investigate the impact of extracurricular activities (ECA) on undergraduates' academic performance as well as the enhancement of their interpersonal skills. The study used frequency tests, descriptive statistics, and linear regression as well as semi-structured interviews to analyze data. On the whole, the results showed that though students perceived participation in extracurricular activities enhance their academic performance, a non-significant regression equation was found in the analysis ($F(1, 198)=0.70$, $p>.0.5$ with $R=.019$ and an R-Squared (R^2) of .000, indicating that there is no significant relationship between extracurricular activities and academic performance. However, for enhancement of interpersonal skills through extracurricular activities, a substantial regression equation was found ($F(1, 198)=116.5$, $p<.01$, with $R=.610$ and an R-Squared of .375. The study ends with recommendations for future research to heighten the positive impact of ECA.

Keywords – extracurricular activities, academic performance, interpersonal skills, enhancement, positive

INTRODUCTION

Extracurricular activities (ECA) aim to enhance the student learning experience and provide opportunities for students to develop their critical knowledge, competencies, values, and soft skills needed to succeed in today's global workplace besides providing them life experience. Hence, higher learning institutions encourage undergraduates to dedicate some of their time learning outside the classroom as well as organizing activities, in a step-by-step journey to becoming a confident and versatile individuals. Extracurricular activities are activities that enhance and enrich the regular curriculum in the course of learning in a higher learning institution (Billingsley & Hurd, 2019; Buckley & Lee, 2018). Such activities are vital in that they demonstrate that the participant develops into a well-rounded individual. Beyond its physical and health dimensions, ECA contributes to the comprehensive and harmonious development and fulfillment of the human being (Darling, Caldwell, & Smith, 2017). Most higher learning institutions allow a free choice for students' involvement in such activities (Kaur & Singh, 2018) but many private higher learning institutions make involvement in one or more extracurricular activities a mandatory requirement for their undergraduates; believing that the activities will help to create a more 'well-rounded' student. It is the fundamental objective of the education system to nurture an inquiring mind in a fit body and the future emergence of sports will depend on the development of a structured approach to sports in a higher learning institution that involves all the stakeholders in education (Pica-Smith & Poynton, 2014).

In Malaysia, higher learning institutions offer a varied range of extracurricular activities options that appeal to all undergraduates (Singh, 2018; Sabrine, Van Willigenburg-van Dijl, & Van Houdt, 2009). Extracurricular activities enhance formalized learning when measured with defined institutional student learning outcomes (Buckley & Lee, 2018; Darling, Caldwell, & Smith, 2017). Therefore, higher learning institutions must develop a holistic curriculum that seeks to develop the mental, physical, social, and emotional abilities of students. Indeed, interacting meaningfully with peers, taking responsibility for organizational initiatives, and integrating class concepts into activities, all assist undergraduates to develop good interpersonal and leadership skills (Hsien-Hsien Lau et al., 2014; Kuh, 2006). Leadership skills obtained via ECA in a student organization has a greater effect on students' development along with cognitive and moral elements when compared against simple membership (Singh, 2018). Studies like this are few in comparison to those examining extracurricular involvement as a simple binary concept.

Buckley and Lee (2018) stated that participating in extracurricular activities can provide a lot of benefits which include obtaining better grades, increased standardized test scores and higher educational attainment, regular attendance to classes, and possessing greater self-esteem. Besides, those who participate in out-of-university activities often have higher grade point averages, decreased absenteeism to classes, and increased connectedness to the university

(Wilson, 2009). Participants in out-of-university activities often learn skills such as teamwork and leadership while decreasing the likelihood of alcohol usage, illicit drug abuse, and related problem behaviors. Wilson (2009, p.27) added that "participants in out-of-school activities can decrease the likelihood of being involved with problem behaviors".

Besides, extracurricular involvement offers positive benefits to the undergraduates' experience and is considered a part of the total social experience in their life (Behtoui, 2019; Myung, Hughes & Cao, 2016; Tchibozo, 2007). Extracurricular activities can support classroom-based learning apart from providing students an opportunity for campus involvement and personal development outside of the classroom (Saqib, Musab, Abdul Raheem, Iqbal, Salman, and Shahzad, 2018; Seow & Pan, 2014). The researchers also added that social experiences acquired via engagement in extracurricular activities can increase the students' interaction with their peers from varied backgrounds. In addition, sports-based extracurricular activities promote an active lifestyle for undergraduates, social inclusiveness, employment opportunities, peace and development, and above all a sense of belonging and national pride (Roulin & Bangerter, 2013; Thompson, Clark & Walker, 2013). According to Behtoui (2019) and Olson (2008), involvement in ECA is consistently and positively correlated with good institution attendance, and this in turn is often correlated with a higher grade point average. Olson revealed that students who enrolled in fine arts activities had significantly lower absentee rates than those who did not participate in such activities. Hence, Behtoui (2019) concluded that ECA participation reduced dropouts in higher learning institutions.

Statement of the Problem

Extracurricular activities in Malaysia are obligatory for students and they are given the privilege to choose the type of activities that they desire (Jamalis & Omar Fauzee, 2007). Studies conducted on the benefits of extracurricular engagement among students both internationally (Oberle, Ji, Magee, Guhn, Schonert-Reichl & Gadermann, 2019; Saqib et al, 2018; Marsh & Kleitman, 2002) and locally (Singh, 2019; Kaur & Singh, 2018; Arumugam, Krishnan, & Md Zain, 2007) have highlighted the positive effects of students engaging in extracurricular activities. These studies reinforce the virtues and significance of engaging in extracurricular activities and highlight how they are mostly confined to the secondary school setting but little is known about what happens in higher learning institutions especially in private institutions among medical students. Numerous literature has also reported that medical students from various countries experience a wide range of burnout levels when they participate in extracurricular activities. Almalki, Almojali, Alothman, Masuadi, and Alaqeel (2017) who conducted a study among the medical students at a university in Saudi Arabia exposed alarming findings which revealed a high-stress level among medical students who show involvement in extracurricular activities. In another research, Fares et al. (2015) found that the magnitude of stress and burnout among the preclinical medical students in Lebanon was relatively immense. The high level of

burnout has implications on medical students as it can negatively affect their learning process and ultimately result in the poor quality of health care services delivered to patients (Ishak, Nikravesh, Lederer, Perry, Ogunyemi, & Bernstein, 2013). Although previous studies indicate the negative impact of extracurricular activities on medical students, recent research by Shadid et al. (2020) showed otherwise. In their study involving 500 medical students in Saudi Arabia, medical students who did not involve in any extracurricular activities experienced higher burnout rates than those who did. With this contrasting result, it is imperative to research to get a better understanding of how Malaysian medical students perceive their involvement in extracurricular activities. Furthermore, there is little known about the association between burnout and extracurricular activities among medical students within the Malaysian context. This gap has led to the conclusion that there is a dire need to investigate the relationship between involvement in extracurricular activities and improving academic; involvement in extracurricular activities and improving interpersonal skills among the medical undergraduates within the Malaysian private higher education landscape. Therefore, this study attempts to fulfill this research niche by answering the research questions below:

1. Is there a significant relationship between involvement in extracurricular activity and academic performances among medical undergraduates?
2. Is there a significant relationship between involvement in extracurricular activity and interpersonal skills among medical undergraduates?

Significance of the Study

This study will benefit students, educators, and parents to encourage their students to participate in ECA organized by their higher institutions. Most students and parents opine that ECA distracts their academic performance and deviate students' focus on academic. Hence, this study enlightens them. Besides, this will also help policymakers to strengthen their ECA weightage and credit hours in the curriculum. ECA can also be useful for educators in selecting the best representatives to anchor their institutions in establishing their image.

Methodology

The study employed a mixed-method sequential explanatory design to elicit data. The researchers first collected quantitative data via Google survey and later the qualitative data were collected through a semi-structured interview by exploring participants' views in more depth to elaborate on the quantitative results obtained through the survey. The Management and Science University is an established private institution of higher learning in Malaysia. A total of 200 medical undergraduates selected through systematic random sampling participated in this study. These undergraduates must enroll in ECA as a part of their graduation requirements.

Instrument

On the whole, the questionnaire was deemed to produce information about students' perceptions in participating in ECA towards improving their academic performance and interpersonal skills. Subsequently, semi-structured interviews were undertaken to elicit qualitative data about the issues under study i.e. the effect of ECA among undergraduates. The questionnaire consists of three parts; Part A includes the demographic profile of respondents, Part B (adapted from Arumugam, Krishnan, & Masnah, 2007) comprises questions related to involvement in ECA while Part C (adapted from Knifsend & Juvonen, 2014) consists of items about interpersonal skills. As for the analysis purpose, strongly agree and agree will be combined as agree and disagree, and strongly agree will be combined as disagree. The data were analyzed using the frequency count, linear regression to obtain the relationship between ECA - Academic Performance and ECA - Interpersonal Skills using SPSS version 21.0.

Semi-structured Interview

Ten students were randomly chosen based on the voluntary basis and availability of the respondents. They were asked if participation in ECA affects their academic performance and also if it helps to improve their interpersonal skills. Their responses helped to triangulate the findings derived from the survey.

Theoretical Framework

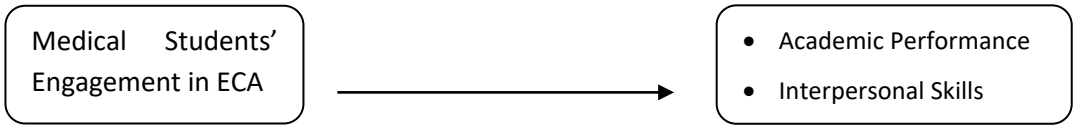

FIGURE 1. THEORETICAL FRAMEWORK OF THE STUDY

According to Buckley and Lee (2018), extracurricular activities that include clubs, fraternities and societies have been part of the fabric of higher-level institutions since their origin. A significant body of educational research has investigated the impact of these activities on academic performance and the acquisition of discipline complementary skills and competencies. In the modern context, driven by forces such as marketization, higher-level educational institutions find themselves competing to attract students based on the lived student experience by offering many types of extracurricular activities. There is a need to spread awareness of the positive outcomes of ECA engagement and how to keep a perfect balance between such activities and studies. Hence, this study focuses on the impact of ECA on Academic and

Interpersonal skills to be abreast with the government's policy IR4.0 which stresses the importance of communication and cognitive output.

Demographic Profile of Respondents

A total of 200 undergraduates of varied age groups were involved in the study. 57% of the respondents were males while 43% were females. The highest percentage of 53% was between the range of 22 and 25 years old. This is followed by 42% between 18 and 21 years and 5% between 26 and 29 years.

Results and Discussion

Research question 1

Is there a significant relationship between involvement in extracurricular activity and academic performances among medical undergraduates?

Hee, et al. (2016) and Pica-Smith and Poynton (2014) revealed that ECA contributes to undergraduates' increased academic performance. As the undergraduates in Malaysia have been involved in extracurricular activities from elementary education, they are aware of the benefits of ECA and have acknowledged that involvement in ECA has helped them to improve their academic performance. Table 1 depicts the undergraduates' perceptions about their involvement in ECA.

The responses from the respondents, strongly affirm that participation in extracurricular activities did not affect their academic performance instead helped them to persist in university and bolstered their progress towards graduation. Table 1 illustrates the undergraduates' academic performance and their involvement in ECA.

Generally, it was found that 67% of the respondents admitted that their grades improved when they participated in ECA while 19% disagreed. Meanwhile, 63% of the medical undergraduates revealed that they were able to concentrate on their studies when they participated in ECA while 25% said that they were not able to stay fully focused in their studies while being engaged in extracurricular activities. The responses also revealed that 75% of the respondents felt that ECA could help them de-stress while 17% of the respondents disagreed with this statement. When asked about their academic performance, 71% of the respondents agreed that involvement in ECA provided a platform to succeed academically through a reasonable 25% disagreed with the statement.

The results demonstrate that 65% agreed that involvement in ECA allowed them to find a balance between studies and sports activities. A total of 73% of them shared that ECA encouraged them to participate actively in academic discussions in the classroom. This is further

reinforced by 64% of the respondents indicating that ECA has made them more productive in the classroom and in completing their assignments.

Table 1: Involvement in Extracurricular Activities and Academic Performance

No	Items	Agree %	Uncertain %	Disagree %
1	My grades improve when I am involved in extracurricular activities	67	14	19
2	When I participate in extracurricular activities, I am able to concentrate on my studies	63	12	25
3	Extracurricular activities help me to de-stress	75	8	17
4	Involvement in extracurricular activities provides support to succeed academically	71	4	25
5	Extracurricular involvement helps me to seek a balance between my studies and sports activities	65	12	24
6	I can participate in academic discussions despite my ECA	73	10	17
7	I am more productive in completing my assignments after involving in ECA	64	14	22
8	Extracurricular activities do not stress me out	25	8	67
9	I have not missed assignments or turned in assignments late due to ECA	33	9	60
10	Staying back for ECA after classes do not affect my study time	28	8	64
11	I do not ignore my homework because of ECA	26	7	67
12	I did not fail a test due to involvement in extracurricular activities	22	9	69
13	I have sufficient time to do revision	66	12	22
14	I am satisfied with my cumulative grade (CGPA	69	13	18

A total of 69% of the respondents disagreed with item 12 stating that they failed a test due to their involvement in extracurricular activities though 22% said otherwise. Concerning turning in assignments on time and meeting due dates, 60% of the undergraduates indicated that involvement in ECA did not delay the completion of their assignments. Meanwhile, a total of 67% disagreed that staying back after classes for sports affected their revision time. A majority of the undergraduates (66%) agreed that they had sufficient time revising despite being actively involved in ECA while 69% admitted that they were satisfied with their Cumulative Grade Point Average (CGPA) despite being involved in extracurricular activities. In brief, students' responses are in line with Hee, et al (2016) and Pica-Smith and Poynton (2014) who corroborated that involvement in ECA helps undergraduates to perform better in their studies. To anchor this further, a linear regression was carried out to instigate the relationship between academic performance and involvement in ECA.

Table 2a: Involvement in Extracurricular Activities and Academic Performance

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.019[a]	.000	-.005	.30349
a. Predictors: (Constant), ECA				

Table 2b

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.006	1	.006	.070	.791[b]
	Residual	18.237	198	.092		
	Total	18.244	199			
a. Dependent Variable: Academic						
b. Predictors: (Constant), ECA						

Table 2c

Coefficients[a]								
		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	3.214	.089		36.045	.000	3.038	3.390
	Extracurriculum Activities	-.010	.038	-.019	-.265	.791	-.086	.065
a. Dependent Variable: Academic Performance								

Simple linear regression was carried out to investigate the relationship between extracurricular activities and academic performance. A non-significant regression equation was found ($F(1, 198)=0.70$, $p>.0.5$ with $R=.019$ and an R-Squared (R^2) of .000. This indicates that there is no significant relationship between involvement in extracurricular activities and academic performance. Surprisingly this contradicts with students' survey responses which give an idea that ECA helps them to improve their grades. This also negates with Darling, Caldwell, and Smith (2017) who expressed that participation in ECA yields positive academic-related outcomes like helping students to obtain a higher grade point average and also decreases dropout rates.

Research question 2

Is there a significant relationship between involvement in extracurricular activity and interpersonal skills among medical undergraduates?

Saqib, et al. (2018) claimed that EAC participation allows youths to form new connections with peers and acquire social capital. Additionally, ECA is one of the few contexts in which adolescents regularly meet their peers outside of the classroom.

Table 3: Involvement in Extracurricular Activities and Interpersonal Skills

		Agree %	Uncertain %	Disagree %
1	Involvement in extracurricular activities increase my self confidence	79	7	14
2	Involvement in extracurricular activities helps me to make friends	84	5	11
3	Involvement in extracurricular activities is the best way to meet new people	85	4	11
4	Involvement in extracurricular activities make me feel more connected to my collegemates	81	6	13
5	Involvement in extracurricular activities helps me to acquire skills that I can use after college	81	6	13
6	Involvement in extracurricular activities helps me to tolerate peers' weaknesses	78	8	14
7	I am not intimidated by administrative officials	76	9	15
8	My communication skills have improved	83	5	12
9	I am free to mingle with people at social functions	80	6	14
10	When I don't understand any topics in my subjects, I am not afraid to ask fellow students for clarifications	81	6	13
11	I can manage my emotion	79	8	13
12	I miss out on events with family or friends	50	10	40

Table 3 indicates the findings on the effects of extracurricular activities on interpersonal skills for students at higher learning institutions. The involvement in extracurricular activities has helped to boost self-confidence perceived to be important (79%) and less important (14%). A large percentage (84%) of the medical students strongly believe that extracurricular activities help them to make friends compared to 11% of them who think otherwise. In addition, 85% of the undergraduates feel that through extracurricular activities, they can meet new members as opposed to 11% who showed disagreement.

To further triangulate the findings, semi-structured interviews were conducted with a few respondents randomly. The findings of the semi-structured interview reveal that many of the respondents viewed ECA as a good avenue to foster interest in the activities as they enjoyed organizing activities in ECA clubs. Besides, they found ECA to be very helpful and created a stress-free environment which helped improve their academic performance as well as expanded their circle of friends. This is inconsistent with Shadid et al. (2020) pointed out that medical students who did not involve in ECA experienced higher burnout rates than those who did. This also can enlighten Almalki, et al (2017) who found a high stress level among medical students who were involved in ECA.

Respondent 97 said that "ECA gives me a chance to try something new to extend my learning into a realm of physical or creative activity beyond something strictly academic." The students added that the fulfillment achieved from participating in ECA resulted in students remaining with the club. The results of the semi-structured interview, on the whole, disclosed that involvement in ECA activities helps students to improve their CGPA. However, Respondent 45 felt that when she represented the University for Taekwondo Tournament, she had to miss classes a few times. "The competition sometimes will clash with my important classes. I had to complete assignments before my competition or had to request special permission for a later submission". She added that such a condition had increased her levels of burnout and anxiety. She added,

> When I won the public speaking competition, I was overjoyed. I never thought that I will win. It was my first win. I was so proud. This motivated me to work harder not only in my club but also in my class. All my friends also started respecting me. I was motivated to be more responsible.

Hence, for Respondent 45, ECA retained confidence and provided motivation.

Although in general, participation in ECA was advantageous for the students, nonetheless it was also discovered that ECA poses some challenges for these students. It was also found through semi-structured interviews that organizing an event can be time-consuming and impact the students emotionally and physically which could lead to stress, fatigue, and bum out. Another issue highlighted was the need for more financial support for running the club's events.

The respondents provided useful feedback in the semi-structured interviews. It was obvious that many of them viewed ECA as a good avenue to foster interest in such activities as the students enjoyed organizing activities in ECA clubs. Besides, they found ECA very worthwhile and that it created a stress-free environment that helped improve their academic performance as well as expanded their circle of friends.

The majority of the respondents (81%) are aware that the involvement in extracurricular activities helps them to acquire skills that can be beneficial after college as well as feeling more connected to college mates while 13% disagree with these claims. A total of 78% of the respondents think that involvement in extracurricular activity helps them tolerate peer's weakness, while 13% consider it less beneficial to them. To the item "I am not intimidated by administrative officials", 76% of the respondents said that they were not intimidated by administrative officials even though 15% of the respondents exhibited total disagreement.

A majority of 83% revealed that their communication skills improved by participating in extracurricular activities while 12% consider it as less beneficial. A total of 80% admitted that they are free to mingle with people at social functions while 14% disagreed with the statement. According to Maamor, Ibrahim, and Samsi (2015) students in higher institutions perceive their

involvement in extracurricular activities as useful in enhancing their self-confidence and developing better communication skills.

Besides, a good percentage of the respondents (81%) indicated that they were not afraid to seek help from fellow undergraduates for clarification when they face difficulties in understanding their academic subjects. A total of 79% of the respondents found it easy to deal with their emotions well although 13% distinguished such opportunities as less important. Behtoui (2019) and Chickering (1997) report that engaging in ECA helps to stabilize students' emotions and develops their interpersonal skills. When asked whether their involvement in extracurricular activities deprived them of attending social events and meeting family and friends, 50% of the respondents fully agreed. Buckley and Lee (2018) and Roulin and Bangerter, (2013) also concur with this idea as their study showed active involvement in ECA would improve one's socializing skills.

Table 4a: Involvement in Extracurricular Activities and Interpersonal Skills

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.610[a]	.372	.368	.71499
a. Predictors: (Constant), AVEEXC				

Table 4b		**ANOVA[a]**				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.569	1	59.569	116.526	.000[b]
	Residual	100.708	197	.511		
	Total	160.277	198			
a. Dependent Variable: AVEINTPERS						
b. Predictors: (Constant), AVEEXC						

Table 4c		**Coefficients[a]**						
		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	.083	.210		.395	.693	-.331	.497
	AVEEXC	.975	.090	.610	10.795	.000	.797	1.153
a. Dependent Variable: AVEINTPERS								

Simple linear regression was carried out to investigate the relationship between curricular activities and interpersonal skills. A significant regression equation was found ($F(1, 198)=116.5$, $p<.01$, with $R=.610$ and an R-Squared of .375. This indicates that 37.5% of the variation in

interpersonal skills can be explained by extra-curricular activities. Although the R-Squared value is low, statistically significant coefficients still show the interpersonal skills are influenced positively by extracurricular activities. The Beta Unstandardised Coefficient shows that for each unit of extra-curricular activities increases, 0.975 units will increase in interpersonal skills. Hence, this stresses that there is a significant relationship between extracurricular activities and interpersonal skills. These findings corroborate with Kariyana, Maphosa, and Mapuranga (2017) who highlighted that ECA helps students mature socially by providing a setting for student interaction, and relationship formation They also added that working outside the classroom with diverse groups of individuals allows students to gain more self-confidence and become autonomous through embedded hands-on experiences, practical knowledge and skills.

In the semi-structured interview, R76 shared that he has a good relationship with his members in Theatre Club. He added that the members help each other and most of the club mates have become good friends. ECA not only improve interpersonal skill among students but also helps to improve relationships with their instructor. "My club advisor, Madam C is our lecturer. In class, she is quite strict but she is very friendly and approachable as an advisor in our theatre club". In other words, ECA has created a supportive relationship among students and gave them the confidence to rely on each other for help.

Students involved in ECA assumed more responsibilities and could make decision making especially in planning their activities. These activities provided students "hands-on" experience of leadership especially planning and organizing activities for the club members respectively. ECA allows them to groom their leadership skills. R17 who was the secretary of the debate club shared that, "Heading an inter-school debate competition taught me a lot of leadership skills. When my team organized interschool debate, I learned to prepare official documents, meet people who hold higher positions at my institution, and how to organize a successful event". Those who participated in non-sport ECAs reported consistently better adjustment than those who did not participate in ECAs and those who participate in sports (Darling, Caldwell & Smith, 2017). In other words, ECA creates a supportive relationship among students and gives them the confidence to rely on each other assistance.

Implications of the Study

Extracurricular activities offer an essential platform for students to participate in various activities that are beneficial and the skills attained from these activities will help to build their professional skills that a classroom alone cannot always prepare. This is because generic skills are an important aspect of every individual as a whole, and especially when graduates step into the working world in the future. There are demands for a quality workforce due to globalization and advances in technology. Since higher learning institutions are the frontrunners in fulfilling the job market demand, it is best to keep them in the know of the benefits of ECA. Once we

know how the undergraduates benefit by engaging in the ECA, more encouraging and constructive societies can be established at higher learning institutions. ECA not only assists the undergraduates to improve their academic performance but also guides them to build their interpersonal skills as well as leadership skills. Generic skills or employability skills will put them at an advantage in securing employment. In dealing with the drawbacks of ECA, it is suggested that undergraduates would need to be educated in selecting the right kind of ECA and activate their intellect and interpersonal skills simultaneously.

Recommendations of the Study

Although the ECA does not significantly bring negative outcome among medical students, yet to some extent, causes distress and burnout among the students. Due consideration and corrective measures should be taken to address this problem among the medical undergraduates. University counselors, for example, could allocate more attention and work with undergraduates to determine a "best fit" for participation in activities that build on their interests and skill level. Community partnerships are encouraged as working together to find quality coaches, sponsors, and funding for a variety of activities is beneficial to all involved. Institutions that offer training for coaches, sponsors, and leaders may minimize the harsh effects of poor leadership in extracurricular activities. Therefore, higher learning institutions need to create a system whereby students can establish a positive relationship with their peers who are more engaged academically.

Future longitudinal research can be carried out with students from other areas of study to find out the similarities or differences that exist among the male and female students concerning their participation in extracurricular activities. Studies can also explore the types of activities preferred and ways to reduce the burnout levels among medical undergraduates.

Conclusion

To conclude, though the linear regression analysis shows no positive significant relationship between involvement in ECA and academic performance, students' perception shows otherwise. They feel that involvement in ECA consistently and positively correlated with good institution attendance. The study indicated that at times undergraduates who became too involved in more than one ECA, we're unable to seek a balance between their ECA and completing academic assignments. However, if one learns time management skills, this issue could be addressed.

The undergraduates had fun when engaged in ECA at which strengthened friendship bonds and nurtured camaraderie. As students from all walks of life involved in ECA, they could get to know each other through clubs to build a stronger community in the college. ECA encourages

youth and staff to achieve great things (Shadid et al., 2020; Wilson, 2009) while encouraging young people to take on leadership roles and boost their confidence level.

Students involved in ECA assumed greater responsibilities and could make decisions especially in planning their activities. These activities provided students "hands-on" experience of leadership skills especially when planning and organizing activities for the club members. It is worth mentioning, however, that undergraduates who gravitate toward positions of leadership within undergraduate clubs and/or organizations generally appeared to be more motivated and engaged. This is in line with Kariyana, Maphosa, and Mapuranga (2012), Zacherman et al. (2014), and Hsien-Hsien Lau et al. (2014) who indicated that ECA creates an opportunity for students to apply their content knowledge into the real world which consequently prepares them for workplace management.

In other words, ECA allows one to transfer knowledge to practice. It was noted that ECA paves the way for students to understand the importance of critical thinking and time management skills apart from enhancing their interpersonal skills. Behtoui (2019) shares similar thoughts whereby he stressed that participation in ECA motivates students to transfer their classroom knowledge into their everyday life and that ECA plays an important role in the students' lives. Thus, we can reiterate that although ECA does not have a positive significant relationship with students' academic performance, it is quite notable that the students' interpersonal skills are enriched through extracurricular activities.

References

Arumugam, Krishnan & Masnah, N. (2007). *Impact of Extracurricular Activities on students at Higher Learning* Institution. ELT Matters 4: Developments in English Language Learning and Teaching, 110 – 119.

Avi Zacherman et al (2014). *The Relationship Between Engagement in Cocurricular Activities and Academic Performance:* Exploring Gender Differences. *Journal of Student Affairs Research and Practice,* (2).

Barnett, L. A. (2007). "Winners" and "Losers": The Effects of Being Allowed or Denied Entry into Academic Performance: Exploring Gender Differences, *Journal of Student Affairs Research and Practice, 51*(2).

Behtoui, A. (2019). Swedish young people's after-school extra-curricular activities: attendance, opportunities, and consequences. 40(3), *British Journal of Sociology of Education, p.* 340-356.

Billingsley, Janelle T.; Hurd, Noelle M. (2019) Discrimination, Mental Health, and Academic Performance among Underrepresented College Students: The Role of Extracurricular Activities at Predominantly White Institutions. *Social Psychology of Education: An International Journal,* 22(2), p. 421-446.

Buckley, P. & Lee, P.,(2018). *The impact of the extra-curricular activity on the student Experience*. Retrieved from https://doi.org/10.1177/1469787418808988 on 12 March 2020.

Darling. N, Caldwell, L. & Smith, R. (2017). Participation in Schoo;-Based Extracurricular Activities and Adolescent Adjustment. *Leisure Research,* 51-76.

Fares, J., Saadeddin, Z., Al Tabosh, H., & Aridi, H., El Mouhayyar, C. , Koleilat, M., Chaaya, M. & El-Asmar, K., (2015). Extracurricular activities associated with stress and burnout in preclinical medical students. *Journal of Epidemiology and Global Health. 6*. 10.1016/j.jegh.2015.10.003.

Hee, M., Hughes, J.N, Cao, Q. & Kwok, O. (2016). Effects of extracurricular participation during middle school on academic motivation and achievement at grade 9. *Journal of Educational Research, 53,* p. 1343–1375.

Hsien-Hsien Lau et al. (2014). activities during college on graduate employability: an empirical study of graduates of Taiwanese business schools. *Journal of Educational Studies, 40*(1).

Ishak, W., Nikravesh, R., Lederer, S., Perry, R., Ogunyemi, D., & Bernstein, C. (2013). Burnout in medical students a systematic review. *The clinical teacher, 10*(4), 242-245.

Jamalis,M., & Omar Fauzee, M.S. (2007). Developing human value through extracurricular activities. *The Journal of Human Resource and Adult Learning, 3*(1), 53–60.

Kaur, J. & Singh, N. (2018). *Evidence and benefits of postgraduate international students-staff members partnership in extra-curricular activities: a Malaysian perspective*. P. 1475-1488 |Retrieved from https://doi.org/10.1080/07294360.2018.1436527 on 15 March 2020.

Kariyana, I., Maphosa, C. & Mapuranga, B. (2017). The Influence of Learners' Participation in School Co-curricular Activities on Academic Performance: Assessment of Educators' Perceptions, 33(2), *Journal of Social Sciences*. Retrieved from https://doi.org/10.1080/09718923.2012.11893093 on 15 March 2020.

Knifsend, C. A., Juvonen, J. (2014). Social identity complexity, cross-ethnic friendships, and Intergroup attitudes in urban middle school. *Child Development, 85*, 709–721. doi:10.1111/cdev.12157.

Kuh, G.D., Kinzie, J., and Buckley, J.A. (2006). *What Matters to Student Success: A Review of the Literature,* Commissioned paper for NPEC.

Lushington et al., (2015). Culture, Extracurricular Activity, Sleep Habits, and Mental Health: A Comparison of Senior High School Asian-Australian and Caucasian-Australian Adolescents. *International Journal of Mental Health, 44*(2), p. 139-157.

Maamor,S., Ibrahim,A.Z., & Samsi,A. (2015). Faktor pemilihan jenis kokurikulum: Kajian kes pelajar Universiti Utara Malaysia (UUM). *Journal of Holistic Student Development, 2*(1), p. 35–46.

Marsh, H. & Kleitman, S. (2002). Extracurricular School Activities: The Good, the Bad, and the Nonlinear. *Harvard educational review 72*(4), p. 464–514.

Myung, H.I., Hughes, J.N. & Cao, Q. (2016). *Effects of Extracurricular Participation During Middle School on Academic Motivation and Achievement at Grade 9*. Retrieved from https://doi.org/10.3102/0002831216667479 on 14 March 2020.

Oberle, E., et al. (2019). *Extracurricular activity profiles and wellbeing in Middle Childhood: A population-Level Study* (July 2019). Retrieved From Https://Doi.Org/10.1371/Journal.Pone.0218488 On 12 March 2020.

Ollison. C.A. (2008). Can Music Education help at-Risk Students? *Teaching Music 16(3),* 20.

Pascarella, E.T. and P. T. Terenzini. (2005). *How College Affects Students: Volume 2 The Third Decade of Research*. San Francisco, CA: Jossey-Bass

Pica-Smith, C. and Poynton, T. (2014). Supporting interethnic and interracial friendships among youth to reduce prejudice and racism in schools: the role of the school counselor. *Professional School Counseling, 18(*1), p. 82-89. doi: https://dx.doi.org/10.5330/prsc.18.1.u80765360j5825l0

Rondinaro, P.D.(2004) *The Role of Interpersonal Multiple Intelligence as the Usage of Cooperative Learning Teaching Method,* Temple University Graduate Board.

Roulin, N. & Bangerter, A. (2013): Students' use of extra-curricular activities for positional advantage In competitive job markets, *Journal of Education and Work, 26*(1), p.21-47.

Rozali, M. Z. & Puteh, S. (2017). Active involvement of students in co-curriculum (sports) versus Generic skills, *Sci.Int.(Lahore)*, 29(2), p. 459-464, 2017 ISSN 1013-5316.

Saqib, et al, (2018). *Effects of Extracurricular Activities on Students*. Retrieved from www.academia.edu › 0n 15 March 2020.

Shadid, A., Shadid, A. M., Shadid, A., Almutairi, F. E., Almotairi, K. E., Aldarwish, T., & Khan, S. U. D. (2020). *Stress, burnout, and associated risk factors in medical students*. Cureus, 12(1).

Singh, N. (2018, April 18) Higher Education ***Research*** & Development ... and staff members' partnership dimensions in ***extra-curricular activities*** at a ***research university*** in ***Malaysia,*** *The Star, p.E18.*

Seow, P-S, Pan, G (2014) A literature review of the impact of extracurricular activities participation on students' academic performance. *Journal of Education for Business 89*(7): 361-366.

Tchibozo G (2007) Extra-curricular activity and the transition from higher education to work: A survey of graduates in the United Kingdom. *Higher Education Quarterly 61*, p. 37–56.

Thompson, L.J, Clark, G, Walker, M. (2013) 'It's just like an extra string to your bow': Exploring Higher education students' perceptions and experiences of extracurricular activity and employability. *Active Learning in Higher Education 14*(2): 135–147

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