PREFACE

The 2015 Asian Congress of Applied Psychology (ACAP 2015) was held May 19-20, 2015 at Holiday Inn Singapore, Orchard City Centre & Concorde Hotel Singapore. ACAP 2015 is jointly organized by Aventis School of Management, Asia's Leading Graduate School, University of Derby and Singapore University of Technology and Design (MIT).

The annual ACAP conference series, run by Asia Pacific International Academy (APIA), a subsidiary of Aventis School of Management, are major international events aimed at supporting the Applied Psychology and HR communities in Asia. Psychologists, healthcare professionals, academicians and researchers from all fields of applications get to meet, network and learn here.

The programme consisted of five one-hour plenary lectures by Dr. Jane Montague, Dr W. Quin Yow, Dr. Gabriel Tan, Dr. Konstadina Griva and Dr. Luke Van Der Laan and two half-day workshops by Ms. Eileen Seah and Dr. Chris Fong. There are also three parallel sessions of 41 oral presentations (20 minutes each).

A total of 103 registered delegates from the following countries participated in ACAP 2015: Australia, Cambodia, Canada, China, Hong Kong, Hungary, India, Indonesia, Iran, Malaysia, Philippines, Qatar, Republic of Korea, Singapore, Sweden, Switzerland, Taiwan, Thailand, United Kingdom and United States of America.

Participants were invited to submit papers to the present volume. We wish to thank Dr. Jane Montague from University of Derby, ACAP 2015 Conference Chair, for coordinating the reviewing of the submitted papers.

Asia Pacific International Academy (APIA)

Asia Pacific International Academy (APIA), a subsidiary of Aventis School of Management, was founded in 2010 with the purpose of promoting academic research and intellectual development of researchers, academicians and professionals from various institutions and across different countries in the Asia-Pacific region and beyond through academic conferences and executive training.

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CONTENTS

Subjective norms of the intention to use green sustainable transportation: A case study of In-Trans shuttle bus facility and travel mode choice of Pembangunan Jaya University students in Bintaro Jaya

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Transportation psychology recognizes how subjective norms, or perceived approvals or disapproval from significant others, are known to impact intention – an immediate antecedent of behavior to opt for public transportation. This writing focuses on In-Trans, a free-of-charge shuttle bus facility provided by Jaya Real Property (JRP) property developer in Bintaro Jaya area – a 2,000 hectare, self-contained, residential and commercial properties in South Tangerang. By conducting a survey to 202 students of Pembangunan Jaya University located in Bintaro Jaya, this research captures that in using In-Trans, friends are key referents whose approvals they are motivated to comply with. It is hoped that this will lead to a greater understanding of travel mode choice, especially for advancing green sustainable transportation.

Keywords: Subjective Norms, Referent, Motivation to Comply, Intention, Travel Mode Choice, Public Transport, Green Sustainable Transportation.

1. Introduction

In many urban areas in different parts of the world, it is widely recognized that heavy reliance on privately-owned motorized vehicles has led to air pollution, noise, traffic congestion and parking problems; hence there are numerous concerted initiatives to induce individuals to use public transportation (Bamberg, Ajzen and Schmidt, 2003). Transportation psychology recognizes how subjective norms contribute to transportation mode choice - determined not only by complex interrelations of travel destination, life situation, lifestyle, location choice, urban form, but also by variables such as motivation, interest as well as norms (Scheiner and Holz-Rau, 2010).

Theory of Planned Behavior (TPB) postulates that behavior is guided by beliefs about the likely consequences of the behavior (attitude), beliefs about the

normative expectations of others (subjective norms), and beliefs about the presence of factors that may facilitate or hinder performance of the behavior (perceived behavioral control). TPB is one amongst many theories used to examine the formation of intention, which is the immediate determinant of behavior (Bamberg, Rölle and Weber, 2003).

This writing focuses on In-Trans – a free-of-charge shuttle bus facility which started its operation on April, 20, 2014. In-Trans service is organized by Jaya Real Property (JRP) property developer to facilitate movement of people living, studying and working in Bintaro Jaya - a 2,000 hectare, self-contained, residential, commercial as well as educational area in South Tangerang. Aimed to reduce the use of privately-owned motorized vehicles, this public transportation runs in the morning from 05:30 to 10:00 and in the afternoon from 18:00 to 21:00, passing a number of key areas, including Pembangunan Jaya University (Kicau Bintaro, 2014).

Fig. 1. In-Trans Shuttle Bus Facility (Kicau Bintaro, 2014) and Yunita et. al. (2014)

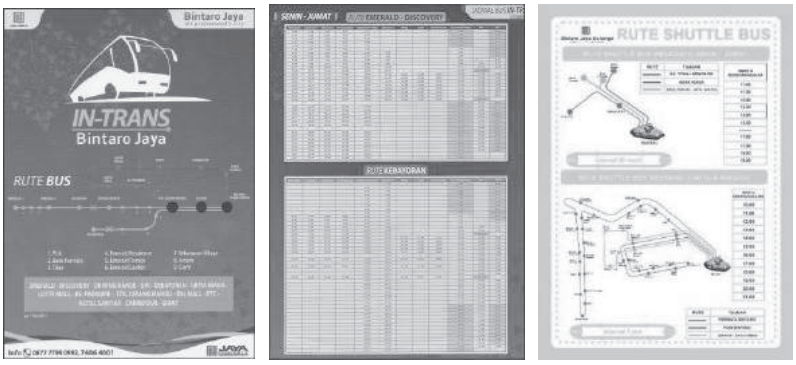

Fig. 2. In-Trans Shuttle Bus Route and Schedule Announcement (Kicau Bintaro, 2014)

This research aims to identify subjective norms of Pembangunan Jaya University students in using In-Trans shuttle bus facility. It is hoped that this will lead to a greater understanding of travel mode choice, especially for the advancement of green, sustainable transportation.

2. Literature Review

Heath and Gifford (2002) examine that TPB has been used as an integrating framework for psychological factors underlying public transportation use. This theory proposes that intention is the closest antecedent of behavior, and intention is in turn predicted by attitude, subjective norms and perceived behavioral control – which are determined by beliefs for each components and evaluations of those beliefs. It is argued that since these beliefs are the informational foundation of behavior, hence changes of these beliefs should lead to behavior change.

In TPB, subjective norms concern about perceived social pressure or general perception of social pressure; hence the more favorable the subjective norms are, the stronger should be the person's intention to perform the behavior in question (Ajzen, 2002). Even though Heath and Gifford (2002) point out that subjective norms are only weakly related to intentions, yet in the examination of commuting behavior in Jakarta using Transjakarta shuttle bus public transportation, Mulya (2009) notes that subjective norms in fact have significant contribution to intention. Similarities between Transjakarta and In-Trans as green sustainable transportation lead to the decision to focus on subjective norms in this writing.

TPB highlights that subjective norms emphasize the influence of significant others or referents to intention (Heath and Gifford, 2002). Sheeran and Orbell (1999) prescribe that in examining subjective norms, perceived norms of a behaviorally relevant referents influence behavioral intentions only for those who identified strongly with the reference group. Subjective norms comprises of two components: (1) normative belief on whether referents approve or disapprove a certain behavior to be performed by the individuals and (2) motivation to comply on whether individuals are motivated to comply or not with referents (Ajzen, 2002).

Perception of approvals or disapprovals of referents motivate individuals to do the same because it provides evidence as to what will likely be effective and adaptive action as well as an information-processing shortcut in choosing how to behave in a given situation. Individuals are motivated to comply with particular behavior when their referents also commit to the same behavior most of the time. Measures of normative belief strength and motivation to comply to

referents offer a snap shot of subjective norms of a given population, in this case Pembangunan Jaya University student, of their intention to use In-Trans shuttle bus facility.

3. Methodology

The purpose of this case study research is to identify subjective norms of Pembangunan Jaya University students in using In-Trans shuttle bus facility. It is because Pembangunan Jaya University is part of its route with the students as key beneficiaries and as adolescents and young adults, Pembangunan Jaya University students' intention are worthy for further examination for possible behavioral intervention toward green sustainable transportation.

To do so, a paper-and-pencil Subjective Norm questionnaire is developed by students of Department of Psychology Pembangunan Jaya University who are enrolled in Methods for Constructing Psychological Scale course as part of their compulsory assignment. The behavior of interest is operationally defined as follow: using In-Trans as travel mode choice to and from Pembangunan Jaya University every time the opportunity presents itself.

The questionnaire comprises of 5 items on normative beliefs comprising of statements on whether or not referents approve or disapprove the intention of using In-Trans, and 5 items on motivation to comply comprising of statements on whether or not students are motivated or not to comply with the referents in using In-Trans. Each item is scored in 1 to 4 scales and then shuffled. The higher the score, the stronger the referents approve student behavior of using In-Trans and the more motivated they are to comply with the referents. Hence it is more likely for the students to use In-Trans shuttle bus facility. In other words, high score indicates favorable dispositions or action.

Referents in this questionnaire are friends, boyfriends/girlfriends, parents, brother(s)/sister(s) and lecturers. They are identified and affirmed in a pilot study involving 30 subjects by eliciting relevant individuals readily accessible in students memory, whether these referents approve or disapprove the behavior of the student to use In-Trans shuttle bus facility, and whether student are motivated to comply with these relevant individuals. Hence, the items are designed accordingly by following this logic: e.g. "My friends think that I should use In-Trans as my travel mode choice to and from Pembangunan Jaya University every time the opportunity presents itself" (normative belief) and "I want to do what my friends think I should do" (motivation to comply). This is in line with the guideline proposed by Armitage and Conner (1999) for TPB questionnaire format. Items have demonstrated internal consistency (Cronbach's $\alpha = 0.872$) and hence they are reliable and valid.

Subjects are 202 students from 10 study programs batch 2013–2014 of Pembangunan Jaya University sampled in accidental or convenient sampling technique — 110 of them are female and 92 are male. In terms of age, 115 of them are above 20 years old, and 87 students are below 20 years old. These subjects are enrolled in university-wide courses from September to December 2014. Data gathering is done on December 1–5, 2014 by distributing questionnaires to the subjects after first explaining the purpose of the research to secure their consents.

4. Findings

Data analysis using SPSS 20 on data gathered are represented in the table below.

Table 1. Means

N = 202		M
Friends		
	Normative belief	3.57
	Motivation to comply	3.56
Boyfriend/girlfriend		
	Normative belief	3.48
	Motivation to comply	3.45
Lecturers		
	Normative belief	3.15
	Motivation to comply	3.23
Brother(s)/Sister(s)		
	Normative belief	2.29
	Motivation to comply	2.11
Parents		
	Normative belief	1.32
	Motivation to comply	1.44

Based on the table above, friends are the most important referents considered by Pembangunan Jaya University students, whose approval they are motivated to comply with. Next are their boyfriend/girlfriend and lecturers. Meanwhile, the next in line are family members such as brother(s)/sister(s) and parents as they are considered referents with less weigh.

5. Limitation of the Study

Limitations of this study are that this writing uses only Pembangunan Jaya university students as its sample, thus the extent to which the results can be generalized to other population is not certain.

6. Conclusion and Future Direction

To conclude, in terms of subjective norms of the intention for Pembangunan Jaya University to use In-Trans shuttle bus as their travel mode choice to and from their campus every time they have the opportunity, friends are key referent for these students, whose approval they are motivated to comply.

Practical implication of this finding is as follow. In the effort to promote the use of In-Trans shuttle bus as green sustainable transportation in Bintaro Jaya specifically amongst Pembangunan Jaya students, Jaya Real Property (JRP) property as organizer of this service can use this information to create campaign emphasizing In-Trans shuttle bus as a mode of transportation shared amongst friends. By capturing positive experience revolving the ideas of friendship, camaraderie, sociability and togetherness, it is expected that such message would resonate with the beneficiaries of this travel mode choice.

Future direction of this research is to expand this study in order to capture other beneficiaries such as employees, housewives as well as other types of beneficiaries of this green sustainable transportation mode. It is hoped that this will lead to a greater understanding of travel mode choice which would contribute to gradual shift from over-dependence of privately-owned motorized vehicles to public transportation which would later on reduce air pollution and noise as well as traffic jams.

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Psychological safety and organisational performance in Indonesian companies: Preliminary findings*

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This study examines the relationship between psychological safety and organisational performance in Indonesian companies. Drawing upon our 80 piloted responses survey results, we identify new theoretical dimensions for psychological safety such as physical risk audit and emotional inner whilst employee's well-being as a new construct which augments the non-financial performance measurement concept. In fact, previous studies overlooked them in the theoretical conceptualisation. This preliminary study shows some significant relationships between psychological safety dimensions and organisational performance. Hence, it gives novel insights for the theoretical conceptualisation of psychological safety and organisational performance. However, this study has some limitations; thus, managerial implications should cautiously be considered.

Keywords: Psychological Safety, Employee's Well-being, Organisational Performance, Indonesia.

1. Introduction

Psychological safety relates to organisational performance (Huang, Chu, Jiang, & Ieee, 2008). According to Hirak, Peng, Carmeli, and Schaubroeck (2012), employee's psychological safety has a direct effect on organisational performance. Thus, in order to increase its performance, a company has to develop a better employee's psychological safety. However, in the context of developing countries such as Indonesia, psychological safety related programmes as a part of the broader social exchange processes in an organisation (Carmeli, 2007) and as a key of the organisational capabilities (Carmeli, Brueller, & Dutton, 2009) are remain inadequate (Bosak, Coetsee, & Cullinane, 2013). As far we know, numerous workplace conditions such as physical workload, equipment status and manipulation, noise, etc. can be very deplorable (Beus, Payne, Bergman, & Arthur, 2010).

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Furthermore, especially in Indonesia's context, Bennington and Habir (2003) argue that an employee's minimum wage in Indonesia is lower than a single person's minimum physical needs and many employers have paid their employees less than the minimum wage. So far, however, this issue that relates to employees' welfare is still lacking and need to be explored (Andreassi, Lawter, Brockerhoff, & Rutigliano, 2014). For instance, working environment can physically, emotionally and cognitively affect employee engagement, sacrifice, efficiency and performance (Brown & Leigh, 1996; Hendriani, Efni, & Siswanto, 2014). Hence, the current study explores the impact of psychological safety on organisational performance in order to provide some new insights.

This study provides several noteworthy contributions to our knowledge by addressing three issues. First, this study adds substantially to our understanding of the relationship between psychological safety and organisational performance in Indonesia companies. Second, this study critically examines the psychological safety and organisational performance dimensions which are extended from the previous studies (Carmeli, 2007; Edmondson, 1999). Finally, this study provides an input for managers and policy makers which is related to psychological aspects and organisational performance. Therefore, in achieving these aims, we create an outline of this study.

This study is organised as follows. Firstly, we start with an introduction of study, which describes an overview of the concept of psychological safety, organisational performance and several fruitful contributions of study. Secondly, theoretical background and hypotheses development have been discussed in order to build a theoretical framework of the study. Thirdly, we describe a methodological approach and data analysis, which is suitable for the current study. Fourthly, we then present and discuss our findings relative to the extant literature. Finally, we encapsulate with several suggestions for theoretical contributions, managerial implications, limitations and areas of further study. Thus, in the next part we will discuss about theoretical background and hypotheses development.

2. Theory and Hypotheses Development

Psychological safety and organisational performance are closely related (Bradley, Postlethwaite, Klotz, Hamdani, & Brown, 2012). However, this relationship remains a debate in the literature. Hence, in this study, the systematic literature review (SLR) has been conducted by using "Web of Science" (WoS) database from 1970-2014 with several searching keywords, including "psychological safety and business performance" and "psych* safe* and Organ* performance". This SLR provides 338 hits of articles on

psychological safety and organisational performance. Moreover, according to Tranfield, Denyer, and Smart (2003), this method is a replicable, scientific, and transparent methodology for literature review. In addition, some inclusion and exclusion criteria such as focus on topic in management and business only, English language version only, peer-reviewed journals based articles which are only published in top tier journals (e.g. Association of Business Schools (ABS) ranking 2010: grade 3 and 4 journals) have reduced the hit result into 63 studies. Thus, Table 1 summarises the definition and some primary contributors of this study.

Moreover, Figure 1 describes the number of publications on psychological safety and organisational performance from 1970-2014. The result shows that a number of articles on those topics are increasing year by year. However, only limited studies are addressed in the reputable journals. It means that the further study of those topics is widely open. Hence, Table 2 shows the top 10 journals on psychological safety and organisational performance.

Table 2 depicts the top 10 journals which have published several articles on psychological safety and organisational performance studies. This rank is based on the impact factor from Thomson ISI (Harzing, 2013). The impact factor shows the journal influence score or journal performance metric (Chang, McAleer, & Oxley, 2013). Thus, a higher impact factor means that the article has a better performance. Based on the impact factor, *Academy of Management Review* is the highest rank journal. However, this journal only published 1 article on psychological safety and organisational performance. In contrast, *Journal of Applied Psychology* which is only in rank six has the highest number of publications. Hence, it means that study on psychological safety and organisational performance has been relatively scanty in management and business area even though it has the highest impact factor. Consequently, realising the gap in the extant management and business literature gives a big opportunity for the future research (Nembhard & Edmondson, 2006). Moreover, in the next stage we will discuss about psychological safety, organisational performance and their relationship.

2.1. Psychological safety

Edmondson (1999) emphasises that psychological safety refers to employee's shared belief about an interpersonal risk in doing a job. Slightly different, in an organisational context, psychological safety refers to a primary belief about how other people in the organisation response to an individual member choice which may be risky for the organisation (Cannon & Edmondson, 2001; Kark & Carmeli, 2009). Moreover, Walumbwa and Schaubroeck (2009) describe that a

work climate in an organisation is characterized by mutual respect. They argue that in order to create a good psychological safety climate, employees must be free and comfortable to express their differences. As a result, when an employee faces mutual respect from other such as co-worker or manager, he/she feels psychologically safe from a fear of being rejected, embarrassed or punished by the organisation's members (Brueller & Carmeli, 2011; Nembhard & Edmondson, 2006; Tynan, 2005; Zhang et al., 2010). Further, psychological safety in this study stems from some dimensions, including physical risk-psychological safety, energy-psychological safety, inner-psychological safety and team-psychological safety respectively. Hence, we aim to explore a comprehensive list of those key underpinning dimensions in the next stage.

First, physical-risk psychological safety is a type of psychological safety, which is dealing with physical risk conditions (Amponsah-Tawiah, Jain, Leka, Hollis, & Cox, 2013). According to Beus et al. (2010), the physical conditions of work influence the employee psychologically. Thus, it means that one of the sources of employee's psychological safety is physical risk safety. Furthermore, physical risk-psychological safety also relates to other types of psychological safety (Beus et al., 2010; Lu & Tsai, 2008; Makin & Winder, 2008; Walker & Hutton, 2006; Wu et al., 2008). For instance, Beus et al. (2010) discover that safety climate from a physical accident affects a group or organisational climate. Deductively, a physical accident leads to psychological-physical risk working area may be due to lack safety climate audit. Therefore, physical-risk psychological safety in this study has two sub-dimensions, including physical risk audit and physical risk working area. The discussion to this point leads to the following hypotheses:

H1a. Physical risk audit has a relationship with physical risk working area
H1b. Physical risk audit has a relationship with emotional inner
H1c. Physical risk audit has a relationship with organisational responsibility
H1d. Physical risk audit has a relationship with team embeddedness
H1e. Physical risk audit has a relationship with company's image
H1f. Physical risk audit has a relationship with employee's well-being

Table 1 Summary of Key Contributors of Study

Variable	Definition	Key Contributors
Physical risk psychological safety	Physical risk-psychological safety is a safety feeling due to physical risk conditions/ hazard (e.g., equipment failure, noisy area, etc.,)	Hayes, Perander, Smecko, and Trask (1998), Sparks, Faragher, and Cooper (2001), Smallman and John (2001), Wallace and Chen (2005), Neal and Griffin (2006), Walker and Hutton (2006), Kongtip, Yoosook, and Chantanakul (2008), T.-C. Wu, Chen, and Li (2008), Lu and Tsai (2008), Makin and Winder (2008), Fernández-Muñiz, Montes-Peón, and Vázquez-Ordás (2009), Beus et al. (2010), Probst and Estrada (2010), Rouvroye, Rausand, and Schönbeck (2010), Morrow et al. (2010), Dollard and Bakker (2010), Bluyssen, Janssen, van den Brink, and de Kluizenaar (2011), Idris, Dollard, Coward, and Dormann (2012), Wachter and Yorio (2013)
Inner-psychological safety	Inner-psychological safety is the ability of an employee to show him/herself without fear of unpleasant consequences to his/her image or career	Edmondson (1999), Baer and Frese (2003), Fernández-Muñiz et al. (2009), Y. Zhang, Fang, Wei, and Chen (2010) and Bluyssen et al. (2011), Kahn (1990), Brown and Leigh (1996), Williamson, Feyer, Cairns, and Biancotti (1997), Tomas, Melia, and Oliver (1999), May, Gilson, and Harter (2004), Walker and Hutton (2006), Lu and Tsai (2008), Makin and Winder (2008), Fernández-Muñiz et al. (2009), Y. Zhang et al. (2010), Bluyssen et al. (2011), Liang, C. Farh, and Farh (2012), Idris et al. (2012), Gong, Cheung, Wang, and Huang (2012), Halbesleben et al. (2013), Cigularov, Adams, Gittleman, Haile, and Chen (2013)
Energy-psychological safety	Energy-psychological safety refers to safety-perceived feeling of employees, which comes from the involvement and support of their co-workers and supervisor/company	Babin and Boles (1996), Amabile, Conti, Coon, Lazenby, and Herron (1996), Oldham and Cummings (1996), Tomas et al. (1999), Danna and Griffin (1999), Flin, Mearns, O'Connor, and Bryden (2000), Zohar (2002), May et al. (2004), Walker and Hutton (2006), Lu and Tsai (2008), Makin and Winder (2008), T.-C. Wu et al. (2008), Dov (2008), C. C. Huang et al. (2008), Beus et al. (2010), Probst and Estrada (2010), Törner (2011), Jung Young, Swink, and Pandejpong (2011), Dysvik and Kuvaas (2012), Al-Refaie (2013), Y.-h. Huang et al. (2013)
Team psychological safety	Team-psychological safety is a shared belief among the team members that is safe for interpersonal risk taking	Edmondson (1999), Amabile et al. (1996), Baer and Frese (2003), Burke, Stagl, Salas, Pierce, and Kendall (2006), C. C. Huang et al. (2008), (Kark and Carmeli (2009); Walumbwa and Schaubroeck (2009)), Jung Young et al. (2011), J. Schaubroeck, S. S. K. Lam, and A. C. Peng (2011), Idris et al. (2012), Hirak et al. (2012), Howorth, Smith, and Parkinson (2012),

Table 1 (Continued)

Variable	Definition	Key Contributors
Financial performance	Performance measurement based on financial indicators such as sales, profit, return on investment (ROI) and return on equity (ROE)	Eccles (1991), Neely (2005), Neely (1999), Baer and Frese (2003), Aragon-Correa, Garcia-Morales, and Cordon-Pozo (2007), Alpkan, Yilmaz, and Kaya (2007), Fernández-Muñiz et al. (2009), Kim and Kim (2009), González-Benito and Suárez-González (2010), Rosenbusch, Brinckmann, and Bausch (2011), Dysvik and Kuvaas (2012),
Non-financial performance	Performance measurement based on non-financial indicators such as market share, customer satisfaction, employee satisfaction and well-being, internal business process, learning & growth and innovation	Eccles (1991), Riggs and Knight (1994), K. W. Brown and Ryan (2003), Brown and Leigh (1996), Oldham and Cummings (1996), Curry, Snyder, Cook, Ruby, and Rehm (1997), Ryan, Bernstein, and Brown (2010), Edmondson (1999), Danna and Griffin (1999), Neely (2005), Neely (1999), Bostic, McGartland Rubio, and Hood (2000), Smallman and John (2001), Baer and Frese (2003), Ahearne, Mathieu, and Rapp (2005), Hecht and Allen (2005), Aragón-Correa, García-Morales, and Cordón-Pozo (2007), Alpkan et al. (2007), C. C. Huang et al. (2008), Baer and Oldham (2006), Ryan et al. (2010)

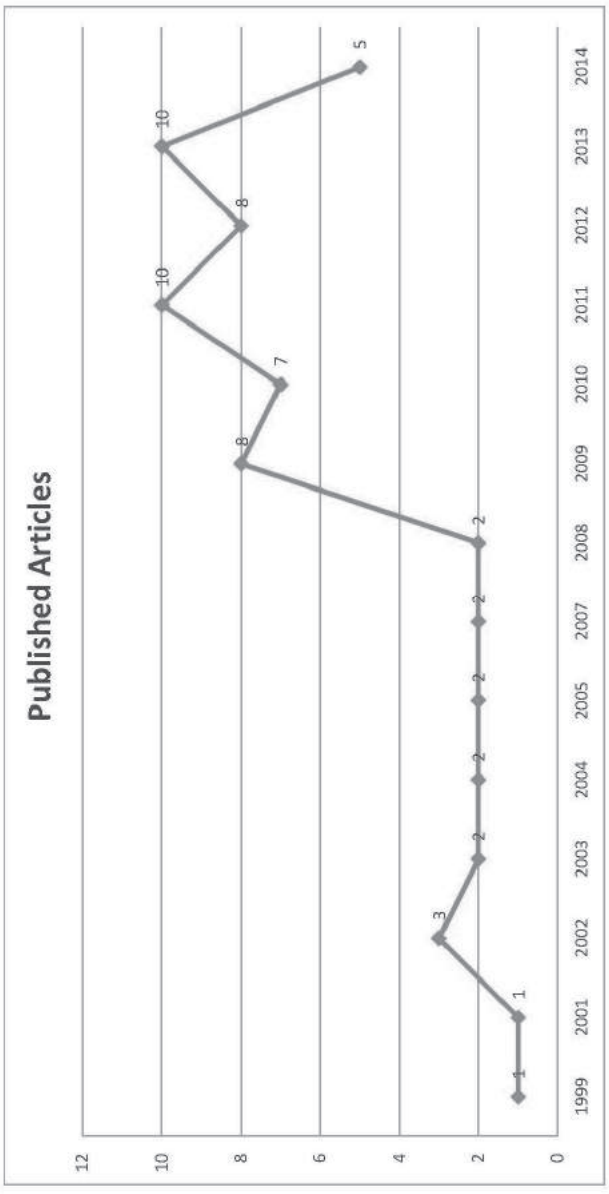

Figure 1. Number of Publication from 1970-2014
Searched Keywords: "psychological safety and business performance", "psych* safe* and Organ* performance"

Table 2 The 20 Journals on Psychological safety and Organisational Performance from 1970-2014

No	Journal	ABS Ranking's Grade	Number of Articles	Total citation	H index	Impact Factor 2013
1	Academy of Management Review	4*	1	14	163	7.817
2	Journal of Management	4	2	2	114	6.862
3	Academy of Management Journal	4*	2	37	182	4.974
4	Personnel Psychology	4	4	151	80	4.540
5	Journal of Operations Management	4	2	25	108	4.478
6	Journal of Applied Psychology	4	14	607	157	4.367
7	Organization Science	4*	8	306	133	3.807
8	Journal of Management Studies	4	2	104	89	3.277
9	Journal of Organisational Behavior	4	6	245	95	3.262
10	Management Science	4*	1	91	153	2.524

ABS = Association of Business Schools; H Index = based on SCImago Journal & Country Range 2013; Impact Factor = based on 2013 Thomson ISI Journal Citation Reports

H2a. Physical risk working area has a relationship with organisational responsibility

H2b. Physical risk working area has a relationship with emotional inner

H2c. Physical risk working area has a relationship with employee's well-being

H2d. Physical risk working area has a relationship with company's image

Second, energy-psychological safety is a safety-perceived feeling of employees, which comes from the involvement and support of their co-workers and supervisor (Babin & Boles, 1996; Baer & Frese, 2003; Gibson & Gibbs, 2006; Pearsall & Ellis, 2011; Walumbwa & Schaubroeck, 2009). Thus, it means that energy psychological safety is about the responsibility of the member of organisation, including co-workers and supervisor to create safety climate in the organisation. Hence, this study named it as the organisational responsibility. Additionally, Tomas et al. (1999) have proposed that organisational responsibility on safety climates is significantly related to individual or inner psychological safety which shown in the employee's work behavior. Moreover, some authors, i.e. Jung Young et al. (2011) and Huang et al. (2008) note that organisational responsibility is also related to organisational performance. For example, Jung Young et al. (2011) argue that energy psychological safety has

direct effect on performance. However, Huang et al. (2008) note that energy psychological safety leads to performance through the team learning as a mediating variable. Thus, on the basis of theory and prior studies, this study posits some following hypotheses:

H3a. Organisational responsibility is related to emotional inner.

H3b. Organisational responsibility is related to employee's well-being.

H3c. Organisational responsibility is related to team embeddedness

H3d. Organisational responsibility is related to company's image.

Third, inner-psychological safety is an emotional safety of the employee when he/she interacts with his/her co-workers and managers (Brown & Leigh, 1996; May et al., 2004; Tynan, 2005). Slightly different, Kahn (1990, p. 708) defines that inner-psychological safety is an employee's feeling that he/she can do his/her job without fear of unpleasant consequences to his/her image or career. It means that inner psychological safety comes from him/her-self. Furthermore, according to some prior studies, i.e. Zhang et al. (2010) and Bluyssen et al. (2011), inner psychological safety not only affects other types of psychological safety e.g., team psychological safety but also the organisational performance. Hence, we call the inner psychological safety in this study as emotional inner which relates to the emotional aspect of employees. Based on the above reasons, this study proposes the following hypotheses:

H4a. Emotional inner is related to team embeddedness.

H4b. Emotional inner is related to employee's well-being.

H4b. Emotional inner is related to company's image.

Finally, team psychological safety refers to a shared belief on interpersonal risk taking among the team members (Edmondson, 1999). Hence, it means that team-psychological safety is the team's confidence in speaking up freely. Moreover, according to Bradley et al. (2012), the team's confidence comes from mutual respect and trust among the team members. In addition, team safety is an antecedent of organisational performance (Hirak et al., 2012; Jung Young et al., 2011; Schaubroeck, Lam, & Peng, 2011). Moreover, team psychological safety in this study is called as team embeddedness. Therefore, based on the above rationale, this study predicts the following hypotheses:

H5a. Team embeddedness is related to company's image

H5b. Team embeddedness is related to employee's well-being

H5c. Team embeddedness is related to financial performance

2.2. Organisational performance

According to Neely (1999), one important topic in business management is performance measurement. Commonly, most of organisations have measured

their performance based on financial accounting performance methods (Wu & Chang, 2012). These measurements are only related to the financial conditions of the company, whilst performance of the company is not only about financial aspects but also non-financial indicators. For example, Alpkan et al. (2007) proposed profitability, market share, customer satisfaction, and adaptability as the organisational performance indicators. Moreover, Meglio and Risberg (2011) classify two organisational performance domains. Firstly, financial domain which is based on market and accounting indicators such as risk, market value, profitability, growth, leverage, liquidity, and cash flow. Secondly, another organisational performance dimension is non-financial performance, which stems from operational performance (e.g., marketing, innovation and productivity) and overall performance (e.g., success and survival). Furthermore, some studies such as Fernández-Muñiz et al. (2009), González-Benito and Suárez-González (2010) and Dysvik and Kuvaas (2012) hold the view that non-financial performance, such as employee satisfaction and company's image lead to financial performance. Hence, we will focus on financial and non-financial performance in the next discussion.

First, financial performance is measured by financial indicators such as sales growth, profitability that is reflected by some ratios such as return on investment (ROI), return on sales (ROS), and return on equity (ROE) (Stam, Arzlanian, & Elfring, 2013). Financial performance is a famous indicator of an organisational performance measurement. Some scholars such as Eccles (1991) and Rosenbusch et al. (2011) assume that if a company has shown a good financial performance, people will see it as a prospective company and *vice versa*. In consequence of that, to be a prospective firm, a company has to focus on its financial performance.

However, financial performance is not the only one indicator of organisational performance. Some researchers, including González-Benito and Suárez-González (2010), Törner (2011) and Danna and Griffin (1999), claim that there are several indicators of business performance such as customer satisfaction, technological performance, etc. Therefore, the previous argument about financial performance as the main indicator of organisational performance became debatable. Moreover, In line with the previous scholars, Richard, Devinney, Yip, and Johnson (2009) argue that performance can be measured by using one of mixed accounting and market performance measurement which is called as balanced scorecards. Balanced scorecards use some perspectives of organisational performance, including financial, internal business processes, customer perspectives and innovation and learning. Thus, a chance of using both

financial and non-financial indicators in assessing organisational performance is widely open. Hence, the non-financial performance will be discussed in further.

Second, non-financial performance is measured by some indicators such as market share, image, customer response and satisfaction. This broadening concept leads to organisational effectiveness. Organisational effectiveness is overall performance based on strategic management and organisational theory. According to Eccles (1991), the company uses non-financial performance measurement due to the sophistication of financial performance. He also argues that data for this measurement is generated less often (e.g., quarterly or annually). Moreover, non-financial performance measurements such as market share, customer satisfaction, company's image and innovation are more modest and it also has a relationship with financial performance (Wu & Chang, 2012).

Furthermore, Danna and Griffin (1999) and Van De Voorde, Paauwe, and Van Veldhoven (2012) argue that organisational performance can be measured by using well-being conditions of the employee. They emphasised that well-being conditions of an employee, such as anxiety, depression and stress are also related to the performance. In addition, Wright and Huang (2012) note that well-being is related to several human aspects including positive effect, negative effect, mental health, emotional exhaustion, life satisfaction, domain satisfaction, dispositional affect, and psychological and emotional aspect of our lives. Thus, this study uses two types of non-financial performance (e.g. employee's well-being and company's image) and financial performance. Therefore, from this point of view, the authors posit the following hypotheses:

H6a Company's image is related to employee's well-being

H6b Company's image is related to financial performance

H7 Employee's well-being is related to financial performance

Furthermore, we will discuss about the research method of this study in the next stage, including sample and procedure, measurement, and analysis.

3. Method

3.1. Sample and procedure

This study is a preliminary stage of the main fieldwork. This study surveyed 80 Indonesian large firms' managers and employees. A large company in this study is a company which has more than 300 employees (Hayashi, 2002). We used a convenience sample. However, to minimise bias, participants were filtered by using a criterion for whom that has minimum two years' experience in their respective companies. Our research instrument employed five point Likert scale

whereby *strongly disagree*=1 and *strongly agree*=5. The questionnaire was pre-tested by five academicians and five professionals. In addition, the pre-tested was translated into *Bahasa Indonesia* by using back translation procedures (Sekaran & Bougie, 2013). It has been checked by three senior Indonesian academics who graduated from UK universities for their PhD level in different study areas. The examination of the translated questionnaire reduced measurement errors and bias, but also increased the content validity of this study.

Furthermore, the questionnaire was administrated through two techniques: the online survey (e.g. Quest Back online survey platform) and drop and collect method. We obtained 57 online cases and 23 responses from drop and collect. Respondents' characteristics are represented as 51.4% male and 48.6% female. The sample is categorised as 30.6% managers and 69.4% employees. The respondents' working experience varies from, 59.7% between 2 and 5 years, 18.1% between 6 and 10 years to 22.2% more than 10 years. Most of respondents are less than 30 years old (61.1%), 22.2% between 30 and 40 years and 16.1% between 41 and 50 years old. Most of them graduated from bachelor degree (88.9%) and only 11.1% have graduated from master degree. Moreover, this study employs several items to measure the constructs.

3.2. Measures

The items were generated from the literature review, and scrutinised by two senior academics. Table 3 summarises these items with their respective constructs. Moreover, the variables' operationalisation is shown below:

Physical-risk audit is a psychological safety of an employee based on monitoring of physical risk possibilities by a company such as conducting safety audit regularly and taking an action on unsafe employee's working behaviour (Al-Refaie, 2013; Amponsah-Tawiah et al., 2013; Bluyssen et al., 2011; Dollard & Bakker, 2010; Probst & Estrada, 2010; Wu et al., 2008). Based on the above definition, this construct has three measurement items.

Physical-risk working area is a psychological safety of an employee based on the working area conditions (Amponsah-Tawiah et al., 2013; Beus et al., 2010; Hayes et al., 1998; Makin & Winder, 2008; Wu et al., 2008). This construct has two measurement items.

Organisational responsibility is a psychological safety of an employee which comes from the support of the company and co-worker (Babin & Boles, 1996; Pearsall & Ellis, 2011) or in other word; it calls as energy safety. Four items were adapted from Sparks et al. (2001) and (Brown and Leigh (1996); Lu and Tsai (2008); May et al. (2004)).

Emotional inner is an inner psychological safety of an employee based on emotional factors which come from inside of the employee (Dollard & Bakker, 2010; Probst & Estrada, 2010; Tynan, 2005; Walker & Hutton, 2006). Four measurement items have been generated for this construct.

Team embeddedness is an employee's safety feeling from interpersonal risk taking among the team members (Edmondson, 1999; Howorth et al., 2012; Kark & Carmeli, 2009; Schaubroeck et al., 2011).Based on the above prior studies, this construct is measured by using 5 measurement items.

Company's image is a non-financial performance measurement based on the company's reputation and image comparison to other competitors (De Clercq, Dimov, & Thongpapanl, 2010; Eccles, 1991; González-Benito & Suárez-González, 2010; Wu & Chang, 2012). Five items measure this construct.

Employee's well-being is a non-financial performance measurement based on an employee assessment on his/her well-being such as stress, frustration and job satisfaction (Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011; Judge, Heller, & Mount, 2002; Maltin & Meyer, 2010). This construct has 3 measurement items.

Financial Performance is an organisational performance based on financial indicators such as sales, net income, market share and operational efficiency (De Clercq et al., 2010; Hajmohammad & Vachon, 2013; Hmieleski & Baron, 2009; Stam et al., 2013)

Further, this study will discuss about data analysis, including exploratory factor analysis (EFA) and Partial Least Square (PLS).

3.3. Analysis

At the first stage of analysis, this study employs the exploratory factor analysis (EFA) to reduce some items in a manageable and purified way for the development of latent variables. The results of this analysis are satisfactory (e.g. KMO test = 0.60 or above, all retained items have a loading factor ≥ 0.60 as the minimum cut off point). We identified 8 factors which were labelled in Table 3. This table shows that all items and constructs have high loading factor (≥ 0.60), Cronbach's alpha ≥ 0.70 , composite reliability (CR) ≥ 0.70, corrected item total correlation (CITC) ≥ 0.30 and average variance extracted (AVE) ≥ 0.50 (F. Hair Jr, Sarstedt, Hopkins, & G. Kuppelwieser, 2014). For Exploratory Factor Analysis (EFA), this study uses SPSS 22 as the software programme.

Furthermore, the next stage of analysis tests hypotheses through the use of structural equation modelling (SEM). There are two types of structural equation model: covariance based SEM (CB-SEM) and partial least square based SEM or PLS-SEM (Becker, Klein, & Wetzels, 2012; Hair, Sarstedt, Pieper, & Ringle,

2012; Rigdon, 2012). Both of these methods have advantages and disadvantages (Becker et al., 2012; Hair, Ringle, & Sarstedt, 2012). Thus, this study uses PLS-SEM because it has some advantages such as it can be applied to non-normal data which is cannot be done in CB-SEM, suitable for small sample sizes (e.g. minimum sample size for CB_SEM is 200) and applicable for formative indicators without any problem like in the CB-SEM (Becker et al., 2012; F. Hair Jr et al., 2014). This study uses 80 respondents and because of that, it is not suitable for CB-SEM but it can be analysed by using PLS-SEM. This study uses SmartPLS 2.0 as the analysis software. Moreover, by using the bootstrapping process with 5000 re-sampling method, PLS-SEM can sort out the normality of data problem and it can test the hypotheses (Hair, Hult, Ringle, & Sarstedt, 2013). PLS-SEM also calculates discriminant validity of construct by using Fornell-Larcker criterion with the square root of average variance extracted (AVE) as the criterion. In addition, model of this study shows the relationship between psychological safety and organisational performance in Figure 2. Hence, based on the data analysis, this study will describe the results.

4. Results

As Table 4 provides that all the constructs have high discriminant validity because they have a higher correlation value of square root of AVE in the diagonal than other value in the columns. This study tests the multicollinearity by using the value of variance inflation factors (VIF) which is less than 10 (Hair, 1998; Pallant, 2013). Table 5 presents the VIF results and it found there is no multicollinearity in this study. Moreover, this study tests 23 hypotheses, which is shown in the Table 6. From 23 hypotheses, 12 hypotheses are significant and 11 hypotheses are not significant. Thus, this analysis results will be followed by the discussion.

5. Discussion

The relationships among psychological safety and organisational performance dimensions and the relationships between psychological safety and organisational performance dimensions have been revealed from this study. First, in examining the relationships among psychological safety dimensions, we found that physical risk audit has a significant relationship with other psychological safety dimensions, including physical risk working area, emotional inner, organisational responsibility and team embeddedness (H1a, H1b, H1c and H1d). These findings have been supported by some previous studies such as Makin and Winder (2008) and Wu et al. (2008). Hence, when an

employee is safe psychologically from physical risk due to a regular company's monitoring, it has an impact on the other types of psychological safety. Furthermore, the physical risk audit is also significantly related to company's image (H1e) and this finding is consistent with the findings of some prior studies such as Bluyssen et al. (2011). However, the physical risk audit has no significant relationship with employee's well-being in this study (H1f).

Furthermore, the next dimension of physical risk psychological safety in this study is the physical risk working area. The physical risk working area is also found significantly related to the organisational responsibility (H2a). This finding is in line with some prior studies (Beus et al., 2010; Walker & Hutton, 2006). Those studies show that the working area safety is closely related to the organisational responsibility. However, the physical risk working area has no a significant relationship with other types of psychological safety, including the emotional inner (H2b) and the organisational performance dimensions such as employee's well-being (H2c) and company's image (H2d). Moreover, in the next stage we will discuss about the findings on organisational responsibility and its relationship.

Organisational responsibility is not only related to other dimensions of psychological safety, but also some dimensions of organisational performance. Organisational responsibility is significantly related to the emotional inner (H3a). This finding shows that support from the company and co-workers in organisational responsibility lead to inner psychological safety. Thus, in order to increase the inner psychological safety, the company has to perform a good organisational responsibility, such as support from the company or manager and co-workers (Cigularov et al., 2013; Makin & Winder, 2008). Moreover, organisational responsibility has a significant relationship with employee's well-being (H3b). Otherwise, it found that it has no significant relationship with the team embeddedness (H3c) and company's image (H3d) as another dimension of organisational performance.

Furthermore, the next dimension of psychological safety is the emotional inner. The emotional inner has a significant relationship with the team embeddedness (H4a). This result is supported by the previous studies (Baer & Frese, 2003; Zhang et al., 2010). When an employee has good inner psychological safety, it leads to team psychological safety. However, it has no significant relationship with employee's well-being (H4b) and company's image (H4c). Moreover, the last dimension of psychological safety, team embeddedness, is also not significantly related to organisational performance such as company's image (H5a), employee's well-being (H5b) and financial performance (H5c).

Finally, we discuss about the relationship among the dimensions of organisational performance, including financial performance, the company's image and employee's well-being. This study found that company's image has a significant relationship with employee's well-being (H6a) and financial performance (H6b). It also found that employee's well-being significantly affects financial performance (H7). These findings are in the line of some previous studies, such as Aragon-Correa et al. (2007) and Dysvik and Kuvaas (2012). Those prior studies emphasised that non-financial performance, such as image and employee's well-being leads to financial performance. Hence, in order to increase the financial performance, the company has to give more attention to the company's image and employee's well-being. Nevertheless, beside the findings above, we will discuss about some limitations and possibility for the further study.

Table 3 Testing Reliability and Convergent Validity for Constructs

Constructs	Items	Mean	Std. Dev	CITC	Loading	α	CR	AVE
Psychological Safety								
Physical Risk Audit	My company provides safety audits regularly	4.03	0.86	0.63	0.84	0.76	0.86	0.67
	My company takes actions for unsafe working behaviours of his/her employees	4.31	0.82	0.62	0.86			
	My company provides good health care programmes for the employees	4.61	0.62	0.53	0.76			
Physical Risk of Working Area	I keep my working area clean during my working hours	4.57	0.67	0.83	0.96	0.91	0.96	0.92
	I keep my working area tidy during my working hours	4.49	0.71	0.83	0.95			
Organisational responsibility	My company helps me to solve my personal conflict with other team members	4.01	0.81	0.59	0.74	0.83	0.88	0.66
	My company tends to talk down to me and other employees	4.19	0.71	0.72	0.85			
	My company praises my safety work behaviours	4.26	0.56	0.67	0.83			
	My co-workers value my inputs	4.17	0.71	0.60	0.81			
Emotional inner	I believe that my company will respect my abilities	4.14	0.81	0.52	0.71	0.79	0.86	0.61
	I believe that my company reacts quickly to my concerns regarding safety	4.28	0.63	0.54	0.73			
	I am confident with my ability in controlling my emotion at work (e.g., angry, sad, etc.)	4.10	0.79	0.69	0.86			
	I am confident that I have good health conditions to perform my job	4.36	0.56	0.62	0.81			
Team embeddedness	My team members are able to solve the job related problems	4.01	0.74	0.79	0.89	0.91	0.93	0.73
	My team members support my decision that is related to my job.	3.96	0.78	0.80	0.89			
	My team members support each other	4.35	0.61	0.73	0.81			
	I have not received any threatening behaviour from my team members	4.26	0.75	0.70	0.78			
	My team members appreciate every unique skills and talents	4.15	0.76	0.81	0.87			
Organisational Performance								
Company's Image	My company has got good corporate image	4.31	0.60	0.87	0.871	0.86	0.90	0.65
	My company's reputation is better than the competitors'	4.15	0.73	0.81	0.808			
	My company is more adaptive to new market threats than the competitors	4.15	0.66	0.79	0.786			
	My company tries out new ideas and approaches to problems	4.06	0.77	0.64	0.638			
	I try out new ideas and approaches to solve my work problems	4.04	0.72	0.63	0.625			
Employee's well-being	I never feel stressed to do my job in this company	3.71	1.07	0.92	0.919	0.79	0.88	0.71
	I am not frustrated with my job in this company	3.86	1.03	0.77	0.766			
	Overall, I am satisfied with my job	4.15	0.78	0.76	0.755			
Financial Performance	My company has got high sales revenue in the last year	3.65	1.04	0.94	0.943	0.87	0.92	0.73
	My company has got high net income in the last year	3.79	0.99	0.94	0.937			
	My company has got high market share in the last year	3.65	1.01	0.88	0.876			
	Overall efficiency of operations in my company is better than competitors'	4.03	0.89	0.64	0.642			

Std. Dev = Standard deviation; CITC = corrected item total correlation; α = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted

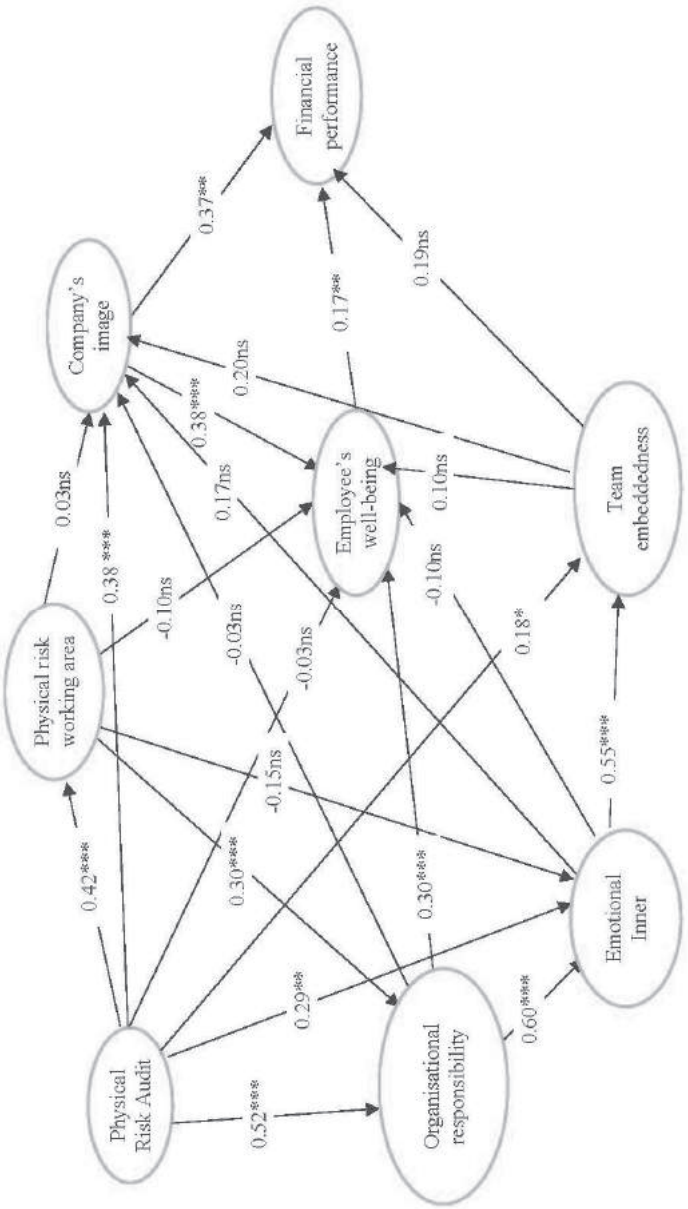

Figure 2. Model of Study

Note : *** = p < .01 ; ** = p < .05 ; * = p <.1 ; ns = not supported

Table 4 Testing Discriminant Validity for Constructs

Construct	1	2	3	4	5	6	7	8
Employee well-being	**0.84**							
Financial performance	0.46	**0.85**						
Company's image	0.48	0.65	**0.80**					
Organisational responsibility	0.41	0.41	0.48	**0.81**				
Emotional inner	0.35	0.41	0.55	0.71	**0.78**			
Physical risk audit	0.35	0.58	0.60	0.64	0.61	**0.82**		
Physical risk working area	0.15	0.27	0.28	0.52	0.28	0.42	**0.96**	
Team embeddedness	0.39	0.53	0.56	0.65	0.77	0.61	0.29	**0.85**

Note: diagonal is square root of AVE

Table 5 Construct Label and Collinearity Assessment

Construct	**Construct Label**	VIF criteria:< 10[a]
PS_PR_Au	Physical Risk Audit	2.09
PS_PR_WA	Physical Risk of Working Area	1.56
PS_En_OR	Organisational responsibility	3.78
PS_IS_EI	Emotional Inner	3.09
PS_TS_Em	Team Embeddedness	2.99
CI	Company's Image	1.49
EWB	Employee's well-being	1.44
FP	Financial Performance	*

Note: VIF = Variance inflation factors; a = (Hair, 1998; Pallant, 2013); *dependent variable

Table 6 Testing Results of Hypotheses

	Paths/Hypotheses	**Path Coefficient**	**T-value**	**Sig**	**Hypothesis Verdict**
H1a	PS_PR_Au -> PS_PR_WA	0.42	4.56	0.00	***
H1b	PS_PR_Au -> PS_IS_EI	0.29	2.39	0.03	**
H1c	PS_PR_Au -> PS_En_OR	0.52	6.70	0.00	***
H1d	PS_PR_Au -> PS_TS_Em	0.18	1.72	0.08	*
H1e	PS_PR_Au -> CI	0.38	3.42	0.00	***
H1f	PS_PR_Au -> EWB	-0.03	0.21	0.83	ns
H2a	PS_PR_WA -> PS_En_OR	0.30	3.24	0.00	***
H2b	PS_PR_WA -> PS_IS_EI	-0.15	1.38	0.17	ns
H2c	PS_PR_WA -> EWB	-0.10	0.92	0.36	ns
H2d	PS_PR_WA -> CI	0.03	0.27	0.79	ns
H3a	PS_En_OR -> PS_IS_EI	0.60	5.55	0.00	***
H3b	PS_En_OR -> EWB	0.30	3.24	0.00	***
H3c	PS_En_OR -> PS_TS_Em	0.14	1.28	0.20	ns
H3d	PS_En_OR -> CI	-0.03	0.19	0.85	ns
H4a	PS_IS_EI -> PS_TS_Em	0.55	7.02	0.00	***
H4b	PS_IS_EI -> EWB	-0.10	0.59	0.55	ns
H4c	PS_IS_EI -> CI	0.17	0.99	0.32	ns
H5a	PS_TS_Em -> CI	0.20	1.45	0.15	ns
H5b	PS_TS_Em -> EWB	0.10	0.68	0.50	ns

Table 6 (Continued)

	Paths/Hypotheses	Path Coefficient	T-value	Sig	Hypothesis Verdict
H5c	PS_TS_Em -> FP	0.19	1.55	0.12	ns
H6a	CI -> EWB	0.38	2.62	0.01	***
H6b	CI -> FP	0.37	2.27	0.02	**
H7	EWB -> FP	0.17	2.06	0.04	**

Note: *** p < .01; **p < .05; *p < .1; ns = not supported

6. Limitation and Future Research

The present study, however, makes several noteworthy contributions such as emotional aspects of inner psychological safety, which is named as emotional inner. Several previous studies, e.g. Edmondson (1999) and Bluyssen et al. (2011), have discussed about individual psychological safety, but it still on psychological safety as a whole and this study has sharpened it into a new dimension which is named as emotional inner. Furthermore, this study found two types of non-financial performance, including company's image and employee's well-being. This study also found several significant relationships between psychological safety dimensions and organisational performance dimensions (i.e. Physical risk audit and company's image, team embeddedness and financial performance).

However, this study also has some limitations such as one country study and the sample size. First, it is a cross-sectional study and it only portrays the phenomenon in single time of measurement. Second, the number of respondents is small because it is a preliminary study and it needs for a more comprehensive study with a large number of samples. Hence, in our future research, we intend to employ a cross sectional study with a large sample and validate the proposed model using covariance based structural equation modelling technique.

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Exploring the relationship between attitude similarity, likeability, and construal of student leaders

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The similarity-attraction link has received largely consistent support across decades, with prior research on organizational leadership demonstrating how similarity positively influences employees' appraisals of their supervisors and facilitates leader-member exchanges (LMX). However, little research has applied this similarity-attraction link in understanding how similarity impacts perceptions of student leaders within a college context, where student body elections are common practice. Drawing on Construal Level Theory (CLT), this research explored how attitude similarity influenced undergraduates' likeability and mental representations of their student leaders. 124 undergraduates were presented with a hypothetical student leader who held either similar or dissimilar attitudes from them on a number of pertinent school issues. Additionally, information about the leader was framed either in terms of general character traits (high-level construal condition), or contextualized behaviours (low-level construal condition). Participants then completed a Leader Evaluation Scale (LES), which was an overall measure of likeability towards the leader. While analyses revealed significant effects of attitude similarity and construal level on likeability of student leaders, CLT was unsupported in this context. Results obtained support previous research conducted in this direction, and reinforce the integral role of attitude similarity in promoting positive first impressions towards student leaders in college.

Keywords: Similarity, Attitudes, Construal Level Theory, Likeability, Student Leadership.

1. Introduction

Student leaders are a common and familiar sight in many universities across the world. In various institutions, these leaders assume positions in student-run organizations such as student unions, residence halls, fraternities, or sororities

[1]. Additionally, recent decades have seen an increased emphasis on student leadership in universities [2]. Student leaders play a distinctive role within universities, as they frequently serve as a bridge between the student body and school authorities when addressing various student needs [3]. Across countries such as the United States, structural changes have been implemented in universities, in recognition of the substantive role played by student leaders. Such changes include the incorporation of leadership lessons into classroom curricula [4], and the professionalization of student leadership educators [5].

In light of the growing attention on student leadership, research has been devoted to maximizing leadership-related outcomes in university settings. To illustrate, scholars and institutions have begun to re-evaluate existing student leadership programs, and develop new theoretical frameworks [6], [7], [8]. Further, psychometric tests such as Kouzes and Posner's Leadership Practices Inventory [9] and Tyree's Socially Responsible Leadership Scale [10] were developed to measure leadership development among university students. In addition, across many universities, the selection of student leaders typically involves multiple processes such as an election by other students, and an interview [3], [11]. Notably, literature in this domain has highlighted the need to understand the factors that influence students' selection of their leaders. In the midst of developing and validating leadership questionnaires among the student populace, it has also become important to understand whether the same socio-cognitive principles would determine leader preferences in a university setting, as compared to the industry.

1.1. The similarity-attraction link

The similarity-attraction (S-A) link posits that the development of liking toward others is influenced by their degree of similarity (actual or perceived) to oneself [12], [13]. On the contrary, dissimilarity tends to be associated with disliking and avoidance [14], [15]. A substantial amount of empirical evidence exists in support of the S-A link [16], [17], [18], [19]. Studies have explored the similarity-attraction link along with various attributes such as personality traits [20], values [21], and most commonly, attitudes toward issues [22], [23].

Social psychologists studying interpersonal attraction have investigated the effects of actual and perceived similarity on liking. Actual similarity refers to the degree of mutually held attributes between two individuals, such as attitudes [24]. Perceived similarity, however, is defined as the extent to which one believes they are similar to another individual, independent of whether genuine similarities exist [25]. To date, scholarly opinions over which form of similarity

is critical to eliciting liking have been mixed [12], although both have been found to promote liking even when measured within the same context [26].

In studying the effects of actual similarity, one frequently employed design is Byrne's bogus stranger paradigm [27], which measures how actual attitudinal similarity may promote interpersonal liking. The paradigm consists of two separate sessions; in the first, participants complete a survey measuring their attitudes on specific issues, such as abortion. After a stipulated time frame (e.g. one week later), participants return for the second session, during which they are presented with a set of responses for the same survey allegedly completed by another individual (the target). Actual similarity is manipulated by systematically varying the level of similarity or dissimilarity of attitudes expressed by the target, in comparison to the participant's own responses previously. Participants then complete the Interpersonal Judgment Scale [28], which evaluates the target on dimensions such as likeability, morality, and intelligence. Research exploring the effects of actual similarity using the bogus stranger paradigm has consistently shown that individuals are attracted to others with similar, rather than dissimilar, attitudes [19], [24], [29].

1.2. Similarity and leadership

Within the leadership domain, much research has explored how both actual and perceived similarity between leaders and their followers influence leader-member relationships in organizations [30], [31], [32]. Specifically, studies have demonstrated how actual similarity in demographic aspects such as gender and age tend to be positively associated with better leader-member exchanges [33], and also with subordinates giving more positive evaluations of their leaders' success [34]. Similar outcomes were obtained with perceived similarity as well [35], [36].

Although there has been considerable research on actual and perceived similarity and organizational leadership, it remains uncertain as to whether either form of similarity would promote university students' liking of their student leaders. At present, research on similarity and undergraduates' evaluations of their student leaders is relatively sparse. A study by Montes-Berges and Moya [37] found that similarity significantly influenced undergraduates' approval toward leaders in school; however, leaders were faculty members rather than student leaders. Investigating the similarity-attraction link with student leaders instead could thus shed light on whether students may unconsciously be influenced by similarity — an interpersonal factor not necessarily related to a leader's actual competence — when evaluating their leaders.

Collectively, prior research has examined how liking may be facilitated by actual and perceived similarity. However, few studies have investigated how similarity may alter one's mental representation of another, which could in turn affect liking and evaluations [38]. Thus, due consideration should be devoted to exploring the relationship between similarity and construal, in working towards a more holistic understanding of interpersonal attraction and its determinants.

1.3. Construal level theory

Construal Level Theory (CLT) was conceptualized with the aim of explaining the role of construal in evaluation [39], [40], [41]. The key assertion of CLT is that an individual's mental representation (or construal) of an object is associated with the object's psychological distance (temporal, spatial, social, or hypothetical) from the self [40]. Objects that are psychologically proximal from the self in the present moment tend to be construed more concretely, whereas psychologically distal objects tend to be construed more abstractly [39]. The concrete, low-level construal of the object consists of specific and secondary details surrounding it; for the abstract, high-level construal, a global meaning to the object is ascribed, while retaining only its central features [42].

1.4. Social distance

The social distance between oneself and another individual is frequently examined in understanding how people form evaluations of others based on levels of construal. Social distance has been conceptualized in a number of ways; to date, research exploring the effects of social distance on construal have operationalized social distance in terms of reported frequency and intimacy of contact with others [43], familiarity [44], as well as social power [45]. For example, participants who were primed with an experience of greater power (increased social distance) exhibited more abstract thinking compared to participants primed with a low-power experience [45]. These results are not only congruent with CLT, but illustrate the importance of social distance in influencing mental representations and evaluations within an interpersonal context.

1.5. Social distance and leadership

While researchers have yet to investigate the effects of social distance on student leader evaluation using CLT, some evidence has nonetheless been documented in studies of leaders from corporate organizations. To illustrate, study by Singh [46] operationalized social distance in terms of "top boss" (socially distal) and

"immediate boss" (socially proximal). Results indicated that a top boss was represented in more abstract, trait terms, whereas an immediate boss was represented in more concrete, behavioural terms. Social distance has also been found to influence moral judgments of leaders. Although supporting evidence of CLT has been acquired in studies of social distance and organizational leader evaluations, an exploration of social distance on student leader evaluations might not necessarily yield similar outcomes. This gap in literature highlights a need for research to extend current knowledge of how CLT could alter students' mental representations of socially distal or socially proximal student leaders.

1.6. Similarity as a measure of social distance

In testing both concepts of similarity and social distance, a considerable body of social psychological literature has begun to conceptualize interpersonal similarity as a form of social distance. Specifically, similar others are perceived to be socially proximal relative to oneself, and dissimilar others are perceived to be socially distal [43], [47]. This assumption that actual or perceived similarity is associated with social closeness has been explored in not only social settings [48], [49], but between leaders and followers in organizations as well [31].

In recent years, similarity as an index of social distance has been studied with CLT as an overarching framework. For instance, Liviatan, Trope and Liberman [50] found that participants who were presented with a similar target individual judged the target's actions in more concrete, subordinate terms, compared to participants who were exposed to a dissimilar target individual executing the same actions. In a similar vein, Liviatan [38] employed a construal-level analysis in investigating the similarity-attraction link. Results indicated that participants' reported liking of a similar target was contingent on low-level construals (contextualized behaviours) rather than high-level construals (character traits). However, research in this domain has been limited, and at present, a construal-level approach to the similarity-attraction relationship has not been explored in the context of student leader evaluation.

1.7. The present research

Similarity has consistently been found to promote liking in numerous interpersonal contexts, including corporate settings. Additionally, evidence for the effects of psychological distance on mental representations and subsequent evaluations of others has been yielded, thereby lending support to CLT. Notably, in conceptualizing similarity as a form of social distance, researchers have managed to draw on the tenets of CLT in understanding how one's mental

representation of another individual may be altered depending on the degree of similarity. While the effects of both similarity and social distance on leader evaluations have been demonstrated with adult leadership [46], no study has investigated whether these effects extend to the context of student leadership. This research seeks to bridge the aforementioned gap in literature by exploring both effects with student leaders. In so doing, it is hoped that exploring the similarity-attraction link with CLT as an overarching framework could yield implications vital to existing knowledge of student leader evaluation.

The present study seeks to explore the effects of actual similarity on undergraduate students' evaluations of their student leaders by employing the CLT framework to investigate the similarity-attraction link. It is hypothesized that:

Hypothesis 1: A similar student leader will be liked more than a dissimilar student leader.

Hypothesis 2a: A similar student leader will be liked more when he/she is described in concrete terms.

Hypothesis 2b: A dissimilar student leader will be liked more when he/she is described in abstract, rather than concrete, terms.

2. Method

2.1. Participants

A total of 124 undergraduates (32 males), aged between 18 to 40 years (M_{age} = 22.1, SD = 3.25), were recruited from James Cook University, Singapore. Participation was either voluntary, or in fulfilment of course requirements. None of the participants were Student Council leaders at the time of the study.

2.2. Design

Participants were randomly assigned to one of four conditions of a 2 (similarity: similar vs. dissimilar) x 2 (construal level: abstract vs. concrete) between-subjects experimental design (n =31). The dependent measure was the degree of likeability towards a hypothetical, prospective Student Council leader from the university.

2.3. Materials

2.3.1. Attitudes survey

To measure participants' attitudes toward a variety of issues, a Student Issues Scale (SIS) was created. The SIS consisted of 6 items listing numerous student-related issues within the university, and required participants to rate the importance of each issue. Participants were also instructed to imagine they were Student Council leaders when rating the issues. Items were rated on a 7-point Likert scale ranging from 1 (hardly important) to 7 (very important). To prevent possible priming of construal levels prior to the administration of vignettes, the framing of all items was balanced. Items 2, 3, and 6 were represented abstractly and captured the general, overarching gist of certain issues (e.g. "Ensuring the safety and security of the university campus"), while items 1, 4, and 5 were represented concretely and contained more specific, secondary details of other issues (e.g. "Ensuring that the university gathers student feedback on new university policies at least one trimester before implementing these policies").

2.3.2. Similarity manipulation

For the similarity manipulation, standardized verbal instructions to participants were administered. The instructions contained information concerning the previous year's Student Council elections — a campus-wide event where students were encouraged to vote for the subsequent year's Student Council leaders — as well as how similar or dissimilar the attitudes expressed by a nominated Student Council leader were in relation to the participant's. This similarity manipulation was modelled after Byrne's bogus stranger paradigm [27]. However, because the conventional two-session model has been found to increase attrition rates [37], the current manipulation combined both segments into a single session, separated by a five-minute interval.

2.3.3. Construal level

To manipulate construal level, two vignettes containing the profile of a hypothetical, prospective Student Council leader (the target) were created. Both vignettes presented identical information, with one being framed abstractly in terms of general character traits such as being "caring", and the other framed concretely in terms of specific behavioural tendencies, such as being "a good listener who displays concern when (students) share their struggles". The operationalization for abstract and concrete construal levels was adapted from Liviatan [38]. Additionally, demographic information about the target (age, race,

gender) was excluded from the vignettes, as these variables have been found to influence liking and leader selection [33], [51].

2.3.4. Likeability

A Leader Evaluation Scale (LES) containing 11 items was constructed to measure participants' liking of the student leader, with 7 items were taken from Heilman and Okimoto's [52] measures of likeability (Cronbach's α = .80) and boss desirability, as well as perceived competency scale (Cronbach's α = .79). Additionally, 4 items measuring character traits (immoral-moral, dishonest-honest, untrustworthy-trustworthy, disrespectful-respectful) were added to increase the relevance of the measure for the targeted population. All items were measured on 9-point Likert scales.

2.4. Experimental session

Upon the participants' arrival, they were informed that the study would be measuring their attitudes toward school-related issues and leaders. After gaining consent, participants first responded to a demographic questionnaire (this included information on age, gender, and whether participants were currently assuming any leadership positions within the university, to filter out Student Council leaders), followed by the SIS.

The first session concluded by participants notifying the researcher, who collected the form and left the cubicle for five minutes[*], presumably to process the participant's responses. Participants were shown a documentary of neutral content during this duration to keep them occupied. After five minutes, the researcher re-entered the cubicle and issued a set of instructions verbally to the participant. Depending on the condition assigned, participants were either informed that a nominated Student Council leader had expressed attitudes similar or different from the participants' own on the issues mentioned in the SIS[†].

Participants assigned to the "similar" condition were administered the following instructions:

During the most recent university Student Council elections, all students who campaigned were interviewed on which student-related issues were of

[*] In reality, the waiting time was intended to allow participants' to subsequently believe that the researcher was comparing their responses on the SIS against other nominated Student Council leaders' responses on similar items.

[†] The purpose of this mild deception was to provide the study with a degree of realism by allowing participants to assume that they would be reading about and later rating an actual, rather than hypothetical individual [53].

importance to them. One of the nominated leaders has actually expressed views very similar to yours on issues such as the variety of food in the school canteen, and safety and security of the university campus. I will now provide you with a short and anonymous description of this leader, after which you will be required to evaluate this individual. Your responses will be kept strictly confidential, so please do answer as objectively as possible. Thank you.

Conversely, participants assigned to the "dissimilar" condition were administered the following instructions:

During the most recent university Student Council elections, all students who campaigned were interviewed on which student-related issues were of importance to them. One of the nominated leaders has actually expressed views very different from yours on issues such as the variety of food in the school canteen, and safety and security of the university campus. I will now provide you with a short and anonymous description of this leader, after which you will be required to evaluate this individual. Your responses will be kept strictly confidential, so please do answer as objectively as possible. Thank you.

Upon receiving the instructions, participants were provided with either the concretely or abstractly framed vignette of the Student Council leader, and the LES.

3. Results

After preliminary data screening and analyses, responses across the dependent measure (LES) were averaged to provide an overall score of likeability toward the leader. Assumption testing was also performed, and met for all planned analyses.

3.1. Preliminary analyses

3.1.1. Reliability analysis

A reliability analysis conducted on the 11-item LES indicated high internal consistency with Cronbach's α = .89. All items appeared to be worthy of retention, and correlated with the overall scale.

3.1.2. Factor analysis

To further test for the hypothesized construct of likeability, an Exploratory Factor Analysis (EFA) using principal axis factoring was performed on all items of the LES. In applying Kaiser's criterion, the EFA produced three factors with

eigenvalues above 1, explaining 45.17%, 9.74% and 7.12% of the variance respectively.

Although three factors were extracted, the loadings indicated a better fit for a one-factor solution (refer to Table 1). According to Comrey and Lee [54], loadings of .5 and above are generally considered good loadings. This retention criteria was thus employed when assessing the loadings extracted. All of the loadings on Factor 1 were above the stipulated value of .5, while none of the cross loadings on Factors 2 and 3 were sufficiently large to warrant the removal of items. As such, only Factor 1 was retained, thereby supporting a one-factor solution for likeability.

Table 1. Factor structure for the LES (N = 124)

Items	Factor		
	1	2	3
1. Not likable-Likable	**.63**		
2. Incompetent-Competent	**.67**		
3. Ineffective-Effective	**.73**		
4. Unproductive-Productive	**.74**		
5. Immoral-Moral	**.54**		
6. Dishonest-Honest	**.71**	.49	
7. Untrustworthy-Trustworthy	**.68**	-.44	
8. Disrespectful-Respectful	**.64**	.31	
9. How much do you think you would like this individual?	**.71**	.41	**.54**
10. How much would you want this individual as your leader (i.e. university Student Council member) for another year?	**.67**		
11. How successful do you expect this individual to be as a university Student Council leader?	**.62**	.35	
% of variance explained:	45.17	9.74	7.12

Note. Factor loadings below.3 are not shown. Major loadings for each item appear in bold.

3.1.3. Manipulation check

An independent samples *t*-test was used to investigate if there was a significant difference between participants' ratings of how similar or dissimilar they felt they were compared to the target, across the similar and dissimilar conditions. There was a significant effect of the similarity manipulation, $t(122) = 2.16$, $p = .033$, with participants in the similar condition rating themselves as more similar to the target ($M = 5.60$, $SD = 1.75$), than participants in the dissimilar condition ($M = 4.87$, $SD = 1.98$).

3.1.4. Hypotheses testing

Mean ratings of likeability towards the student leader across the four conditions were computed. In testing for the effects of similarity and construal level on

likeability, a 2 (similarity: similar vs. dissimilar) x 2 (construal level: abstract vs. concrete) between-subjects analysis of variance (ANOVA) was performed.

Hypothesis 1: The 2 x 2 ANOVA yielded a significant main effect of similarity, $F(1, 120) = 10.01$, $p<.01$, partial $\eta^2 = .077$, with participants in the similar condition ($M = 6.94$, $SD = .80$) reporting greater liking for the similar leader than participants in the dissimilar leader condition ($M = 6.42$, $SD = 1.04$).

Hypothesis 2a: There was a significant main effect of construal level, $F(1, 120) = 4.17$, $p<.05$, partial $\eta^2 = .034$, with participants in the concrete conditions ($M = 6.85$, $SD = .86$) reporting greater liking of the leader than participants in the abstract conditions ($M = 6.51$, $SD = 1.03$). However, in testing for hypothesis 2a, an independent samples *t*-test was used to investigate if there was a significant difference between participants' likeability of the leader across construal levels within the similar condition. Even though participants in the concrete condition reported higher likeability ($M = 7.03$, $SD = .85$) than participants in the abstract condition ($M = 6.86$, $SD = .74$), this difference did not approach significance, $t(60) = .84$, $p = .40$.

Hypothesis 2b: An independent samples *t*-test revealed a non-significant effect of construal levels for the dissimilar condition on leader likability, $t(60) = 1.93$, $p = .058$. While participants in the abstract condition rated leader as less likeable ($M = 6.17$, $SD = 1.17$) than participants in the concrete condition ($M = 6.67$, $SD = .84$), this difference was non-significant. Thus, hypothesis 2b was unsupported.

4. Discussion

4.1. Summary of findings

The results obtained from the study are congruent with prior research on how similar attitudes between oneself and another individual tend to elicit liking [13], [19], [55]. In line with hypothesis 1, participants who were informed of a student leader's similar attitudes towards school issues reported significantly greater liking towards the leader, as compared to when the leader possessed dissimilar attitudes. Additionally, it was verified that participants who were presented with similar attitudinal information evaluated themselves as being significantly more alike to the leader, despite the absence of face-to-face interaction. This lends credence to prior research on the critical role played by actual similarity in the formation of interpersonal relations [12], [56].

In contrast to hypothesis 1, results from the study did not support hypotheses 2a and 2b. Although a significant overall effect of construal level on leader likeability was found, this effect did not support the framework of CLT,

i.e. participants reported significantly greater liking for the concrete construal of the student leader, regardless of similarity. This finding was unexpected, as was the lack of an interaction between similarity and construal level. Taken together, both findings suggested that participants' inclination towards the concrete construal of the leader did not appear to be guided by how similar or dissimilar they felt the leader was, compared to them.

There are two potential explanations why CLT was unsupported in the present study. One explanation is that although the vignettes presented identical information on an anonymous, bogus university Student Council leader, the more contextualized behaviours described in the concretely framed vignette could have led participants who happened to be familiar with current Student Council leaders to assume the vignette was describing certain individuals. This illusion of familiarity, in turn, could have translated into a greater preference for the concrete construal of the leader, independent of similarity.

An alternative explanation for the pattern of results observed in hypotheses 2a and 2b is culture. It is a well-documented finding in cross-cultural research that members of Western and East Asian cultures tend to adopt varying styles of cognitive processing [57]. Specifically, Western cultures are more inclined to process information in a global, analytical manner where the target is of primary focus; conversely, East Asian cultures have been found to process information in a local, holistic manner wherein the contextual cues surrounding a target are devoted greater focus [58]. In particular, these differing cognitive processing styles have been attributed to how Western cultures typically perceive an individual as independent from his or her surroundings, while in East Asian cultures, an individual is considered to be fundamentally interdependent on, and embedded in social relationships. As the data was collected from participants residing in Singapore, a Southeast Asian nation, it is possible that participants could have developed a greater receptivity and inclination towards the concrete description of the leader, due to the more contextualized information provided. Further, as the concrete descriptions occasionally articulated the leader's success in and management of social relationships (e.g. "Where social circles are concerned, X is lively and talkative towards others, resulting in X being voted the "most popular student" by peers", and "Some schoolmates have described how X is a good listener who displays concern when they share their personal struggles"), participants could have thus developed a greater liking for the concrete description of the leader, in line with the pervasive tendency for East Asians to emphasize contextual factors when considering a given scenario. Despite this, it would be unwise to assume that CLT would be consistently unsupported in studies with East Asian cultures; rather, future research could

examine how culture potentially mediates the relationship between similarity as a function of social distance, and construal level.

4.2. Implications and contribution

The present study extends the application of the similarity-attraction link [6] to a different domain. First, despite how the similarity-attraction link was investigated in a novel context with CLT as an overarching framework, a significant effect emerged. This finding lends further credence to its theoretical basis, which is well-established and has been substantively supported over the years [12], [17], [18], [23].

Second, results yielded shed light on a previously neglected domain in student leadership. Notably, prior research has predominantly focused on optimizing student leadership outcomes [2], [4], rather than factors influencing students' likeability and evaluations of their leaders. However, as mentioned at the beginning, student leaders typically serve as representatives of the student body; a major responsibility of this role involves being a mouthpiece for the populace, and advocating for student welfare to the school authorities. It follows, then, that students' likeability of their peer leaders would be a crucial determinant in ensuring receptivity towards leadership efforts, particularly since students are commonly voted into leadership by their peers [3]. The present study thus contributes to maximizing student leadership outcomes, by demonstrating how attitudinal similarity between students and their peer leaders plays an instrumental role in fostering greater liking and more positive appraisals of a leader. In applying this finding directly, student leaders could consider developing ways to identify with and relate better with their peers. Research from De Cremer [59] reinforces this importance by demonstrating how when a student leader is successful at forging a sense of collective identity within a group, greater cooperation on the part of students is elicited.

Third, studies exploring the relationship between similarity and leader evaluations have only been conducted with organizational leaders [30], [33]. The findings obtained from this study address this gap in literature by demonstrating how the relationship between attitude similarity and positive leader evaluations holds true with student leaders in universities as well. This suggests that although organizations and schools are structurally different (organizations typically possess a vertical hierarchy, while this is largely absent within a student population), a similar need for consistency of views may prove more critical in leader selection, compared to actual leader competence. In striving towards desired outcomes such as the betterment of student welfare, similarity may serve as a catalyst in promoting positive partnerships between

leaders and students, which could facilitate the mediating role played by leaders in addressing student needs to school authorities.

4.3. Limitations and future research

There are several limitations to the present study. First, although the similarity manipulation was found to be effective, the manipulation instructions were administered by the first author, who was aware of the true nature of the study. As such, a confederate who was uninformed of the study's aims could have administered the instructions to participants instead. This double-blind procedure would likely strengthen the reliability and validity of the manipulation by controlling for possible confounding variables, such as experimenter effects. Second, due to the bogus stranger paradigm being a common and well-established measure in testing for the effects of attitude similarity [19], [60], certain participants could have correctly identified the aims of the study. Future research could thus consider employing alternative designs in testing the pervasiveness of the similarity-attraction link. Third, as the study sought to investigate the effects of similarity with university students' and their leaders, the generalizability of results to other types of student populations (e.g. middle school and high school populations) could be limited. To illustrate, students tend to view their leaders as role models whom they turn to for support during adolescence [61]. Due to the varying experiences of individuals at different developmental stages, studies on similarity and student leadership could thus be conducted with leaders of different age groups (e.g. middle school and high school leaders); findings from such studies would serve to foster a more holistic understanding of student-leader relationships.

While the present study is an early attempt to investigate the effects of similarity on student leader evaluations, subsequent studies in this domain are necessary to validate and expand upon current findings. Due to the multi-faceted nature of similarity, future research can thus assess evaluations of student leaders with perceived similarity, and actual similarity in the form of demographic similarity. In linking such research to universities' increased emphasis on maximizing student leadership outcomes, various performance indicators of leadership could also be incorporated into evaluative measures. Finally, due consideration could be devoted to exploring how other factors such as familiarity or a student leader's academic progress could significantly shape students' receptiveness and likeability towards them.

4.4. Conclusion

In conclusion, the present study lends support to the similarity-attraction link within a student leadership context. Specifically, it was found that attitude similarity leads to more positive evaluations of student leaders, even in the absence of face-to-face interaction. Although similarity does not necessarily alter one's construal of student leaders, its pervasive influence on liking of others illustrates its fundamental role in shaping first impressions and potentially strengthening student-leader relations, which could contribute to leader success. Undeniably, future research in the student leadership domain is necessary in ensuring the relevance and consistency of results amidst an evolving, contemporary leadership landscape. Within the context of leader evaluation, however, it is hoped that future research would shed light upon a potentially dynamic interplay of factors that govern students' evaluations of their leaders, which could in turn aid schools and tertiary institutions in improving leader selections, student-leader exchanges, as well as performance outcomes.

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Counselling in an in-patient set-up: Role in mainstream healthcare

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Introduction: Consultation liaison has been an integral part of psychiatric and psychological practices in public and private healthcare setups in the West for a long time. In India the concept has not proliferated in the manner that practitioners would have expected it to. **Methodology:** This paper examines the impact of providing integrated psychological liaising with major medical specialties of a mainstream, urban, metropolitan based chain of hospitals. The stakeholders' experiences have been evaluated using self-report measures, and the rate of referrals has been examined over a period of three years. **Results:** A quantitative analysis of the data revealed a significant increase in the rate of referrals for psychological counselling, along with high levels of patient and caregiver satisfaction. Further thematic analysis of the stakeholders' experiences has been indicative of significant benefits of the counselling services being evaluated. **Conclusion:** Providing for psychological counselling and support services for patients and their caregivers have been found to improve patient experiences and satisfaction, providing for greater space for intervention for problems relating to mental health.

Keywords: Counselling, Consultation-Liaison, In-Patient Department.

1. Introduction

1.1. Mental health in mainstream healthcare

There is a bidirectional relationship between behaviour and health. Problems of health and illness are inextricably related to physical as well as behavioural and environmental factors, each contributing to problems encountered in the medical management of patients (Schlebusch, 1983). It has been observed that behavioural issues in the healthcare settings can become challenging for primary care providers as well, particularly for those who have high patient volumes, constrained organizational resources and a large proportion of patients with issues beyond basic medical needs (Brown, 2012).

Mental health problems have been found to be common in patients with chronic medical illnesses such as diabetes, arthritis, chronic pain, headache, back and neck problems, and heart disease (Katon, Lin, & Kroenke, 2007). Left

untreated, mental health problems have also been found to be associated with considerable functional impairment, poor adherence to treatment, adverse health behaviours that complicate physical health problems, and excess health care costs (Almeida & Pfaff, 2005; Kessler et al., 2005; Kinnunen, Haukkala, Korhonen, Quiles, Spiro, & Garvey, 2006; Merikangas, Ames, Cui, Stang, Ustun, Von Korff, & Kessler, 2007; Scott et al., 2009). Therefore, it is not surprising that mental health policy making has steadily moved into the mainstream of health care (Frank & Glied, 2007).

1.2. Consultation liaisons with psychological interventions

Psychology plays a significant role in not just promoting both physical and mental health, but also towards the prevention of diseases and aiding in the management of chronic illnesses. Overwhelming evidence indicates that mental health problems are common but often go unrecognized in primary care settings, that they compromise the quality and outcomes of treatment for physical health conditions, and that appropriate mental health treatment can alleviate these impediments to well-being (Corghan & Brown, 2010).

There is evidence that liaison psychiatry can improve outcomes and reduce costs of medical care (NHS Confederation, 2009). Considerable evidence documents the relationship between high-quality primary care and improved health outcomes (Starfield, Shi, and Macinko, 2005). More than 40 trials in diverse primary care settings have demonstrated the efficacy of primary care providers in delivering effective treatment for depressive disorders and improving patient outcomes, when they follow evidence-based protocols, and redesign practice in ways that permit them to identify mental health problems, monitor mental health outcomes, and coordinate treatment more closely with mental health specialists in support of patient management (Bower, Gilbody, Richards, Fletcher & Sutton, 2006). Though not yet extensive, research also demonstrates the value of integrated primary care services for anxiety and substance use (Mertens, Flisher, Satre, & Weisner, 2008; Sullivan, et al., 2007) disorders.

1.3. Review of the role of counselling in in-patient departments

Review of relevant literature below provides evidence supporting the provision of counselling for various in-patient departments within a hospital setting. Adequate substantiation by previous research prompted the initiation of including such services within a mainstream chain of hospitals, acting as the basis of the rationale for the present study.

1.3.1. Critical care and emergency

Admission to critical care can have far-reaching psychological effects because of the distinct environment (Pattison, 2005). Early intra-ICU clinical psychologist interventions have been found to help critically ill trauma patients recover from their stressful experiences (Peris, et al., 2011). Facilitating communication, explaining care and rationalizing interventions, ensuring patients are oriented as to time and place, reassuring patients about transfer, providing patients, where possible, with information about critical care before admission, are all practices that have been found to have a beneficial effect on patient care (Pattison, 2005). Psychosocial support, as well as imagery and relaxation techniques, during intensive care unit (ICU) treatment have been linked to adult patients' psychological and physiological short-term and long-term outcomes (Papathanassoglou, 2010).

1.3.2. Gastroenterology

Early research has found that the psychopathology seen in people with functional gastrointestinal disorders has a strong association with psychological stress, which thereby indicates the role of psychotherapy for such patients (Herschach, Henrich & von Rad, 1999). Psychological treatments can help improve functional gastrointestinal disorder patient outcomes, including cognitive behavioural therapy and hypnosis for irritable bowel syndrome and paediatric functional abdominal pain; cognitive behavioural therapy for functional chest pain; and biofeedback for dyssynergic constipation in adults (Palsson & Whitehead, 2012).

1.3.3. Gynaecology

The association between gynaecological and psychological symptoms like anxiety and depression has been found to be significant in potential hysterectomy patients (Salter, 1985). Psychological support for women has been found to be effective in assisting psychological recovery by relying on sensitive and appropriate patient information (Booth, Beaver, Kitchener, O'Neill, & Farrell, 2005).

1.3.4. Nephrology

Chronic kidney disease is associated with a wide range of stressful situations causing important physical and psychological repercussions, mostly related to demands about emotional impact of renal replacement therapy commencement,

and also including suspicion of depressive episodes, bereavement, anxiety difficulty in decision making processes (García-Llana et al., 2010). In an end-stage renal disease, the access to peritoneal dialysis or haemodialysis, or the choice of renal transplantation, inevitably has an impact on the patient's body image (Muringai, Noble, McGowan, & Channey, 2008). The role of a psychologist has been recognized in the development of a multidisciplinary approach to patient education in the field of nephrology (Idier, Untas, Aquirrezabal, Larroumet, Rascle, & Chauveau, 2013).

1.3.5. Neurology/neurosurgery

The need for integrating or marginalising the role of psychologists' liaisons within the in-patient wards has been acknowledged (Miller & Swartz, 2008). Research has shown the benefits of engaging in psychological treatment for patients with functional neurological symptoms (Howlett, Grünewald, & Khan, 2007).

1.3.6. Oncology and palliative care

Today, effective high quality cancer care is viewed as involving more than just the delivery of anti-cancer therapy, and requires also focusing on the patients' psychosocial coping and distress (Legg, 2011). Emotional distress can occur at any time along the disease trajectory in the field of oncology, defined as a change in thinking, feelings and behaviours that occur in the response to diagnosis, prognosis, treatment and events that occur in the clinical course of cancer (Grimm, 2005). Patients consistently report having significant informational and emotional needs that are often unmet during their cancer journey (Sussman & Baldwin, 2010). Moreover, the psychosocial care of cancer patients has emphasized the recognition of their distress, along with the availability of mental health resources (Muriel et al., 2009).

There is abundant evidence that psychotherapy increases quality of life, decreases emotional distress, assists survivors in changing harmful health behaviours, increases social support, reduces variability in chemotherapy dose, improves immunity and results in higher functional status (Fekete & Fekete, 2012). An integrated liaising with psychologists and psychiatrists by the oncology nurses can enable the early identification of patients at risk for poor adjustment, thereby directing the use of interventions aimed at fostering a sense of optimism and ultimately improving their health related quality of life during survivorship (Mazanec, Daly, Douglas, & Lipson 2010). Specifically in India, the need for a fine grade analysis of psychological processes and interpersonal

dynamics that affect quality of life and well-being of cancer patients and their caregivers has been recognized (Mehrotra, 2008).

1.3.7. Orthopaedics and rheumatology

The nature of pain communication has been empirically investigated to examine the relationship between physical and psychological perspectives in chronic pain (Main & Waddell, 1985). A prospective study reported psychological distress and quality of life of patients after orthopaedic trauma (Bhandari, Busse, Hanson, Leece, Ayeni & Schemitsch, 2008). Depressive disorders, associated with social circumstances as well as the nature of bone pathology, have been found to be common in orthopaedic patients (Husain, Humail, Chaudhry, Rahman, Robinson, & Creed, 2010).

1.3.8. Paediatrics

Psychological interventions in paediatric oncology have shown promise in decreasing distress and improving the adjustment of parents of children with cancer (Pai, Drotar, Zebracki, Moore, & Youngstrom, 2006). The contributions of psychologists to collaborative and integrated care in paediatric cancer have been observed in managing procedural pain, nausea, and other symptoms; understanding and reducing neuropsychological effects; treating children in the context of their families and other systems (social ecology); applying a developmental perspective; identifying competence and vulnerability; integrating psychological knowledge into decision making and other clinical care issues; and facilitating the transition to palliative care and bereavement (Kazak & Noll, 2015).

1.3.9. Surgery

A surgery can be a threatening experience, including multiple stressful components – concerns about one's physical condition, admission to a hospital, anticipation of painful procedures, worries about survival and recovery, and separation from family (Kiecolt-Glaser, Page, Marucha, MacCallum & Glaser, 1998). A study on the effects of preparation for surgery reported that patients demonstrated positive effects from relaxation training and cognitive coping strategies, specifically reporting positive surgery-specific post-operative attitudes and behaviours (Shelley, Pakenham & Frazer, 2009). Psychological evaluation of patients before bariatric surgery is a critical step, not only to identify contraindications for surgery, but also — and more so — to better understand their motivation, readiness, behavioural challenges, and emotional

factors that may impact their coping and adjustment through surgery and the associated lifestyle changes (Snyder, 2009). Research has also established the significance of psychological problems, which could inhibit the positive effects of cosmetic surgery (von Soest, Kvalem, Roald, & Skolleborg, 2007).

1.4. Role of psychological support for caregivers

Caregivers, or "secondary patients," need and deserve protection and guidance, because caregivers are unpaid providers who often need help to learn how to become competent, safe volunteer workers who can better protect their family members (i.e., the care recipients) from harm (Reinhard, Given, Petlick & Bemis, 2008). Family members of patients in intensive care are at increased risk for psychological symptoms, including those of posttraumatic stress disorder, anxiety and depression (McAdam, Fontaine, White, Dracup, & Puntillo, 2012). Research has demonstrated the need for interventions to include coping strategies to help reduce the caregivers' burden, psychological morbidity and their physical symptoms (Guedes & Pereira, 2013).

2. Methodology

2.1. Rationale

The initiative to integrate psychological liaisons within the various medical specialties in a mainstream metropolitan based chain of hospitals, has been made to reach out to the needs of the patients and their caregivers within the hospital. The objective is to observe the impact of providing such psychological support on the patient and caregiver experiences, while also recording the referrals made for these psychological consults by the treating doctors and their medical teams. The rate of referrals could be used as an indicator of the patient and caregiver satisfaction, while also reflecting its influence on the treatment outcomes to be noted by the treating doctors. Therefore, the rationale of this study is to demonstrate the role of such psychological support within the in-patient settings, in order to promote the integration of inter-departmental psychological services with the major medical specialities of the hospital.

2.2. Study sample

The study population consists of 1918 patients, and 1870 caregivers of these patients, randomly selected from the in-patient departments across a mainstream, urban, metropolitan based chain of hospitals in Delhi-NCR over the past three years, where consultation liaison has been given a strong impetus

through the integration of psychological counselling as a service for all major specialties operating within the hospital. These patients had been admitted under the care and supervision of various medical departments, including cardiology, critical care, gastroenterology, gynaecology, internal medicine, nephrology, neurology, oncology, orthopaedics, paediatrics, pulmonology, surgery and urology. The caregivers have been randomly selected from the family members and significant others who were attending to the patients during their hospitalisation, based on their availability and willingness to participate in the study. The service of psychological counselling has been provided to these patients based on the consultation liaising or referrals made by the treating doctors and team of experts.

2.3. Outcome measures

To assess the role of psychological counselling for the sample, the following parameters of outcome variables have been evaluated:

2.3.1. Rate of referrals

The rate of referrals for psychological counselling of in-patients has been evaluated based on the records maintained of the psychologist visits (excluding follow-ups) over the past three years. The number of referrals made by the treating doctors and their team of experts per quarter has been noted, in order to obtain an analysis of the rate of referrals for psychological counselling.

2.3.2. Stakeholders' experiences

The stakeholders' experiences have been evaluated across two phases of assessment, based on a quantitative as well as qualitative analysis of the subjective report of their satisfaction.

2.3.2.1. Patient satisfaction

In the first phase of assessment, a 4-point Likert scale was used on the last day of hospitalisation, to evaluate the patients' levels of satisfaction with the psychological counselling provided to them during their hospitalisation. In the second phase of assessment, an open ended personal interview was conducted with the patient, in order to assess their subjective feedback towards the psychological support provided to them.

2.3.2.2. Caregiver satisfaction

Similar to the measure of patient satisfaction, a 4-point Likert scale was used in the first phase of evaluation, to assess the caregivers' satisfaction with the role of psychological counselling provided to them and the patient during their hospitalisation. In the second phase of assessment, an open ended interview was conducted with the family members and caregivers of the patient, in order to assess their subjective feedback towards the psychological support provided to them throughout the stay at the hospital.

2.3.2.3. Treating medical experts' feedback

This parameter was based on the subjective feedback given by the respective treating and consulting team of medical experts.

2.4. Statistical and analysis methods

The rate of referrals for psychological counselling has been analysed using a scatter plot. In order to examine the association between the progressions of the number of referrals with the time over three years, Pearson's coefficient of correlation has been obtained. A survey based analysis of the outcome measures of the patient and caregiver satisfaction has been made to gain an objective understanding of the impact of providing liaised psychological support for the in-patients and their family members or caregivers. Further to check the independence of the outcome measures of the patients' and caregivers' satisfactions, a Chi-squared test of independence has been analysed.

An in-depth analysis of these outcome measures has been obtained using personalised interviews with the patients and their family members to provide a qualitative insight to the role of psychological counselling in an in-patient set up. In addition, a thematic analysis of the subjective feedback given by the treating medical team of experts has been used to throw light on the various factors underlying the benefits of such psychological services.

3. Results

3.1. Rate of referrals

The scatter plot demonstrating the progression of the rate of referrals made by the treating doctors and their team of experts for each quarterly interval clearly shows an increase over three years (see Figure 1).

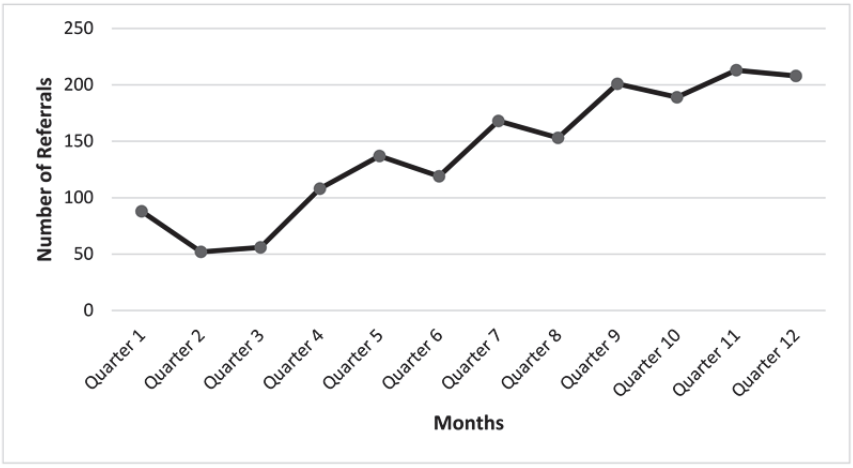

Fig. 1. Scatter plot illustrating rate of referrals for psychological counselling made by treating doctors from 2012-15.

Observing the scatter plot in Figure 1, it can be seen that over the 1692 referrals for psychologists recorded over three years, the mean difference for each quarterly interval is 10. This implies a clear progression in the rate of referrals for psychological visits in the in-patient wards after each quarter of a year. The statistical analysis shows that the number of referrals for psychologists made by the consulting or treating doctors was found to be having a strong and positive correlation with the number of months of the provision of the psychological services for the in-patients (Pearson's coefficient of correlation $r=0.93$, $p<0.05$). This indicates that there was a significant increase in the rate of referrals over a period of three years, measured at quarterly intervals.

3.2. Stakeholders' experiences

3.2.1. Patient satisfaction

The analysis of the patients' responses to the 4-point Likert scale to rate their level of satisfaction with the service of psychological support received by them during their hospitalisation revealed 62.98% of the patients reporting a high level of satisfaction, while 6.98% of the patients did not see any value being added by the psychological visits (see Figure 2).

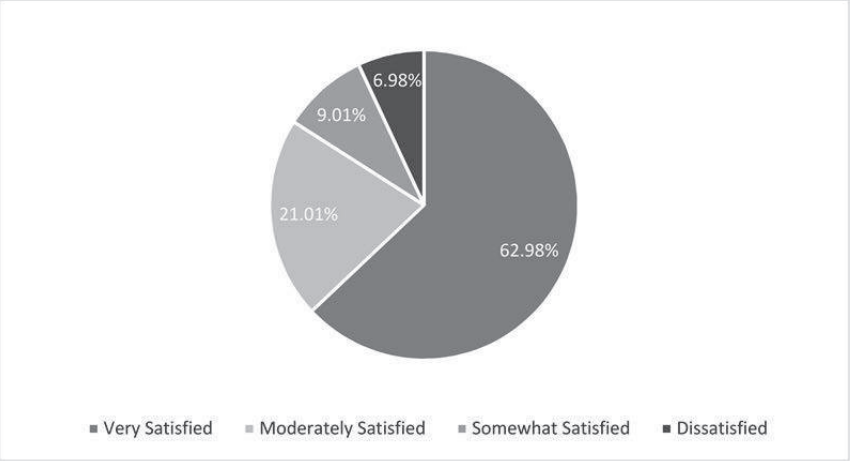

Fig. 2. Pie diagram illustrating patient satisfaction.

In addition, the second phase of assessment with personalised interviews with the patients has been used to gain a qualitative understanding of their experiences.

3.2.1.1. Psycho-education

Psychological support helped the patients gain an understanding of their illness or medical condition, its prognosis, and its implications for the individual. Such psycho-educational interventions give the patients a sense of control as they learn about their medical condition, and thereby reduce the stress associated with it.

3.2.1.2. Catharsis

Regular visits by the psychologists helped the patients find an outlet to vent their emotions, which at times was inhibited with the family members due to worry or concern of adding to their caregiver burden.

3.2.2. Caregiver satisfaction

Similar to the patient satisfaction variable, the caregivers' responses to the 4-point Likert scale to rate their level of satisfaction with the service of psychological support provided to them during their patient's hospitalisation was analysed. The survey analysis revealed 51.97% of the family members and significant others attending to the patients gaining a high level of satisfaction

from the psychological support provided to them during their patient's stay at the hospital. On the other hand, only 4.01% of the caregivers reported being dissatisfied with the psychological services received by them (see Figure 3).

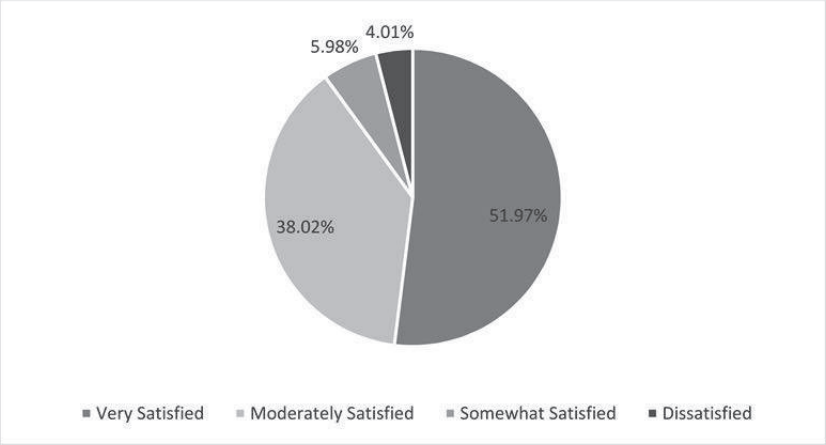

Fig. 3. Pie diagram illustrating caregiver satisfaction.

The second phase of assessment provided a qualitative analysis of the caregivers' experiences of psychological counselling during their patients' hospitalisation.

3.2.2.1. Managing distress

Psychological support helped the caregivers to manage their emotional distress associated with their patient's medical condition, worries about the uncertainty of the future, and concern for the well-being of the patient.

3.2.2.2. Reducing caregiver burden

Regular psychological counselling helped the caregivers reduce their feelings of being overwhelmed, and preventing a burnout with better coping mechanisms to deal with prolonged stress and multiple demands.

3.2.3. Treating medical experts' feedback

The subjective feedback taken from the consulting doctors and their team of medical experts was qualitatively analysed to gain an insight into their satisfaction with the services of psychological counselling provided to the

patients under their care, as well as to these patients' attendants or family members. The following themes were derived from their consolidated feedback:

3.2.3.1. Patient receptivity

The provision of psychological support added a personalised element to the treatment process, and increased the patients' readiness towards the medical advice and procedures.

3.2.3.2. Treatment adherence

Regular psychological counselling helped increase the patients' willingness to comply with the treatment, while reducing their hesitation and resistance.

3.2.3.3. Coping and adjustment to illness or medical condition

Especially in chronic medical conditions, the treating doctors acknowledged the contribution of regular psychological support in helping the psychosocial adjustment and adaptation to the medical condition and it's after care.

3.2.3.4. Resilience building

Besides helping the patients during the hospitalisation, psychological support also empowered them towards an improved psycho-social recovery, preparing them for their lifestyle post treatment.

3.3. Relationship between patient and caregiver satisfaction

In order to examine an association between the levels of satisfaction reported by the patients as well as their caregivers, the Pearson's Chi-squared test of independence has been used. As shown in Table 1, the statistical analysis revealed that the outcome measures of patients' and caregivers' satisfaction were found to be significantly dependent on each other (χ^2 =140.54, p<.05).

Table 1. Test of independence for patient and caregiver satisfaction levels.

	Patient Satisfaction	Caregiver Satisfaction	Total
Very Satisfied	1208 (62.98%)	972 (51.97%)	2180
Moderately Satisfied	403 (21.01%)	711 (38.02%)	1114
Somewhat Satisfied	173 (9.01%)	112 (5.98%)	285
Dissatisfied	134 (6.98%)	75 (4.01%)	209
Total	1918	1870	3788

Note: Pearson chi-square = 140.54, p<.05

Therefore, it can be inferred that the benefits of the psychological counselling provided to the patients also influenced the satisfaction of the experiences of their attending family members and caregivers.

4. Discussion

Most individuals who are visiting a hospital are likely to be experiencing varying levels of distress. Depending on the reason for their visit, whether seeking treatment for their own or any significant other's complaints, visiting someone admitted in the hospital as an attendant or a caregiver, or even for a person going in for a routine or preventive health check-up; there is a high likelihood of any of these individuals to be experiencing some form of anxiety or distress in relation to their health or medical conditions.

Within the cultural context of India, with a greater emphasis on family cohesiveness, it becomes all the more important to integrate psychological liaisons within the mainstream of primary health care. As the psychologists spend time with the patients and their family members, allowing them to talk about their emotions and feelings associated with the medical conditions, they experience a more personalised and integrated approach to their experience and customer satisfaction during the hospitalisation.

As the above findings indicated, one of the most significant role of psychological counselling for patients admitted in the care of any department of the hospital is of psycho-education. Therefore, psycho-educational factors play a significant role in influencing the patient's experience and interpretation of symptoms. Through this process, the psychologist helps the patients as well as their attendants or caregivers to develop a clear understanding of their illness, and its impact on the individual and the family members' life and functioning.

In consideration of the bio-psychosocial models of illnesses, psychological interventions focus on the psychosocial factors influencing the patients' adjustment and adaptation to chronic medical conditions. Moreover, most medical conditions requiring hospitalisation would be likely to impact the patient's socio-occupational functioning, at least temporarily. During such times, the patients tend to feel dependent, and hence require the psychological support from a professional to help them find a safe and non-threatening outlet for their frustrations and emotions. Such psychological services provided to in-patients thereby help them modify their illness behaviour, and therefore have a positive influence on the treatment outcomes.

Often the stress induced by the diagnoses of certain medical conditions in itself becomes very difficult to manage, and psychological interventions allow the patient as well as their family members some time to prepare themselves.

While breaking the news of a diagnosis of a malignancy or HIV positive is inevitably devastating, psychologists help the patient and the caregivers deal with their apprehensions associated with certain diagnoses, preparing the patient and the family members, and therefore helping them to accept the medical condition, in the presence of the specializing expert from the medical field.

In addition, psychological support and interventions help patients as well as their caregivers to overcome the anxiety induced due to the prognosis, depending on the course or length of the treatment, chronic medications or therapy. Regular psychological counselling helps in coping with the social, emotional and psychological changes associated with the organic causes, secondary medical conditions, or even primarily psychological factors associated with the medical conditions.

Often, the discomfort caused during the illness or medical condition makes the patient increasingly irritable, and the caregivers and family members also at times find it difficult to attend to the needs of the patient. Psychological support for such patients has significant benefits in helping the patients release their emotions, and reduce their frustrations.

Over a period of time of being hospitalized, patients tend to experience a loss of vitality, as they become increasingly dependent on others. Such restrictions not only add to the patients' frustration, but also reduce their motivation to adapt to the requirements of the medical condition, thereby adversely influencing their treatment adherence.

Surgical procedures are often associated with a variety of distressing experiences, both for the patients as well as their families. Prior to a surgery, there are multiple apprehensions concerning the medical procedure, its associated risks or complications, and worries about survival and recovery, both for the patients and caregivers alike. Post-operative counselling also plays a significant role in preparing the patient to adapt to the needs of after care, while helping in their lifestyle management, acceptance and motivating them towards adjustments post-surgery. Psychological support plays a significant role in helping the patient understand their surgery and prepare themselves for its associated lifestyle changes.

The role of psychological counselling is significantly observed in cases of patient panic, during an emergency or in the critical care unit. Not just for the patients themselves, but more so for their caregivers, who tend to be burdened by the concern for the patient, with additional factors like uncertainty of health increasing their psychological distress. Working towards providing optimal psychological care has a positive effect on patients' psychological recovery and may also help physical recuperation after critical care.

For terminally ill patients or patients with chronic diseases, the need for a psychological component to be integrated within their treatment plan is of insurmountable importance. As such patients begin to realize the prognosis and chronic nature of their treatment, their levels of psychological and emotional distress increase. Especially for patients in palliative care, the need to instil a hope towards recovery is an important component. With the help of a psychologist, such patients could be provided with a medium to reflect on their feelings, and to redefine and redevelop their goals based on realistic expectations. Such psychological and psychosocial support can help the patients build their motivation towards more attainable goals, with their hope being fostered not on a guarantee of becoming disease free, but to try and develop a better quality of life. Moreover, the role of psychology in bereavement is undeniable, as the interventions aim at helping the patients deal with the emotions associated with an organ loss and adjust to the changes in their body image. Grief counselling plays a significant role in providing support to the family members and caregivers of patients to grieve the loss of their near and dear ones.

The relatives or significant others who are attending to the needs of the patient during their hospitalisation also undergo immense stress, and are vulnerable to experiencing an exhaustion or burnout. In addition to bearing the responsible for fulfilling the needs of the patient, their concerns and worries about the patient's well-being increases their need for psychological support.

Many a times, the patients would consider themselves to be a burden for their family members and caregivers, and in efforts to reduce this burden they would feel inhibited in sharing their inner most thoughts, feelings and concerns with them. A psychologist's visit often serves as a source for the patients to cathartically express themselves in a safe and non-threatening environment.

As the benefits of regular psychological counselling in an in-patients set up are reflected in the patient and caregiver satisfaction, the treating doctors and team of medical experts are also able to identify its influence on the various treatment outcomes. As the qualitative analysis of their feedback revealed, regular psychological interventions are helpful in increasing the patient's receptivity and compliance towards the treatment, helping them overcome their resistance. Such an approach also aids in building their resilience to recuperate post their discharge from the hospital, with improved coping mechanisms to adapt their lifestyle for their personal, socio-occupational functioning and psychological well-being.

5. Implications

This study emphasizes the need for mental health professionals to have an integrated liaising within a primary healthcare system, in order to improve the patients', caregivers' as well as treating doctors' experiences, while also promoting the provision of mental health services. Such findings implicate the utilisation of such psychological interventions towards providing a potentially greater space for intervention for problems relating to mental health within mainstream healthcare settings. The effective utilisation of integrated psychological services within the in-patient settings can not only be instrumental in augmenting the process of patient's recovery, but can also add significant value to the quality of the patient and family's experience during the hospitalisation.

Future research can focus on examining the role of psychological support for in-patients of various specialties, to highlight the salient benefits of such services within individual department of the hospital as well. Despite the abundance of research evidence indicating the beneficial role of psychological liaisons for various departments of a mainstream healthcare setting, there is a need to examine the efficacy of inclusive psychological counselling services, being provided to the in-patients. This would allow a shift in emphasis on the benefits of counselling provided to the patients on a regular basis during their admission in the hospital. Moreover, future research can highlight the role of psychology in improving the resilience and treatment outcomes for patients (and their families) within specific departments of mainstream healthcare.

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Exploring the relationship between abstract mindedness, self-regulation and prosocial behaviour

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Previous research has established abstract mindedness as one of the various factors which encourage prosocial behaviour in individuals. This study explored the relationship between abstract mindedness (*vs.* concrete mindedness) and prosocial behaviour, specifically studying self-regulation as an intervening variable for this relationship among 160 undergraduates (M_{age} = 22.24 years). It was hypothesized that self-regulation would mediate the relationship between mindset condition (abstract *vs.* concrete) and prosocial behaviour. Participants completed a series of mindset activation tasks, a self-regulation measure and a prosocial behaviour measure. The results revealed that as compared to concrete mindedness, abstract mindedness resulted in significantly greater prosocial behaviour in participants. However, self-regulation did not appear to mediate the relationship between mindset condition and prosocial behaviour; therefore, rejecting the intervening role of self-regulation in this relationship. The present findings reaffirm that abstract mindedness enhances prosocial behaviour and highlight the need for future research to further examine the underlying constructs of this relationship.

Keywords: Abstract Mindedness, Concrete Mindedness, Self-Regulation, Prosocial Behaviour.

1. Introduction

In recent years, research has placed a great amount of emphasis on the factors contributing to the enhancement of prosocial behaviour (e.g. [1], [2], [3], [4], [5]). With prosocial behaviour defined as "voluntary, intentional behaviour that results in benefits for another" [6], there is no denying that prosocial behaviour plays a significant role in our everyday lives. Generally, prosocial behaviour is a

crucial determinant of social competence [7] and it is an important feature which determines the nature of interactions between individuals [8].

Previous research has established that abstract mindedness (*vs.* concrete mindedness) encourages prosocial behaviour [3]. Furthermore, prosocial behaviour has been associated with self-regulation [7], [9], [10]. Moreover, abstract mindedness has been shown to result in greater self-regulation [11], [12]. Conversely, studies have demonstrated that abstract mindedness may lead to lower self-regulation [13], [14]; hence, presenting conflicting findings.

Altogether, the findings of previous research imply that self-regulation may be an underlying construct of the relationship between abstract mindedness and prosocial behaviour. While research on prosocial behaviour has been devoted to determining the driving forces of prosocial behaviour, little has been given to the research of the underlying constructs of the relationship between the determinants of prosocial behaviour and prosocial behaviour itself. Therefore, the present study aims to explore the relationship between abstract mindedness, self-regulation and prosocial behaviour. In particular, self-regulation will be studied as a mediator for the relationship between the types of mindset (abstract *vs.* concrete) engaged in and prosocial behaviour.

1.1. Mindsets, prosocial behaviour and self-regulation

1.1.1. Abstract and concrete mindsets

Engaging in either an abstract or a concrete mindset determines the manner in which one construes information [15], [16]. Based on the construal level theory (CLT), activation of an abstract mindset results in the use of high-level construals – abstract and decontextualized depictions of objects or events [16]. Abstract mindsets have been defined as "cognitive processes that are broad, lead to decontextualized information processing, and are more inclusive of information that is not immediately available" [17]. In contrast, defined as "cognitive procedures that are bounded by the context and include information structures present in the immediate situation" [17], concrete mindsets involve the use of low-level construals – concrete and contextualized representations of objects or events.

Evidently, Trope and Liberman [18] found that the type of mindsets individuals engage in affects the way they appraise objects. Specifically, an abstract mindset focuses on fundamental features that are constant across different situations while a concrete mindset gives attention to specific characteristics of that particular situation. This highlights that the type of mindset individuals engage in affects how information is construed.

1.1.2. Abstract mindedness and prosocial behaviour

Abstract mindedness has been shown to facilitate prosocial behaviour in individuals [19], [3]. In Singh and Teoh's [3] study, it was found that as compared to participants who were primed with a concrete mindset, participants who were primed with an abstract mindset obtained greater mean scores on the measure determining prosocial behaviour; thus demonstrating greater prosocial behaviour. This is congruent with the findings of Agerström and Björklund's [19] study, where abstract mindedness was shown to enhance moral concerns – concerns one has for others – of individuals. This led to the increase in the willingness of individuals to help, therefore demonstrating greater prosocial behaviour. Consequently, these imply that abstract mindedness results in the enhancement of prosocial behaviour.

Additionally, the results obtained in Agerström and Björklund [19], and Singh and Teoh's [3] study can be explained in terms of the availability of values. According to the CLT, values are abstract and high-level constructs which are broad and decontextualized [20]. Indeed, Torelli and Kaikati [21] found that when in an abstract mindset as opposed to a concrete mindset, values are more salient – more readily applied. Therefore, given that values are significant determinants of prosocial behaviour [22]; Torelli and Kaikati's [21] findings explain why abstract mindedness results in greater prosocial behaviour. Although, abstract mindedness has been found to facilitate prosocial behaviour, there appears to be a lack of existing research on the underlying constructs influencing this relationship. Hence, the present study explores this relationship and its intervening variable.

1.1.3. Self-regulation

Self-regulation has been defined as a "process by which an individual initiates, modulates, maintains, or coordinates internal emotional states and behavioural expressions of these states of emotional arousal" [23]. Self-regulation is the process through which individuals restrain unnecessary impulses [24]. Existing research on self-regulation provides indirect support for self-regulation to act as an underlying construct of the effect of abstract mindedness on prosocial behaviour [7], [11], [12], [10].

1.1.3.1. Self-regulation and prosocial behaviour

Self-regulation has constantly been linked to prosocial behaviour [7], [25], [26], [27], [28]. Successful control of one's feelings, processes involving attention and behaviours is essential for one to engage in helping behaviour [29]. Indeed,

self-regulation has been shown to be positively associated with prosocial behaviour [7]. Carlo, Crockett, Wolff and Beal [7] found that adolescents with greater levels of self-regulation demonstrated greater prosocial behaviour. This is consistent with the findings of Cumberland-Li, Eisenberg, and Reiser [9], and Oettingen, Stephens, Mayer, and Brinkmann [10].

Similarly, Oettingen, Stephens, Mayer, and Brinkman [10] found that engaging in self-regulation facilitated prosocial behaviour. In the study [10], the utilisation of a self-regulation strategy was shown to enhance prosocial behaviour in individuals. The results revealed that participants who engaged in the self-regulation strategy were more willing to provide help, indicating greater prosocial tendency [10]. Thus, it appears that engaging in self-regulation results in greater prosocial behaviour. In sum, the findings of Carlo, Crockett, Wolff, and Beal [7], and Oettingen et al. [10] suggest that self-regulation is predictive of prosocial behaviour.

1.1.3.2. Abstract mindedness and self-regulation

Apart from being associated with prosocial behaviour, self-regulation has been associated with abstract mindedness as well. Abstract mindedness has been found to result in greater self-control [12], where self-control involves "sacrificing short-term outcomes in favour of long-term outcomes" [12]. Being a constituent of self-regulation [11], self-control is indicative of self-regulation [30]. Hence, greater self-control implies greater self-regulation. According to Fujita and Carnevale [31], abstract mindedness gives rise to the awareness of more general and goal related implications of the choices individuals make. Thus, abstract mindedness aids individuals in resisting temptations by giving greater importance to broader and important goals. In turn, this increases self-control and self-regulation [11]. In contrast, a concrete mindset assigns greater importance to secondary and minor features of the choices made. This might result in individuals giving in to temptations, hence lacking self-control and self-regulation.

Evidently, Fujita, Trope, Liberman, and Levin-Sagi's [12] study exemplified that abstract mindedness (*vs.* concrete mindedness) resulted in greater self-control; where self-control was determined by the participants' positive and negative evaluations of both temptation and non-temptation related words. Greater negative evaluation of temptation words indicated greater self-control. The findings are consistent with those of Chiou, Wu, and Chang [11], and Fujita and Sasota [32]. Considering that self-control is indicative of self-regulation [30]; the findings of Fujita et al. [12] suggest that abstract mindedness results in greater self-regulation.

Conversely, there have been studies which have found otherwise. McCrea, Liberman, Trope, and Sherman [13] found that as compared to abstract mindedness, engaging in a concrete mindset resulted in lesser procrastination; where procrastination is suggestive of lower levels of self-control and self-regulation [33], [34], [35]. This suggests that concrete mindedness reduces procrastination, therefore indicating the presence of greater self-control and self-regulation. McCrea et al. [13] proposed that concrete mindedness causes individuals to focus on the present situation, hence reducing procrastination. This in turn increases self-regulation. In line with the findings of McCrea et al.[13], Watkins, Moberly, and Moulds [14] found that concrete mindedness resulted in greater self-control and self-regulation. As such, these findings [13], [14] present evidence against the notion of abstract mindedness resulting in greater self-control; therefore increasing self-regulation. This is inconsistent with the findings of Chiou, Wu, and Chang [11], Fujita and Sasota [32], and Fujita, Trope, Liberman, and Levin-Sagi [12]. Consequently, there are conflicting views on the effect of mindset condition on self-regulation.

2. The Present Study

Based on the above mentioned reviews, it is apparent that abstract mindedness encourages prosocial behaviour; wherein self-regulation is associated with both abstract mindedness and prosocial behaviour. Accordingly, this study aims to explore the relationship between abstract mindedness, self-regulation and prosocial behaviour, specifically studying self-regulation as a mediator of the relationship between the type of mindset (abstract *vs.* concrete) activated and prosocial behaviour. The following hypotheses were tested:

Hypothesis 1: Activation of an abstract mindset will result in significantly greater prosocial behaviour than activation of a concrete mindset.

Hypothesis 2: Activation of an abstract mindset will result in significantly greater levels of self-regulation than activation of a concrete mindset.

Hypothesis 3: Self-regulation will significantly predict prosocial behaviour. In particular, high levels of self-regulation will be predictive of high levels of prosocial behaviour.

Hypothesis 4: Self-regulation will mediate the relationship between mindset condition (abstract vs. concrete) and prosocial behaviour (Refer to Figure 1).

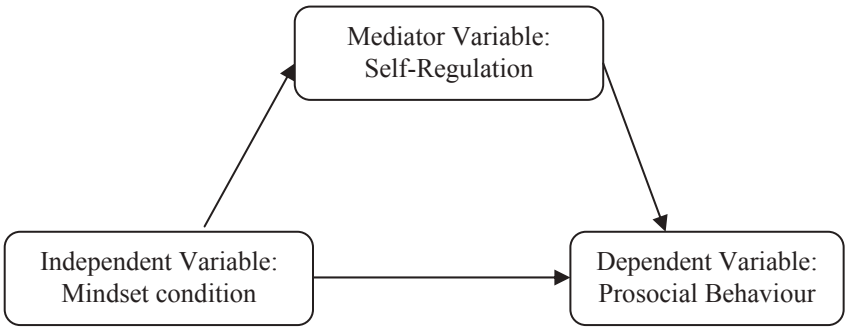

Fig. 1. Self-regulation as a mediator of the relationship between mindset condition and prosocial behaviour.

3. Methodology

3.1. Participants and design

A total of 160 undergraduates (60 males and 100 females) from James Cook University (Singapore), with an age range of 18 to 40 years (M_{age} = 22.24, SD_{age} = 2.96), participated in the study. The participants were randomly assigned to one of the 2 (Mindset: abstract vs. concrete) x 2 [Order of response measurement (ORM): ORM 1 (Self-regulation → Prosocial behaviour) vs. ORM 2 (Prosocial behaviour → Self-regulation)] between subject experimental conditions (n = 40 per condition). ORM was included as an independent variable so as to ensure that carryover effects could be accounted for. Self-regulation was studied as a mediator variable. Participants participated in the study in exchange of research participation credit points or on a voluntary basis.

3.2. Measures

3.2.1. Mindset activation tasks

The three following tasks – anagram task, sentence completion task and construal level priming task – were used to activate either an abstract or a concrete mindset in participants (Refer to Appendix A).

The anagram task was adapted from Singh and Teoh [3]. It consisted of five jumbled up words. Participants in the abstract condition and concrete condition were presented with abstract jumbled up words and concrete jumbled up words respectively. Participants were instructed to rearrange the alphabets to form a word. For instance, participants in the concrete condition were presented with words such as ‘Flower’ and ‘Trophy’, which were jumbled up as ‘erFlow’ and

'ophyTr' respectively. Conversely, participants in the abstract condition were given words such as 'Freedom' and 'Love', which were jumbled up as 'omFreed' and 'veLo' respectively.

Adapted from Fujita, Trope, Liberman and Levin-Sagi [12], the sentence completion task was used to manipulate the construal levels of participants. Participants were presented with a total of five words – dog, bird, singer, berries and pasta. Participants in the abstract mindset condition were required to provide superordinate categories in response to the question, "____ is an example of what?" As for the concrete mindset condition, participants were instructed to provide subordinate exemplars in response to the question, "An example of ____ is what?" For example, when presented with the word 'Dog', participants in the abstract condition could respond with the word 'Pet' while participants in the concrete condition could respond with the word 'Husky'.

The construal level priming task was adapted from Freitas, Gollwitzer and Trope [36], and Singh and Teoh [3]. Participants in the concrete mindset condition and the abstract mindset condition were presented with a series of "how" and "why" questions respectively. The questions were targeted towards the behaviour "Exercise and have a balanced diet". Participants were required to fill in their responses in boxes by considering the behaviour.

Lastly, the manipulation check task (Refer to Appendix B) comprised of items from the Thinking Styles Inventory [37]. The task consisted of eight items and used a 7-point Likert scale, ranging from 1 = *'strongly disagree'* to 7 = *'strongly agree'*. Odd-numbered items were positively worded while even-numbered items were negatively worded. All of the items measured abstract thinking. The total score was determined by adding up the scores of the positively worded items and the reverse scores of the negatively worded items. The average scores were used to determine if participants were successfully primed with the respective mindsets. The average scores were calculated by dividing the total score obtained by the total number of items. A greater average score indicated greater abstract thinking.

3.2.2. Self-regulation measure

The self-regulation measure (Refer to Appendix C) is patterned after the Self-Regulation Questionnaire (SRQ) [38] and the Adolescent Self-Regulatory Inventory (ASRI) [27]. Both the SRQ and ASRI have been validated and have been shown to have acceptable psychometric properties [38], [27]. A total of 16 items were developed for the self-regulation questionnaire. Items 1, 2, 4, 7, 8, 13, 15 and 16 were the target items, while the remaining items were filler items. All of the items used a 7-point Likert scale, ranging from 1 = *'strongly disagree'*

to 7 = *'strongly agree'*. Items included both positively worded and negatively worded items. Items 3, 5, 8, 10, 11, 12 and 14 were negatively worded, while the remaining items were positively worded. Self-regulation was determined using the participant's average score derived from the total score of the measure. The total score of the self-regulation measure was obtained by adding up the scores of all target items, providing a range from 8 to 56. The total score obtained was then divided by the total number of target items (eight items) to compute an average score (possible range: 1 to 7), such that higher scores represent greater self-regulation. In the current study, the Cronbach's α for the eight-item self-regulation measure (eight target items) was .74.

3.2.3. Prosocial behaviour measure

Adapted from Singh and Teoh [3], the prosocial behaviour measure comprised of eight items (Refer to Appendix D); all of which utilized a 7-point Likert Scale ranging from 1 (least interested) to 7 (most interested). The first seven items were targeted at surveying the outlook of participants towards a variety of causes, such as, "Environmental protection" and "Prevention of cruelty to animals". These items (items 1 to 7) were used as filler items. Only the score of the last item was used to determine the dependent variable of prosocial behaviour. The item of interest is as follows: "Should any of the causes you indicated interest in is selected to be adopted by the social service club, how likely would you be interested in participating in the activities organized?" Thus, the total scores obtained for this item ranged from 1 to 7, where higher scores indicated greater prosocial behaviour.

3.2.4. Demographics form

The demographics form included items about age and gender (Refer to Appendix E).

4. Procedure

Ethical clearance was obtained from the Human Resource Ethics Committee of James Cook University. The study was conducted in classrooms located at James Cook University, Singapore. Upon arrival, participants were presented with an information sheet and an informed consent form. The information sheet provided participants with the necessary information about the current study. By completing the informed consent form, participants indicated their consent to participate in the current study. Thereafter, participants were randomly assigned to one of the four experimental conditions (i.e. Condition 1: abstract mindset and

ORM 1, Condition 2: abstract mindset and ORM 2, Condition 3: concrete mindset and ORM 1, Condition 4: concrete mindset and ORM 2). Participants were presented with the experimental booklet consisting of the following tasks: anagram task, sentence completion task, construal level priming task, and manipulation check task.

Once participants had completed the above mentioned tasks, participants were required to complete the self-regulation measure and the prosocial behaviour measure. Participants in the ORM 1 condition completed the self-regulation measure first, followed by the prosocial behaviour measure. In contrast, participants in the ORM 2 condition completed the prosocial behaviour measure first, followed by the self-regulation measure. Following the completion of both measures, participants were required to complete the demographics form. Lastly, participants were debriefed on the purpose of the study and were thanked for their participation. Each of the sessions took approximately 20 minutes.

5. Results

SPSS version 22.0 was used to analyse the data collected. All statistical tests were conducted as two-tailed tests with an alpha value set at .05.

5.1. Preliminary analyses

Initial data screening revealed no missing data. An Exploratory Factor Analysis (EFA) was conducted on the eight items (i.e. target items) of the self-regulation measure developed for this study, indicating that all eight items loaded onto a single factor.[1] The Cronbach's α for the eight-item self-regulation questionnaire is .74.

The fundamental assumptions of normality, linearity, independence of errors, absence of multicollinearity and singularity, homogeneity of variance and homoscedasticity were satisfied with no serious violations. Inspection of the box plots revealed no univariate outliers. Based on the Mahalanobis distance with $p < .001$ derived from the key variables (prosocial behaviour and self-regulation),

[1] An EFA using Principal Axis Factoring (PAF) was performed. The Kaiser-Meyer-Olkin (KMO) value was acceptable at .80 and all of the KMO values for each value were above .75. Barlett's Test of Sphericity reached statistical significance, χ^2 (28) = 242.85; $p < .001$, supporting the factorability of the correlation matrix. PAF revealed one component with eigenvalue greater than 1, whereby component one explained 30.27% of the variance. This was supported by the scree plot which revealed a one-factor solution. This suggests that component one reflects self-regulation. As recommended by Field [39], all factor loadings were above .30. The factor loadings are presented in Table F1 of Appendix F.

no multivariate outliers were identified. Hence, the data was deemed appropriate for the respective analyses mentioned below. Inspection of the mean scores for the manipulation check task revealed that the abstract mindset condition (M = 3.97, SD = .75) obtained a slightly higher mean score than the concrete mindset condition (M = 3.86, SD = .74). Thus, the abstract mindset condition appears to demonstrate greater abstract thinking than the concrete mindset condition.

5.2. Hypothesis testing

5.2.1. Hypothesis 1

A two-way between-groups analysis of variance (ANOVA) was conducted to investigate the effect of mindset condition and ORM on prosocial behaviour. There was a statistically significant main effect of mindset condition on prosocial behaviour, F (1, 156) = 33.49, $p < .001$, $\eta^2_{partial} = .18$, indicating that the mean prosocial behaviour score for the abstract mindset condition (M = 5.99, SD = .934) was significantly greater than the concrete mindset condition (M = 4.93, SD = 1.34). Thus, supporting Hypothesis 1, mindset condition appears to have a significant effect on prosocial behaviour. The main effect of ORM on prosocial behaviour was not statistically significant, F (1, 156) = .005, p = .946. Hence, ORM does not appear to have an effect on prosocial behaviour, indicating no significant carryover effects. The interaction effect between the mindset condition and ORM was not statistically significant, F (1, 156) = .116, p = .734.

5.2.2. Hypothesis 2

To examine the impact of mindset condition on self-regulation, a one-way between-groups ANOVA was performed. The analysis revealed that the effect of mindset condition on self-regulation was not statistically significant, F (1, 158) = 1.35, p = .248. Therefore, incongruent with Hypothesis 2, mindset condition does not appear to have a significant effect on self-regulation. However, inspection of the means revealed that the abstract mindset condition (M = 5.03, SD = .83) demonstrated slightly greater levels of self-regulation than the concrete mindset condition (M = 4.88, SD = .82).

5.2.3. Hypothesis 3

A simple linear regression analysis was conducted to assess the ability of self-regulation scores in predicting prosocial behaviour. Contrary to Hypothesis 3, the analysis revealed that self-regulation did not significantly predict prosocial

behaviour scores, $\beta = .089$, F (1, 158) = 1.26, $p = .262$, $R^2 = .01$. There was a weak, positive and insignificant correlation between self-regulation and prosocial behaviour, $r = .09$, $n = 160$, $p = .131$.

5.2.4. Hypothesis 4

To test if self-regulation would mediate the relationship between mindset condition and prosocial behaviour, Baron and Kenny's [40] four-step approach was used. According to Baron and Kenny [40], for mediation to occur, four steps have to be satisfied: (1) The independent variable (IV) should significantly predict the dependent variable (DV), (2) The IV should significantly predict the mediator variable (MV), (3) The MV should significantly predict the DV, and (4) The effect of the IV on the DV should decrease (i.e. Partial mediation) or the IV should have no effect on the DV (i.e. Full mediation) when the MV is included. Since Hypotheses 2 and 3 were not supported – indicating that steps (2) and (3) were not satisfied – based on Baron and Kenny's approach for mediation, mediation cannot occur; thus not supporting Hypothesis 4.[2]

6. Discussion

This study aimed to explore the relationship between abstract mindedness, self-regulation and prosocial behaviour, particularly determining if self-regulation could mediate the relationship between mindset condition and prosocial behaviour. The findings of the current study indicate that mindset condition had a significant effect on prosocial behaviour but did not significantly affect self-regulation. Also, self-regulation did not significantly predict prosocial behaviour. In sum, the findings reject the mediating role of self-regulation in the relationship between mindset condition and prosocial behaviour.

Congruent with Hypothesis 1, abstract mindedness resulted in significantly greater prosocial behaviour than concrete mindedness. Consistent with the findings of Singh and Teoh [3], this suggests that abstract mindedness enhances prosocial behaviour in individuals. Drawing upon the findings of Torelli and Kaikati [21], it is likely that the activation of an abstract mindset resulted in an increase in the availability of values – important determinants of prosocial behaviour [22]. It can thus be expected that the increased availability of values

[2] To confirm that mediation cannot occur, several regression analyses were conducted. A Sobel test and a bootstrap analysis were performed using the SPSS macro, PROCESS [41]. The Sobel test failed to yield a significant indirect effect of self-regulation; $p = .629$. This is consistent with a bootstrap analysis (m = 1000); 95% CI [-.11, .01]. Therefore, self-regulation does not appear to mediate the relationship between mindset condition and prosocial behaviour, not supporting hypothesis four. The summary of the mediation analyses and the tested mediation model are presented in Table G1 and Figure G1 respectively in Appendix G.

resulted in greater prosocial behaviour. Furthermore, it has been shown that abstract mindedness amplifies moral concerns in individuals [19]. That is, individuals in an abstract mindset are likely to be more concern for others rather than themselves. As such, in line with previous findings, the activation of an abstract mindset was likely to have enhanced the moral concerns of individuals, which then could have accounted for the higher levels of prosocial behaviour exhibited by these individuals. This explains why abstract mindedness enhanced prosocial behaviour in the current study.

Opposing to Hypothesis 2, the results showed that mindset condition did not appear to have a significant effect on self-regulation. This is at odds with previous studies [11], [12]; which have shown abstract mindedness to result in greater self-control. A possible reason for the discrepancy in results might be that past research has predominantly examined the effect of mindset condition on self-control. However, in the current study, self-regulation was studied in place of self-control. Hence, it is possible that mindset condition does not affect self-regulation the way it affects self-control; despite the fact that self-control is indicative of self-regulation [30].

Nonetheless, it is worth noting that participants in the abstract condition obtained slightly higher self-regulation scores than participants in the concrete condition. This might be due to the notion that abstract mindedness causes one to assign greater weight to broader and significant goals, enabling them to resist temptations; therefore increasing self-regulation [11]. In contrast, concrete mindedness results in individuals giving more importance to the secondary aspects of the choices made. Thus, they tend to succumb to temptations, demonstrating lower levels of self-regulation [11]. This explains the scores observed in the present study. While this is consistent with the majority of previous studies [11], [32], [12], this is inconsistent with a couple of studies which suggest that when compared to abstract mindedness, concrete mindedness results in greater self-regulation [13], [14]. Therefore, the findings of the present study present evidence against the concept of concrete mindsets resulting in greater self-regulation.

Surprisingly, self-regulation did not significantly predict prosocial behaviour. Incongruent with Hypothesis 3, greater levels of self-regulation did not result in significantly greater prosocial behaviour. This is incoherent with the findings of Oettingen, Stephens, Mayer, and Brinkmann [10], where engaging in self-regulation was shown to result in greater prosocial behaviour. The findings of the current study revealed that self-regulation had a weak, positive and insignificant correlation with prosocial behaviour. Although the direction of the relationship is in line with previous studies [7], [9], [10], the relationship is too

small and insignificant to derive at any specific conclusions. A probable explanation for the observed findings in the current study might be that previous research has mostly focused on the relationship between self-regulation and prosocial behaviour among adolescents [7], [9], [27]. However, the current study examined the effect of self-regulation on prosocial behaviour among adults. Thus, it is possible that self-regulation is not a crucial predictor of prosocial behaviour among adults, given that adolescence is a crucial age period for the development and enhancement of prosocial behaviour [42], [43].

Furthermore, according to Kohlberg's [44] theory of moral development, the moral reasoning of adults develop to a greater extent than that of adolescents. Given that and considering that both self-regulation and prosocial behaviour are associated with one's moral development [45]; it is seemingly possible that in adults both of these constructs might be assimilated with one another, while in adolescents these constructs might still be distinct constructs. Since this study targeted adults and not adolescents, it might explain why self-regulation did not significantly predict prosocial behaviour. This might also explain why, incongruent with Hypothesis 4, self-regulation did not appear to mediate the relationship between mindset condition and prosocial behaviour.

Another potential reason for the lack of support for Hypothesis 4 might be that the general construct of self-regulation might not be a mediator for the relationship between the mindset condition and prosocial behaviour. Instead, it could be that the various components of self-regulation – as identified by Baumeister and Vohs [24] – affect the relationship between mindset condition and prosocial behaviour differently. For instance, some of the components of self-regulation might mediate this relationship while some might not. Therefore, considering that self-regulation was examined generally in the current study, the results suggest that the general construct of self-regulation did not mediate the relationship between mindset condition and prosocial behaviour.

The findings of the current study imply that abstract mindedness plays a crucial role in enhancing prosocial behaviour in individuals, therefore reaffirming the findings of previous research. Another significant implication of the current study is that self-regulation does not appear to mediate the relationship between mindset condition and prosocial behaviour. These findings have significant implications for the society as it contributes to the knowledge on how prosocial behaviour can be enhanced among individuals. Furthermore, the current study is the first to have studied self-regulation as a mediator of the relationship between mindset condition and prosocial behaviour. Although self-regulation was not established as a mediator for this relationship in the current

study, it adds value to existing research by demonstrating that self-regulation might not play a significant role in enhancing prosocial behaviour in adults.

6.1. Limitations and future directions

Although the results of this study are partly consistent with previous findings [19], [11], [32], [12], [3]; the insignificant results and inconsistencies with previous studies might be due to the limitations of the present study. Firstly, self-regulation was assessed generally – the various facets of self-regulation were not examined in the present study. This limits the interpretability of the results, by not allowing the determination of the differing effects of the various components of self-regulation on the relationship between abstract mindedness and prosocial behaviour. Therefore, future research can study the various facets of self-regulation as mediators of this relationship. This would determine if the various aspects of self-regulation – as determined by Baumeister and Vohs [24] – influence the relationship between abstract mindedness and prosocial behaviour differently.

Lastly, the sample used in the present study consisted of only undergraduates. Thus, limiting the external validity of the study, the sample used is not representative of the general population. Additionally, future research can further examine the relationship between abstract mindedness and prosocial behaviour in adolescents. Adolescence is a crucial age period for understanding and enhancing prosocial behaviour [42], [43]. Thus, the extension of this research onto adolescents will contribute greatly to the knowledge of enhancing prosocial behaviour in adolescents.

7. Conclusion

In conclusion, the present study has extended the scope of research on the relationship between abstract mindedness and prosocial behaviour. It has provided support for past studies [19], [3], demonstrating that abstract mindedness enhances prosocial behaviour. From the present study, it has come to light that self-regulation is not an intervening variable for the link between abstract mindedness and prosocial behaviour in adults; suggesting that self-regulation might not be a determining factor for prosocial behaviour among adults. While the current findings build on existing research by signifying the significant role of mindsets in determining prosocial behaviour, further research is required to determine if there are other variables underlying this relationship.

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Appendix A

Mindset Activation Tasks

Abstract Mindset Condition

1) Anagram Task

Rearrange the alphabets to form a word.

a) omFreed - _____
b) odG - _____
c) veLo - _____
d) ssSucce - _____
e) rmthWa - _____

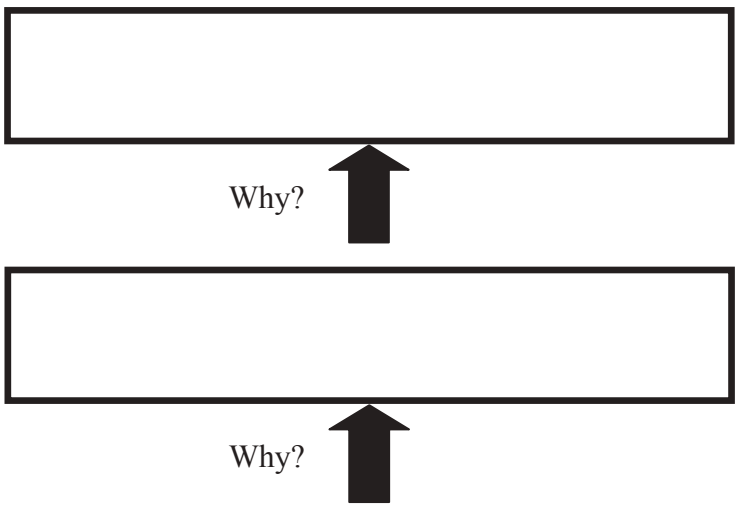
2) Sentence Completion Task

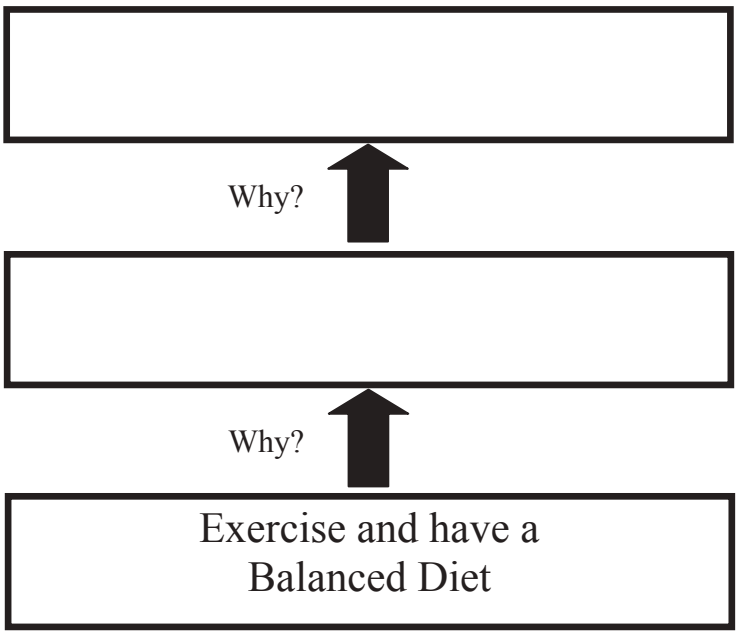
Complete the following sentences by filling in the blanks.

a) Dog is an example of _____.
b) Bird is an example of _____.
c) Singer is an example of _____.
d) Berries are an example of _____.
e) Pasta is an example of _____.

3) Construal Level Priming Task

This thought exercise is intended to focus your attention on *why* you do the things you do. For this thought exercise, please consider the following activity: 'Exercise and have a Balanced Diet'. Fill in the boxes.





Concrete Mindset Condition

1) Anagram Task

Rearrange the alphabets to form a word.

a) erLead - _____
b) teChocola - _____
c) iestPr - _____
d) ophyTr - _____
e) erFlow - _____

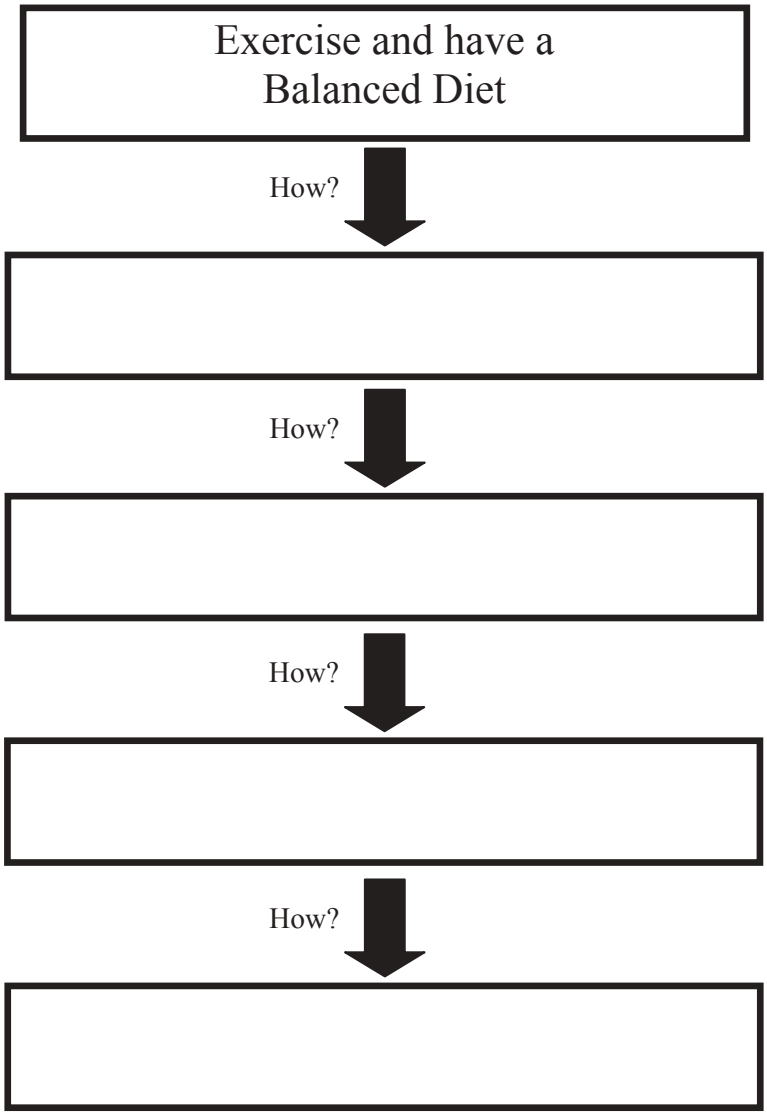
2) Sentence Completion Task

Complete the following sentences by filling in the blanks.

a) An example of a dog is _____.
b) An example of a bird is _____.
c) An example of a singer is _____.
d) An example of berries is _____.
e) An example of pasta is _____.

3) Construal Level Priming Task

This thought exercise is intended to focus your attention on *how* you do the things you do. For this thought exercise, please consider the following activity: 'Exercise and have a Balanced Diet'. Fill in the boxes.



Appendix B

Mindset Manipulation Check Task

Please answer the following questions by circling the response that best describes you. Use the scale provided to indicate how well the statement fits you.

Strongly Disagree	Disagree	Somewhat Disagree	Uncertain	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1. I like situations or tasks in which I am not concerned with details.	1	2	3	4	5	6	7
2. I prefer to deal with specific problems rather than with general questions.	1	2	3	4	5	6	7
3. I care more about the general effect than about the details of a task I have to do.	1	2	3	4	5	6	7
4. In discussion or writing on a topic, I think the details and facts are more important than the overall picture.	1	2	3	4	5	6	7
5. I tend to emphasize the general aspect of issues or the overall effect of a project.	1	2	3	4	5	6	7
6. I tend to break down a problem into many smaller ones that I can solve, without looking at the problem as a whole.	1	2	3	4	5	6	7
7. In talking or writing down ideas, I like to show the scope and context of my ideas, that is, the general picture.	1	2	3	4	5	6	7
8. I pay more attention to parts of a task then to its overall effect or significance.	1	2	3	4	5	6	7

Appendix C

Self-Regulation Measure

Please answer the following questions by circling the response that best describes you. Use the scale provided to indicate how well the statement fits you.

Strongly Disagree	Disagree	Somewhat Disagree	Uncertain	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1. I usually keep track of my progress toward my goals.	1	2	3	4	5	6	7
2. I am able to accomplish goals I set for myself.	1	2	3	4	5	6	7
3. I can come up with lots of ways to change, but it's hard for me to decide which one to use.	1	2	3	4	5	6	7
4. I have personal standards, and try to live up to them.	1	2	3	4	5	6	7
5. I have a hard time setting goals for myself.	1	2	3	4	5	6	7
6. I usually judge what I'm doing by the consequences of my actions.	1	2	3	4	5	6	7
7. I am able to resist temptation.	1	2	3	4	5	6	7
8. Most of the time I don't pay attention to what I'm doing.	1	2	3	4	5	6	7
9. I feel bad when I don't meet my goals.	1	2	3	4	5	6	7

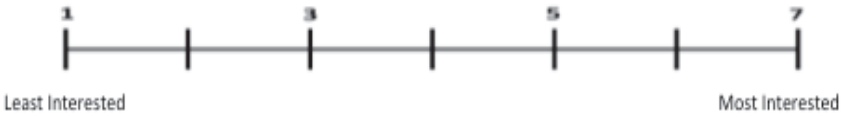
10. I usually decide to change and hope for the best.	1	2	3	4	5	6	7
11. I forget about whatever else I need to do when I'm doing something really fun.	1	2	3	4	5	6	7
12. During a dull class, I have trouble forcing myself to start paying attention.	1	2	3	4	5	6	7
13. I can find ways to make myself study even when my friends want to go out.	1	2	3	4	5	6	7
14. I lose control whenever I don't get my way.	1	2	3	4	5	6	7
15. In class, I can concentrate on my work even if my friends are talking.	1	2	3	4	5	6	7
16. When I'm excited about reaching a goal (e.g. getting my driver's license, going to college), it's easy to start working toward it.	1	2	3	4	5	6	7

Appendix D

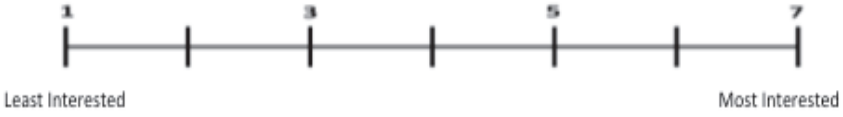
Prosocial Behaviour Measure

James Cook University's Social Service Club is planning to adopt a cause and would like to understand the general population's preferences for the cause that should be adopted. The club has identified several possible causes. Please indicate your preference on the scale of 1-7 (1 being least interested and 7 being most interested)

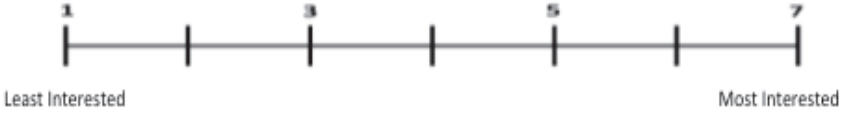
1) Prevention of cruelty to animals - Partnerships with various animal cruelty prevention associations (eg. SPCA), seminars and exhibitions about animal protection



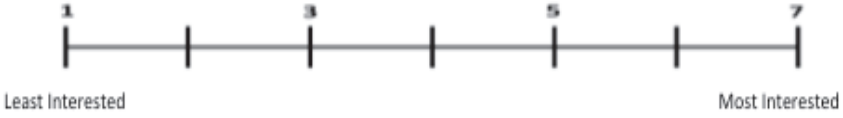
2) Environmental protection – Adopting of a green campus campaign, with recycling stations and bins located within campus



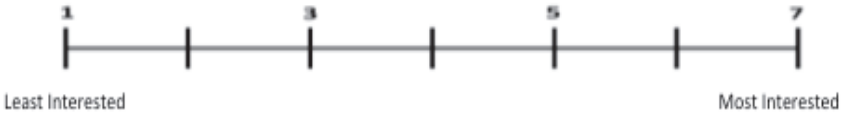
3) Individuals with physical disabilities – Visits to associations, art exhibition by the individuals



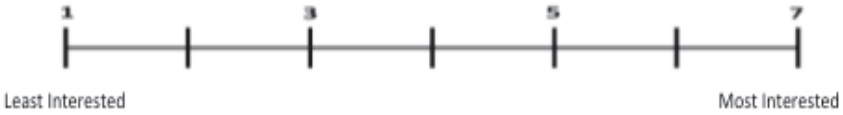
4) Child abuse – Start up of a helpline that children can call, partnership with the associations (Singapore Children's Society)



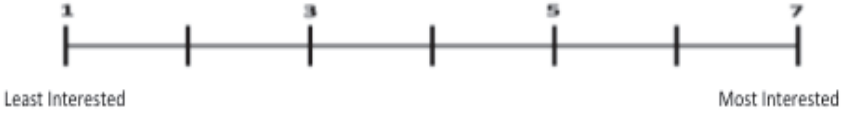
5) Teens in homes – Organizing activities for the teens to energize them (talks, training sessions), counseling services for the teens



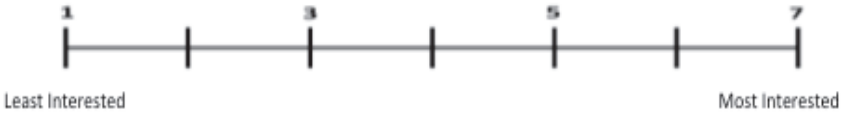
6) Elderly in aged homes – Visiting elderly in the homes, organizing activities with the elderly, selling handmade objects by the elderly to raise funds



7) Coaching/ Tuition for fellow students –Coaching sessions to help fellow students in their work



8) Should any of the causes you indicated interest is selected to be adopted by the social service club, how likely would you be interested in participating in the activities organized?



Appendix E

Demographics Form

Please fill in the following information.

Age: _____

Gender (Please circle): Male / Female

Appendix F

Factor Loadings of the Eight-Item Self-Regulation Measure

Table F1. Factor Loadings based on Principal Axis Factoring for the Eight-Item Self-Regulation Measure.

	Item	Self-Regulation
1	I usually keep track of my progress toward my goals.	.76
2	I am able to accomplish goals I set for myself.	.73
4	I have personal standards, and try to live by them.	.53
7	I am able to resist temptation.	.38
8	Most of the time I don't pay attention to what I'm doing.*	.42
13	I can find ways to make myself study even when my friends want to go out.	.52
15	In class, I can concentrate on my work even if my friends are talking.	.45
16	When I'm excited about reaching a goal (e.g. getting my driver's license, going to college), it's easy to start working toward it.	.49
	Eigenvalue	2.42
	Total variance explained	30.27%

*Reverse-scored

Appendix G

Summary of Mediation Analyses and the Tested Mediation Model Diagram

Table G1. Unstandardised (B) and standardised (β) regression coefficients for each predictor testing self-regulation as a mediator in the relationship between mindset condition and prosocial behaviour (N = 160).

Variable		B [95% CI]	β	p
Model 1				
	Outcome: Prosocial Behaviour			
	Predictor: Mindset Condition	-1.062 [-1.42, -.70]	-.42	<.001
Model 2				
	Outcome: Self-regulation			
	Predictor: Mindset Condition	-.152 [-.41, .11]	-.09	.248
Model 3				
	Outcome: Prosocial Behaviour			
	Mediator: Self-regulation	.078 [-.14, .30]	.05	.484
	Predictor: Mindset Condition	-1.051 [-1.42, -.69]	-.41	<.001

Note. CI = Confidence Interval

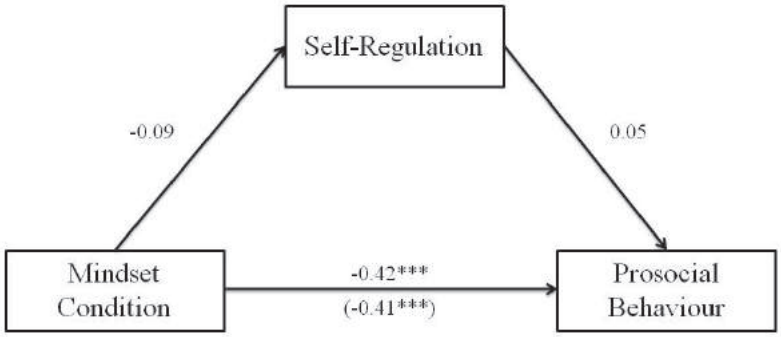


Fig. G1. Relationship between mindset condition and prosocial behaviour, with self-regulation as a mediating variable, ***$p < .001$, $N = 160$

The path analytic models of 2 X 2 classroom goal structures, achievement goals, achievement emotions and self-regulated learning of Hong Kong undergraduates in their English study

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Previous research has shown that students' perceptions of classroom goal structures affect cognitive, affective, and behavioral aspects of students' participation in educational settings [1]. By adding a new self-developed classroom mastery avoid goal structure, this study examined the relationships between 2 X 2 classroom goal structures, achievement goals, achievement emotions and self-regulated learning of Hong Kong undergraduates in their English study. One hundred and eighty university students who enrolled in universities' English courses were participated to complete a set of questionnaires by using convenient sampling. Three path models were analyzed. The first model indicated that classroom goal structures predicted achievement goals and subsequently to self-regulated learning. The second model indicated that classroom goal structures predicted positive achievement emotions and subsequently to self-regulated learning. The third model indicated that classroom goal structures predicted negative activating (Anger and Anxiety) and negative deactivating (Hopelessness and Boredom) achievement emotions and subsequently to self-regulated learning differently. The present research may be the first one to establish path models by using 2 X 2 classroom goal structures to predict achievement goals, achievement emotions and self-regulated learning. More, it provides practical implications for educators creating an adaptive learning environment to students, thus influences students to adopt adaptive achievement goals, evoke positive achievement emotions and facilitate higher self-regulated learning.

Keywords: Classroom Goal Structures, Achievement Goals, Achievement Emotions, Self-Regulated Learning.

1. Introduction

1.1. 2 x 2 classroom goal structures

Over the decades, researches focus on two types of achievement goal studies [2], which are classroom goal structures and personal goal orientations.

Classroom goal structures are about how students perceive the emphasis in classroom for engaging the academic work [3]. In 2002, building on the study of

Ames' TARGET system, Midgley and her colleagues developed The Patterns of Adaptive Learning Survey (PALS) [4]. One of the scales in PALS is to measure the perceptions of students towards classroom goal structures. The scale divided the structures into three types. Classroom mastery goal structure means students perceive that developing competence is emphasized in the classroom; classroom performance approach goal structure means students perceive that demonstrating ability to others is emphasized in the classroom; classroom performance avoid goal structure means students perceive that avoiding demonstrating incompetence to others is emphasized in the classroom [3].

For another type of goals studies, personal achievement goals are about how students perceive the aim of his or her achievement behaviors [5]. In 2001, a dichotomy model of personal achievement goals was developed. It has an approach-avoidance distinction of both mastery and performance goals, which includes two dimensions of competence – definition and valence [6]. Students with mastery goals perceive the definition of competence as absolute or intrapersonal standards; students with performance goals perceive the definition of competence as normative standards. The valence of competence divided into positive (approaching success) and negative (avoiding failure).

The above showed the model of personal achievement goals is more comprehensive than the model of classroom goal structures as it has an approach-avoidance distinction of goals. Nonetheless, it is possible that students may have the perception that avoiding failure or incompetence himself or herself is the aim to engage in academic work in the classroom. Hence, a scale of classroom mastery avoid goal structure was developed to extend the understanding of classroom goal structures and students' learning.

1.2. Achievement emotions

Additionally, some researches study about goal structures and students' affects [7]; however, there are a lack of studies about goal structures and emotions. Affects and emotions are different. Affect is a more general construct that combined emotions and moods [8]. Moods and emotions are also different. Moods do not have a specific referent and the intensity is low [9] but emotions have multiple component processes, including specific affective, cognitive, physiological, and behavioral components [10]. Seeing the differences between affects and emotions and also moods and emotions, the present research focuses on achievement emotions in order to extend the literatures about how goal structures influence students' achievement emotions and thus self-regulated learning.

2. Literature Review

2.1. Classroom goal structures and achievement goals

Researchers found that classroom goal structures affect students to adopt personal achievement goals [4] [11]. Studies indicated that when students have perception that their classrooms focus on effort and understanding, they are more likely to adopt mastery-oriented goals [4]. However, when students have perception that their classrooms focus on competition for grades and social comparisons of ability, they are more likely to adopt performance-oriented goals [4]. Luo and his colleagues [2] found that classroom mastery goal structure predicts students' mastery approach and mastery avoidance goals, while classroom performance goal structures predict students' performance approach and performance avoidance goals.

The above researches showed how classroom goal structures affected the adoption of students' personal achievement goals. However, due to a lack of scale, a few researches study about how classroom mastery goal structures affect students' personal goals by separating classroom mastery goal structure into approach-avoidance distinction. Elliot [12] stated that environmental and intrapsychi factors may influence the adoption of personal goals. The environment that stresses the importance of improvement, task mastery and possibility of facing failure or difficulties are more likely to affect students to adopt mastery avoidance goals. Therefore, it is possible that the classroom that highlights improvement, task mastery, and the chances of facing difficulties may influence students to adopt mastery avoidance goals [12] and students may have the perception that avoiding failure or incompetence himself or herself (mastery avoid goal structure) is the aim to engage in academic work in the classroom. Therefore, a scale of classroom mastery avoid goal structure was developed to investigate how it would influence students' academic behaviors.

2.2. Achievement goals and self-regulated learning

Zimmerman [13] defines self-regulated learning as self-generated thoughts, feeling, and actions, which aims at achieving goals.

Achievement goals play an important role in self-regulated learning [14]. Researchers found that mastery goals are related to high self-regulated learning, deep cognition learning strategies [15] [16] and self-monitoring [11] [17]. Performance avoidance goal is related to less self-regulated learning, surface cognition, and less learning strategies [18].

The researches about performance approach goals and learning are inconsistent. Performance approach goals are related to persistence on studying [18]. It has positive correlations with students' learning outcomes, including effort, performance attainment and self-efficacy [19]. It also has null relationships with deep learning, disorganization, and self-regulated learning [19]. However, some researchers found that performance approach goals can predict all self-regulated learning strategies from Motivated Strategies for Learning Questionnaire [20].

2.3. Classroom goal structures and achievement emotions

Achievement emotions define as emotions related to achievement activities or achievement outcomes [21].

Researchers found that students with a classroom mastery goal structure are more likely to have positive affects [4] [22] while students with classroom performance goal structures are more likely to have negative affects [23]. In a study, researchers found that mastery goal structures are related to enjoyment and performance goal structures are related to boredom in physical education lessons [1].

The above researches are about classroom goal structures and affective experiences of students. However, affects and emotions are different and the differences have been mentioned in the introduction. Due to the differences and a lack of researches, it is worth finding out how classroom goal structures influence the achievement emotions of students and thus affect their self-regulated learning.

2.4. Achievement emotions and self-regulated learning

Academic emotions are significantly related to the learning of students. Pekrun and his colleagues [21] assumed that positive emotions like enjoyment are related to the enhancement of self-regulated learning; while negative emotions like anxiety are related to the less self-regulated learning and more reliance on external regulation of learning. Some studies found that enjoyment is positively related to perceived self-regulation of learning; Anxiety and shame are related to perceived external-regulated of learning [24]. Furthermore, some studies found that positive emotions are related to metacognitive strategies, elaboration, and organization; however, negative emotions are negatively related the above self-regulated learning strategies [24].

2.5. Hypotheses

H1: There are significant relationships between classroom goal structures and achievement goals at the p=.05 level. It is predicted that classroom mastery goal structures (Mastery approach, Mastery avoid) have significantly positive relationships with personal mastery goals (Mastery approach, Mastery avoidance); classroom performance goal structures (Performance approach, Performance avoid) have significantly positive relationships with personal performance goals (Performance approach, Performance avoidance).

H2: There are significant relationships between achievement goals and self-regulated learning at the p=.05 level. It is predicted that mastery approach, mastery avoidance and performance approach goals have significantly positive relationships with self-regulated learning; Performance avoidance goal has a significantly negatively relationship with self-regulated learning.

H3: There are significant relationships between classroom goal structures and positive achievement emotions at the p=.05 level. It is predicted that classroom mastery goal structures (Mastery approach, Mastery avoid) have significantly positive relationships with positive emotions; classroom performance goal structures (Performance approach, Performance avoid) have significantly negative relationships with positive emotions.

H4: There are significant relationships between positive achievement emotions and self-regulated learning at the p=.05 level. It is predicted that positive achievement emotions have significantly positive relationships with self-regulated learning.

H5: There are significant relationships between classroom goal structures and negative achievement emotions at the p=.05 level. It is predicted that classroom mastery goal structures (Mastery approach, Mastery avoid) have significantly negative relationships with negative emotions; classroom performance goal structures (Performance approach, Performance avoid) have significantly positive relationships with negative emotions.

H6: There are significant relationships between negative achievement emotions and self-regulated learning at the p=.05 level. It is predicted that negative achievement emotions have significantly negative relationships with self-regulated learning.

3. Method

3.1. Participants

In this research, English language class was chose as a domain to study the classroom goal structures. The participants of this study were 180 undergraduate students (54 male and 126 female) who enrolled in universities' English language courses from different departments and universities in Hong Kong in the fall semester.

3.2. Procedure

Convenience sampling was used to select participants who enrolled universities' English language courses in the fall semester. A consent form was given to each participant. After they signed the forms, the questionnaires were distributed to them. The whole questionnaire contained 146 items and it took around 10 minutes to finish it. After they finished, there was a debriefing section.

3.3. Instruments

Perception of Classroom Goal Structures Scale is from The Patterns of Adaptive Learning Survey which was developed by Midgley and colleagues [3]. In the present study, this scale was adapted into English Language Class and translated into Chinese. There are 3 subscales and 14 items. Participants rate each item by using 5-point Likert scale [3]. The reported reliabilities of this scale are from alpha value .70 - .83.

Classroom Mastery Avoid Goal Structure Scale is self-developed to measure students' perception of avoiding failure or incompetence is the aim to engage in the academic work of English Language Class. It was adapted from Perception of Classroom Goal Structures Scale [3], 2 X 2 Achievement Goals Questionnaire [6] and the adapted Chinese version of 2 X 2 Achievement Goals Questionnaire for English Language Class [25]. There are 5 items. Participants rate each item by using 5-point Likert scale. The reliability of this scale in this study is alpha value .61.

The original 2 x 2 Achievement Goals Questionnaire was created by Elliot and McGregor [26]. In this study, the adapted Chinese version of 2 x 2 Achievement Goals Questionnaire for English Language Class was used and it was created by Wong [25]. There are 4 subscales and 24 items. Participants rate each items from 1= "Strongly disagree" to 6= "Strongly agree" [25]. The reported reliabilities are from .67 - .87.

The original Achievement Emotions Questionnaire was created by Pekrun and his colleagues [24]. In this study, the adapted Chinese version of Achievement Emotions Questionnaire for English Language Class was used and it was created by Wong [25]. There are 8 subscales and 48 items. Participants rate each items from 1= "Strongly disagree" to 5= "Strongly agree" [25]. The reported reliabilities are from .84 - .94.

Academic self-regulation scale was created by Magno [27]. In this study, the scale was adapted into English Language learning and translated into Chinese. There are 7 subscales and 55 items. Participants rate each items from 1= "Strongly disagree" to 4 = "Strongly agree" [27]. The reported reliabilities are from .73 - .87.

4. Results

4.1. Descriptive statistics and correlational analysis

SPSS was used to compute the descriptive statistics and correlations between classroom goal structures, achievement goals, achievement emotions and self-regulated learning. The mean, standard deviations and correlations of variables are indicated in the following Table 1 (N=180).

4.2. Reliability analysis

Table 2 shows the reliabilities with Cronbach's alpha for the instruments. For the Perception of Classroom Goal Structure Scale (combined the Self-developed Classroom Mastery Avoid Goal Structure Scale), it showed satisfactory reliability, α>.74 and the four subscales range from .59 to .78. For the Achievement Goals Questionnaire, the reliability was good, α>.85 and the four subscales showed satisfactory reliabilities, ranging from .73 to .83. For the Achievement Emotions Questionnaire, the reliability was good, α>.90 and the eight subscales indicated good reliabilities, ranging from .81 to .92. For the Academic Self-regulation Scale, the reliability was good, α>.95 and the seven subscales showed satisfactory reliabilities, ranging from .62 to .88.

Table 1 *Descriptive Statistics and Correlation between Variables (N = 180)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1.CMG	-																						
2.CPAG	-.09	-																					
3.CPAVG	+17**	.58**	-																				
4.CMAVG	.05*	.19*	.29**	-																			
5.MA	.38**	-.20**	-.57**	.30**	-																		
6.PA	.06	.60**	.51**	.14**	-.11	-																	
7.MAV	.24**	.24**	.33**	.40**	.21**	.56**	-																
8.PAV	-.08	.34**	.56**	.18*	-.17*	.59**	.51**	-															
9.Enjoyment	.32**	-.21**	-.08	.24**	.47**	.018	.10**	-.14	-														
10.Hope	.35**	-.10	-.05	.25**	.47**	.15*	.24**	-.14	.76**	-													
11.Pride	.31**	.07	.12	.31**	.29**	.32**	.32**	.13	.56**	.63**	-												
12.Anger	-.25**	.38**	.56**	.06	-.25**	.52**	.27**	.42**	-.23**	-.26**	-.02	-											
13.Anxiety	-.09	.22**	.36**	.09	-.16*	.29**	.17**	.17**	-.05	-.24**	.11	.60**	-										
14.Shame	-.07	.29**	.39**	.08	-.08	.40**	.24**	.24**	-.16*	-.27**	.11	.58**	.78**	-									
15.Hopelessness	-.20**	.23**	.28**	.06	-.26**	.15*	.19*	.39**	-.26**	-.31**	-.09	.72**	.66**	.56**	-								
16.Boredom	-.34**	.38**	.26**	-.13	-.25**	.26**	.06	.38**	-.51**	-.56**	-.23**	.62**	.57**	.50**	.55**	-							
17.Memory	.11	.12	.05	.14	.20**	.17*	.25**	.13	.81**	.55**	.25**	.20**	.29**	.19**	.19*	-.14	-						
18.Goal	.02	.14	.04	.01	.05	.21**	.16*	.13	.23**	.20**	.13*	.25**	.36**	.21**	.27**	-.00	.74**	-					
19.Evaluation	.19*	.05	-.06	.14	.45**	.12	.22**	-.09	.44**	.43**	.31**	-.05	.07	.03	-.16*	-.29**	.61**	.35**	-				
20.Assistance	.12	.03	-.03	.08	.35**	.02	.16*	-.00	.47**	.47**	.32*	-.01	.10	.09	-.00	-.10	.72**	.51**	.60*	-			
21.Environment	.04	.21**	.05	.05	.04	.19*	.08	.05	.01	.05	.16	.13	.10	.16*	.17*	.10	.36**	.19**	.28*	.19*	-		
22.Responsibility	.13	.17*	.04	.14	.21**	.20**	.17*	-.02	.13*	.30**	.21*	.06	.13	.08	.01	-.12	.57**	.53**	.54*	.52**	.40**	-	
23.Organizing	.22**	.08	-.09	.16*	.32**	.08	.22**	-.02	.21**	.25**	.20*	-.01	.12	.01	-.03	-.11	.57**	.10**	.56*	.38**	.36**	.50*	-
M	3.70	3.38	3.04	3.56	4.07	3.74	3.43	3.54	2.92	3.16	3.39	2.76	2.71	3.00	2.26	3.00	2.33	2.20	2.79	2.67	2.83	2.61	2.76
SD	.52	.77	.74	.59	.77	.87	.85	.91	.89	.71	.71	.84	.70	.84	.69	1.00	.54	.67	.50	.55	.73	.52	.47

Note: *p <0.05, **p < 0.01; CMG=Classroom Mastery Goal Structure; CPAG=Classroom Performance Approach Goal Structure; CPAVG=Classroom Performance Avoid Goal Structure; CMAVG=Classroom Mastery Avoid Goal Structure; MA=Mastery Approach Goal; PA=Performance Approach Goal; MAV=Mastery Avoid Goal; PAV=Performance Avoid Goal; Memory=Memory Strategy; Goal=Goal Setting; Evaluation=Self-Evaluation; Assistance=Seeking Assistance; Environment=Environment Structuring; Responsibility=Learning Responsibility

Table 2
Reliability Cronbach's Alpha for the Instruments.

Scales	Cronbach's Alpha
Perception of Classroom Goal Structure Scale	.74
1. Classroom Mastery Goal Structure	.59
2. Classroom Performance Approach Goal Structure	.66
3. Classroom Performance Avoid Goal Structure	.78
4. Self-developed Classroom Mastery Avoid Goal Structure Scale	.61
Achievement Goals Questionnaire	.85
1. Mastery Approach	.73
2. Performance Approach	.78
3. Mastery Avoidance	.83
4. Performance Avoidance	.82
Achievement Emotions Questionnaire	.90
1. Enjoyment	.87
2. Hope	.82
3. Pride	.83
4. Anger	.85
5. Anxiety	.81
6. Shame	.84
7. Hopelessness	.89
8. Boredom	.92
Academic Self-Regulation Scale	.95
1. Memory Strategy	.88
2. Goal Setting	.85
3. Self-Evaluation	.86
4. Seeking Assistance	.77
5. Environmental Structuring	.84
6. Learning Responsibility	.64
7. Organizing	.62

4.3. Confirmatory factor analysis

LISREL 8.7 was used to compute CFA to examine the validity of all instruments. The results of CFA showed that three instruments had good fit to the data after item parceling, which CFI is higher than .90 and the ratio between χ 2/df is smaller than 3 (see Table 3).

Table 3
Goodness of Fit Statistics for CGS, AG, AE, ASRL.

Instruments	df	χ2	χ 2/df	GFI	CFI	RMSEA
CGS	98	208.76	2.13	0.88	0.91	0.07
AG	224	700.29	3.12	0.74	0.86	0.1
AE	1052	2607.93	2.47	0.61	0.92	0.09
ASRL	1253	2802.96	2.23	0.62	0.91	0.08

Note: CGS=Perception of Classroom Goal Structures Scale; AG=Achievement Goals Questionnaire; AE=Achievement Emotions Questionnaire; ASRL=Academic Self-Regulation Scale; χ2=Minimum Fit Function Chi-Square; RMSEA=Root Mean Square Error of Approximation; GFI= Goodness of Fit Index; CFI= Comparative Fit Index

4.4. Path analysis of classroom goal structures, achievement goals and self-regulated learning

A path model between classroom goal structures, achievement goals and self-regulated learning has been examined by using Lisrel. The model was shown in Figure 1.

For the relationship between classroom goal structures and achievement goals, the results indicated that classroom mastery goal structure (CMG) was a significant positive predictor of mastery approach goal (β=.21, p<.01), performance approach goal (β=.16, p<.05), mastery avoidance goal (β=.17, p<.05). However, there was no significant relationship between classroom mastery goal structure and performance avoid goal.

The result indicated that classroom performance approach goal structure (CPAG) was a significant positive predictor of performance approach goal (β=.45, p<.001). However, there were no significant relationships between classroom performance approach goal structure, mastery approach goal, mastery avoidance goal, and performance avoidance goal.

The result indicated that classroom performance avoid goal structure (CPAVG) was a significant predictor of all achievement goals. It was a positive predictor of performance approach goal (β=.27, p<.01), mastery avoidance goal (β=.29, p<.01), and performance avoidance goal (β=.52, p<.001). It was a significant negative predictor of mastery approach goal (β=-.22, p<.01).

The results indicated that classroom mastery avoid goal structure (CMAVG) was a significant positive predictor of mastery approach goal (β=.25,

p<.01) and mastery avoidance goal (β=.25, p<.01). However, there were no significant relationships between classroom mastery avoid goal structure, performance approach, and performance avoidance goals.

For the relationship between achievement goals and self-regulated learning, the results indicated that mastery approach goal was a significant positive predictor of five self-regulated learning strategies, including memory strategy (β=.18, p<.05), self-evaluation (β=.41, p<.001), seeking assistance (β=.34, p<.001), learning responsibility (β=.27, p<.001), and organizing (β=.27, p<.001). However, there were no significant relationships between mastery approach goal, goal setting and environmental structuring strategies.

The results indicated that performance approach goal was a significant positive predictor of four self-regulated learning strategies, including goal setting (β=.18, p<.05), self-evaluation (β=.24, p<.01), environmental structuring (β=.26, p<.01), and learning responsibility (β=.31, p<.001). However, there were no significant relationships between performance approach goal, memory strategy, seeking assistance and organizing.

The results indicated that mastery avoidance goal was a significant positive predictor of two self-regulated learning strategies, including memory strategy (β=.15, p<.05) and organizing (β=.19, p<.01). However, there were no significant relationships between mastery avoidance goal and other five self-regulated learning strategies.

The results indicated that performance avoidance goal was a significant negative predictor of two self-regulated learning strategies, including self-evaluation (β=-.21, p<.01) and learning responsibility (β=-.17, p<.05). However, there were no significant relationships between performance avoidance goal and other five self-regulated learning strategies.

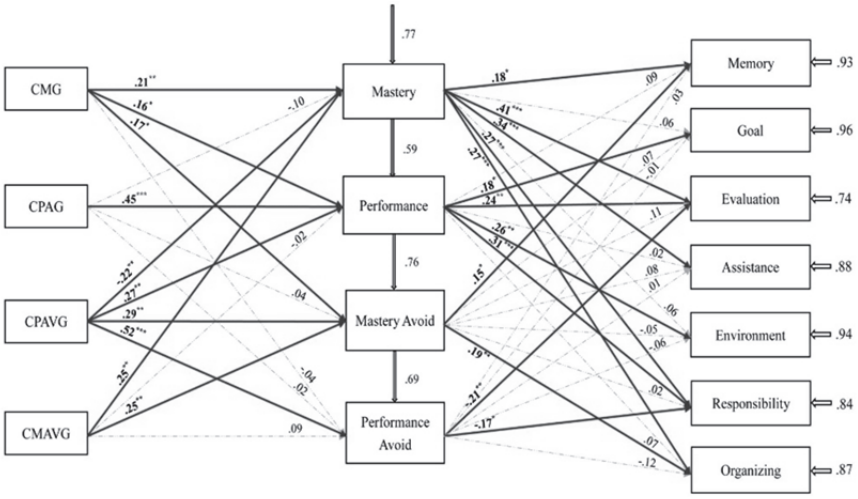

Figure 1 First Model. The Relationship between Classroom Goal Structures, Achievement Goals and Self-regulated Learning.

Note: *p<.05, **p<.01, ***p<.001, the significant pathways are presented with solid lines while the insignificant pathways are presented with dotted lines. CMG=Classroom Mastery Goal Structure; CPAG=Classroom Performance Approach Goal Structure; CPAVG=Classroom Performance Avoid Goal Structure; CMAVG=Classroom Mastery Avoid Goal Structure; MA=Mastery Approach; PA=Performance Approach; MAV=Mastery Avoid; PAV=Performance Avoid; Memory=Memory Strategy; Goal=Goal Setting; Evaluation=Self-Evaluation; Assistance=Seeking Assistance; Environment=Environment Structuring; Responsibility=Learning Responsibility

4.5. Path analysis of classroom goal structures, positive achievement emotions and self-regulated learning

A path model between classroom goal structures, positive achievement emotions and self-regulated learning has been examined by using Lisrel and the model was shown in Figure 2.

For classroom goal structures and positive achievement emotions, the results indicated that classroom mastery goal structure was a significant positive predictor of all positive emotions, including enjoyment (β=.22, p<.01), hope (β=.28, p<.01) and pride (β=.30, p<.01).

The result indicated that classroom performance approach goal structure was a significant negative predictor of enjoyment (β=-.27, p<.01). However, there were no significant relationships between classroom performance approach goal structure, hope and pride.

The results indicated that classroom performance avoid goal structure had no significant relationships with enjoyment, hope and pride.

The result indicated that classroom mastery avoid goal structure was a significant positive predictor of enjoyment (β=.17, p<.05). However, there were no significant relationships between classroom mastery avoid goal structure, hope and pride.

For positive achievement emotions and self-regulated learning, the results indicated that enjoyment was a significant positive predictor of five self-regulated learning strategies, including memory strategy (β=.35, p<.001), goal setting (β=.19, p<.05), self-evaluation (β=.27, p<.001), seeking assistance (β=.44, p<.001) and learning responsibility (β=.17, p<.05). However, there were no significant relationships between enjoyment, environment structuring and organizing.

The result indicated that hope was a significant positive predictor of one self-regulated learning strategy, self-evaluation (β=.15, p<.05). There were no significant relationships between hope, memory strategy, goal setting, seeking assistance, environment structuring, learning responsibility and organizing.

The results indicated that pride was a significant positive predictor of two self-regulated learning strategies, including self-evaluation (β=.16, p<.05) and organizing (β=.18, p<.05). There were no significant relationships between pride, memory strategy, goal setting, seeking assistance, environment structuring, and learning responsibility.

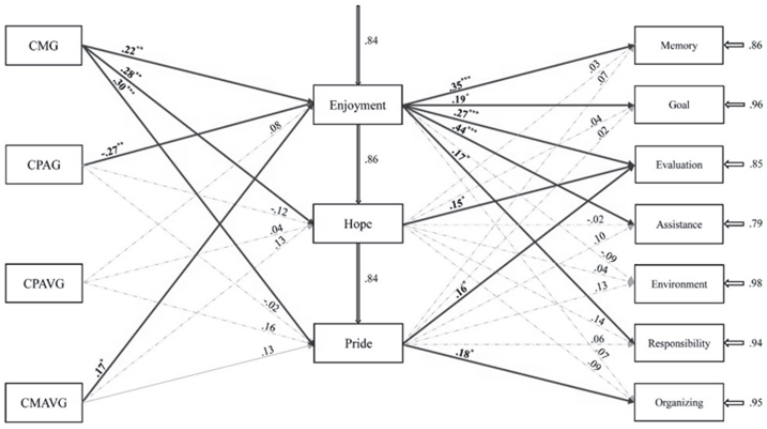

Figure 2 Second Model. The Relationship between Classroom Goal Structures, Positive Achievement Emotions, and Self-regulated Learning.

Note: *p<.05, **p<.01, ***p<.001, the significant pathways are presented with solid lines while the insignificant pathways are presented with dotted lines. CMG=Classroom Mastery Goal Structure; CPAG=Classroom Performance Approach Goal Structure; CPAVG=Classroom Performance Avoid Goal Structure; CMAVG=Classroom Mastery Avoid Goal Structure; Memory=Memory Strategy; Goal=Goal Setting; Evaluation=Self-Evaluation; Assistance=Seeking Assistance; Environment=Environment Structuring; Responsibility=Learning Responsibility

4.6. Path analysis of classroom goal structures, negative achievement emotions and self-regulated learning

A path model between classroom goal structures, negative achievement emotions and self-regulated learning has been examined by using Lisrel and the model was shown in Figure 3.

For classroom goal structures and negative achievement emotions, the results indicated that classroom mastery goal structure was a significant negative predictor of anger (β=-.20, p<.05) and boredom (β=-.27, p<.01). There were no significant relationships between classroom mastery goal structure, anxiety, shame, hopelessness, and boredom.

The results indicated that classroom performance approach goal structure was a significant positive predictor of anger (β=.27, p<.01) and boredom (β=.35, p<.001). There were no significant relationships between classroom performance approach goal structure, anxiety, shame, hopelessness, and boredom.

The results indicated that classroom performance avoid goal structure was a significant positive predictor of anger (β=.18, p<.05), anxiety (β=.23, p<.05), shame (β=.19, p<.05), and hopelessness (β=.20, p<.05). There was no significant relationship between classroom performance avoid goal structure and boredom.

The result indicated that classroom mastery avoid goal structure has no significant relationship with negative emotions.

For negative achievement emotions and self-regulated learning, the results indicated that anger was a significant positive predictor of four self-regulated learning strategies, including memory strategy (β=.27, p<.001), goal setting (β=.19, p<.01), self-evaluation (β=.22, p<.01), and learning responsibility (β=.20, p<.01). There were no significant relationships between anger, seeking assistance, environment structuring, and organizing.

The results indicated that anxiety was a significant positive predictor of six self-regulated learning strategies, including memory strategy (β=.20, p<.01), goal setting (β=.37, p<.001), self-evaluation (β=.23, p<.01), seeking assistance (β=.16, p<.05), learning responsibility (β=.15, p<.05) and organizing (β=.27, p<.01). There was no significant relationship between anxiety and environment structuring.

The result indicated that there were no significant relationships between shame and all self-regulated learning, including memory strategy, goal setting, self-evaluation, seeking assistance, environment structuring, learning responsibility, and organizing.

The result indicated that hopelessness was a significant negative predictor of self-evaluation (β=-.32, p<.001). There were no significant relationships

between hopelessness, memory strategy, goal setting, seeking assistance, environment structuring, learning responsibility, and organizing.

The results indicated that boredom was a significant negative predictor of six self-regulated learning strategies, including memory strategy (β=-.44, p<.001), goal setting (β=-.24, p<.01), self-evaluation (β=-.34, p<.001), seeking assistance (β=-.47, p<.001), learning responsibility (β=-.24, p<.01) and organizing (β=-.17, p<.05). There was no significant relationship between boredom and environment structuring.

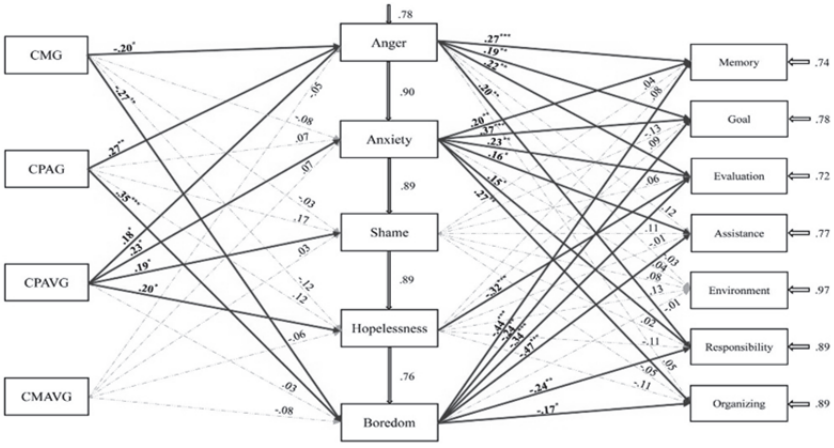

Figure 3 Third Model. The relationship between classroom goal structures, Negative Achievement Emotions, and Self-regulated Learning.

Note: *p<.05, **p<.01, ***p<.001, the significant pathways are presented with solid lines while the insignificant pathways are presented with dotted lines. CMG=Classroom Mastery Goal Structure; CPAG=Classroom Performance Approach Goal Structure; CPAVG=Classroom Performance Avoid Goal Structure; CMAVG=Classroom Mastery Avoid Goal Structure; Memory=Memory Strategy; Goal=Goal Setting; Evaluation=Self-Evaluation; Assistance=Seeking Assistance; Environment=Environment Structuring; Responsibility=Learning Responsibility

5. Discussion

5.1. Path model of classroom goal structures, achievement goals and self-regulated learning

The first model (Figure 1) showed that there were significant relationships between classroom goal structures, achievement goals and self-regulated learning, which supported hypothesis 1 and 2.

Referred to hypothesis 1, for the relationships between classroom goals structures and achievement goals, the results are consistent with the literatures generally.

Classroom mastery goal structure and classroom mastery avoid goal structure were both positive predictors of mastery approach goal and mastery avoidance goal. These results were supported by the literatures that students are more likely to adopt mastery-oriented goals when they have perception that the classroom environment focuses on effort and understanding [4]. Luo and his colleagues [2] found out classroom mastery goal structures can predict mastery approach and mastery avoidance goals of students. In the present research, it extended the literatures that classroom mastery avoid goal structure can also predict mastery approach and mastery avoidance goals of students. That means when students perceive their classrooms that focus on effort and understanding (competence-focused), no matter they perceive the environment as developing competence or avoiding incompetence, they both adopt mastery-oriented goals.

However, the present research found out classroom mastery goal structure was a positive predictor of performance approach goal. Classroom mastery goal structure and performance approach goal both have a positive valence nature, approaching success [6]. It showed that when students perceive that developing competence is the purpose of engaging in academic work in the classroom, they have a possibility to adopt personal performance approach goal, which aims at demonstrating performance to classmates or teachers to attain favorable judgments of their competence [18] [28].

Classroom performance approach goal structure was a positive predictor of performance approach goal, which is consistent with the literatures [4]. Classroom performance avoid goal structure was a positive predictor of performance approach goal and performance avoidance goal, and a negative predictor of mastery approach goal. These results were supported by the literatures that when students percept that their classrooms focus on social comparisons of ability or grades, they are more likely to adopt performance-oriented goals [4]. Additionally, classroom performance avoid goal was an outstanding predictor which predicted all achievement goals. It showed that it influenced the adoption of students' personal achievement goals significantly.

However, the present research found out classroom performance avoid goal structure was a positive predictor of mastery avoidance goal. Classroom performance avoid goal structure and mastery avoidance goal both have a negative valence nature, avoiding failure [6]. It showed that when students perceive that avoiding demonstrating incompetence (negative valence) is the purpose of engaging in academic work in the classroom, they have a possibility

to adopt mastery avoidance goals (negative valence), which aims at avoiding incompetence themselves.

Referred to hypothesis 2, for the relationships between achievement goals and self-regulated learning, the results are consistent with the literatures.

The present research found that mastery approach goal was the best predictor of self-regulated learning which positively predicted five strategies, including memory strategy, self-evaluation, seeking assistance, learning responsibility and organizing. Performance approach goal was a significant positive predictor of four self-regulated learning strategies, including goal setting, self-evaluation, environmental structuring, and learning responsibility. Mastery avoidance goal was a significant positive predictor of two self-regulated learning strategies, including memory strategy and organizing. Performance avoidance goal was a significant negative predictor of two self-regulated learning strategies, including self-evaluation and learning responsibility.

The results were supported by the literatures. Mastery goal focuses on develop competence, learning new skills, and trying to understand learning materials [4], which is reasonable that it predicted more self-regulated learning strategies. Performance approach goal focuses on demonstrating high competence to others and uses normative standards to make judgments of competence [4], which is reasonable that students with this goal engage more in learning in order to outperform themselves in front of others [20], hence, it is related to more self-regulated learning strategies. Mastery avoidance goal focuses on absolute or intrapersonal competence and students with this goal want to avoid misunderstanding or incompetence themselves in the process [4]. In spite of the fact that it shares some negative processes (negative valence) with performance avoid goal, it does not eventuate in negative outcomes and it has more positive consequences than performance avoidance goal [6]. Hence, it is reasonable that it predicted more self-regulated learning strategies than performance avoidance goal. Performance avoidance goal focuses on social comparison, avoiding unfavorable judgments of ability, negative learning outcome and the least self-regulated learning than the other achievement goals [18] [28] [6] [20] and thus it is reasonable that it is negatively related to self-regulated learning.

5.2. Path model of classroom goal structures, positive achievement emotions and self-regulated learning

The second model (Figure 2) showed that there were significant relationships between classroom goal structures, positive achievement emotions and self-regulated learning, which supported hypothesis 3 and 4.

Referred to hypothesis 3, for the relationships between classroom goal structures and positive achievement emotions, the results are consistent with the literatures.

Classroom mastery goal structure was a significant positive predictor of all positive emotions, including enjoyment, hope and pride. Classroom mastery avoid goal structure was a significant positive predictor of enjoyment. Classroom performance approach goal structure was a significant negative predictor of enjoyment. Classroom performance avoid goal had no significant relationship with positive emotions.

The results were supported by literatures and Pekrun's control-value theory. It supported the past studies findings that students with a classroom mastery goal structure are more likely to have positive affects [4] [22]. The present research extended the literatures in that classroom mastery avoid goal structure is also related to enjoyment. This may relate to when students perceive their classrooms as focusing on understanding and efforts, no matter it is perceived as developing competence or avoiding incompetence, it facilitates them to have positive emotions. According to the past literatures, students with classroom performance goal structures are more likely to have negative affects [23], which is consistent with the present findings that classroom performance approach goal structure was a significant negative predictor of enjoyment and classroom performance avoid goal had no significant relationship with positive emotions.

More importantly, the past literatures focused on classroom goal structures and affective experiences and it is different from emotion as affect is a more general construct that combined with emotions and moods [8]. Therefore, the present research extended the literatures that it showed how classroom goal structures are related to achievement emotions. The results were also supported by the Pekrun's control-value theory. He stated that a student's learning environment like goal structures might be related to his or her cognitions of control and value [9]. The cognitions of control and values are the antecedents of students' experiences of emotions [29]. Therefore, the present research showed that classroom goal structures could predict positive emotions of students significantly.

Referred to hypothesis 4, for the relationships between positive achievement emotions and self-regulated learning, the results are consistent with the literatures.

Enjoyment was a significant positive predictor of five self-regulated learning strategies, including memory strategy, goal setting, self-evaluation, seeking assistance and learning responsibility. Hope was a significant positive predictor of one self-regulated learning strategy, self-evaluation. Pride was a

significant positive predictor of two self-regulated learning strategies, including self-evaluation and organizing.

The results were supported by the literatures that positive activating emotions are related to enhancement of self-regulated learning [21], especially enjoyment [24]. The results were also supported by the Pekrun's cognitive-motivational model that achievement emotions influence the cognitive and motivational mechanisms and thus learning. Positive activating emotions (enjoyment, hope, pride) can strengthen motivation of learning, like enjoyment in learning, hope to have success and then facilitate students' learning [24].

5.3. Path model of classroom goal structures, negative achievement emotions and self-regulated learning

The third model (Figure 3) showed that there were significant relationships between classroom goal structures, negative achievement emotions and self-regulated learning, which supported hypothesis 5 and 6.

Referred to hypothesis 5, for the relationships between classroom goal structures and negative achievement emotions, the results are consistent with the literatures.

Classroom performance approach goal structure was a significant positive predictor of anger and boredom. Classroom performance avoid goal structure was a significant positive predictor of anger, anxiety, shame, and hopelessness. Classroom mastery goal structure was a significant negative predictor of anger and boredom. Classroom mastery avoid goal structure has no significant relationship with negative emotions.

The results were supported by literatures and Pekrun's control-value theory. Researchers found that students with a classroom mastery goal structure are more likely to have positive affects [4] [22], while students with classroom performance goal structures are more likely to have negative affects [23], which is consistent with the present findings that classroom mastery goal structure was negatively related to anger and boredom, but classroom performance approach goal structure was positively related to anger and boredom and classroom performance avoid goal structure was a significant positive predictor of anger, anxiety, shame, and hopelessness. It showed that when students percept demonstrating competence or avoiding demonstrating incompetence is the aim of engaging in academic work in the classroom, they are more likely to have negative emotions, especially for the classroom performance avoid goal structure which positively predicted four types of negative emotions.

More importantly, the above literatures focused on classroom goal structures and affective experiences. Therefore, the present research extended

the literatures that it showed how classroom goal structures are related to negative achievement emotions. More, it was supported by the Pekrun's control-value theory that a student's environment like goal structures may be related to his or her cognitions of control and value [9] which are the antecedents of students' experiences of emotions [29]. Therefore, the present research showed how classroom goal structures could predict negative achievement emotions significantly.

Referred to hypothesis 6, for the relationships between negative achievement emotions and self-regulated learning, the results are partially consistent with the hypothesis that negative achievement emotions have negative relationships with self-regulated learning. The results showed it depended on whether the negative emotions are activating or deactivating emotions.

In present study, anger was a significant positive predictor of four self-regulated learning strategies, including memory strategy, goal setting, self-evaluation, and learning responsibility. Anxiety was a significant positive predictor of six self-regulated learning strategies, including memory strategy, goal setting, self-evaluation, seeking assistance, learning responsibility and organizing. Hopelessness was a significant negative predictor of self-evaluation. Boredom was a significant negative predictor of six self-regulated learning strategies, including memory strategy, goal setting, self-evaluation, seeking assistance, learning responsibility and organizing. There were no significant relationships between shame and all self-regulated learning. It showed that anger and anxiety which are negative activating emotions [24] positively predicted self-regulated learning while hopelessness and boredom which are negative deactivating emotions negatively predicted self-regulated learning.

The results were supported by the Pekrun's cognitive-motivational model that achievement emotions influence the cognitive and motivational mechanisms and thus learning. Negative activating achievement emotions can lead to strong motivation to deal with the negative events [24] and strengthen self-regulated learning. Anger may increase motivation to overcome difficulties [30], while anxiety may increase motivation to avoid failures from putting more efforts [24]. Thus, anger and anxiety positively predicted self-regulated learning.

On the other hand, negative deactivating achievement emotions can lower the self-regulated learning. Boredom relates to cognitive mechanism about unfavorable feelings, deactivation in physiology and cognition, and decrease in attention and interest in learning [24] [31]. Hopelessness also relates to cognitive mechanism on negative thinking patterns in learning [32]. These two

deactivating emotions are related to negative cognitive mechanisms and thus lower the self-regulated learning.

6. Conclusion

In sum, the present study contributed to examine the relationships between classroom goal structures, achievement goals, achievement emotions and self-regulated learning. It has theoretical and practical contribution. Theoretically, it expanded the understanding of classroom goal structures by using the new 2 X 2 framework (adding classroom mastery avoid goal structure) and found out how the goal structures were related to students' personal achievement goals, achievement emotions and self-regulated learning. It provides a new direction for further study.

Practically, it has implications for classroom practices. Classroom instructional practices for educators can be improved to prevent creating the maladaptive classroom goal structure (performance avoid goal structure) learning environment to students. It is suggested that educators can create a learning environment that focuses on efforts, understanding and developing competence (classroom mastery goal structure), thus provoking adaptive achievement goals, positive achievement emotions and more self-regulated learning of students, which also applies to English language class.

There are some limitations in this research. First, the number of female and male participants were not balanced enough. Students' characteristics like gender can affect how students perceive the classroom environment [33], thus gender effects might influence the results. Second, due to using English language class as a context to study classroom goal structures which is a domain specific research, the contribution of this research would be limited.

For future studies, first, Structural Equation Modeling (SEM) can be conducted to examine the structural relationships between the variables. Second, it can examine whether classroom goal structures or personal achievement goals have a greater influence on achievement emotions or self-regulated learning.

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Digital identity: The transparency of the self

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The transparency of the (authentic) self has been raising serious issues that point at the fact that digital identity strategy has become essential. The digitalized and networked status, with its implied online audience, and with several features of alter/egos constantly urge user-decisions concerning digital footprints. Within online ecosystems the real self bears special psychological-ontological characteristics where the main rule is "whoever is not available on the internet does not exist". Users mix conscious decisions with random ones, drifting along the dataflow. Real time answers will hardly make it: the digital environment has been changing rapidly. Social psychology, computer science and business studies research the digital identity construction and the novel features from narcissism to personal branding (among others: Schawbel, 2009; Mehdizadeh, 2010; Veletsianos, 2013; Tamborra, 2014).

In the first part of my presentation I will propose a framework for the phenomena of self-determined digital identity. The second part of my paper form groups of trends in digital identity research. In addition, this presentation provides an insight into a research-in-progress on digital identity in the third part via qualitative design and via multi-generation samples. Expected results provide a brief feedback about personal goals, decisions and motivations, and, also, about realized phenomena in this field. Decisions concerning in/visibility, boundaries among public/social connections and intimacy collide with the self who has to redefine itself over and over again in terms of a digital identity in a rapidly changing online environment. Our goal is to highlight present and future phenomena concerning the transparent self designed by digital identity observing decision in online transparency.

Keywords: Digital Identity, Online Self Representation, Online Transparency, Network Impact, Surveillance, Reputation.

1. Introduction

We are living in a surveillance culture via a transparent digital environment. Detached digital data corpuses belong to users (Linderman et al., 2008) and provide digital visibility, identification and transparency concerning digital

identities. Our digital footprints are under a social/network control via online networks or via instant communities (Castells et al., 2007, pp. 244-249.). Online audiences around us are changing dynamically connecting to different contexts via online tools/platforms/applications from geotagging to realtime webcasting.

What goals and motivations are relevant in digital embeddedness? What human interactions and online tools are relevant in everyday practice? How do self-reflection and self-awareness support a digital identity strategy in online transparency?

With these basics and questions this paper focuses on the self in online transparency that produces a (non/partly)visible, (non/partly)identified and a (non/partly)actualized entity. First the paper provides a short conceptual background. Second our essential summary marks the trends of digital identity research projects with future directions. Third, the paper will present a research-in-progress report on a qualitative designed project. The research intends to investigate two generations with partly similar and partly different phenomena, goals, motivations and techniques of online representation for ongoing digital identity building. Samples provide an insight into the phenomena of representation/reputation/security, tools of public and social mix for networked audiences. The insight into the research-in-progress report highlights present and future questions/answers by the (authentic) selves with ongoing (self)reflections for interactions among universal behavioral patterns and personal experience.

2. Conceptual Background

The digitalized environment, tools and interactions reveal ontological questions. These belong to a self-reflection with reference to the offline world phenomena. Known processes of cognition support human nature to recognize the internalized external world (Smith, 2001). The Internet and digital systems constitute a parallel world with parallel recognitions. The self uses the same cognitive process to connect with real and virtual environments but - based on different consequences – their way of perception and decisions is rewritten. The newly developed general rules via digital systems/algorithms/online (re)presentations, in comparison with offline existence, constitute an ongoing challenge. Among the most well-known relevant features, this paper emphasizes the following ontological ones below:

- What is not available on the internet does not exist.
- Once something has appeared on the internet it shall leave digital footprints behind forever.
- The real self receives an extra, digitalized transparent layer in addition to its

real life, therefore, the self cannot avoid making decisions with reference to it.

There are also temporary rules to these, such as variable personal settings, security coding or reputation tools. The self needs to internalize these to understand, to adapt and to use the digital world with self-esteem and self-awareness. Its intrinsic dimension with decisions for publicity is projected on digital screens. From offline social identity (Erikson, 1968, Tajfel & Turner, 1986, Sedikides & Spencer, 2007) we have arrived to digital identity that is a data collection with characteristics/(non)visibility/identification/authority online (Feher, 2013). Our interactions become blended offline/online human interactions with automatized connections. The self tries to be authentic with its capabilities, skills and knowledge: the notion of "the best possible self representation" creates suitable decisions. If the self realizes an authentic level it results fulfilling and satisfying representation online (Guignon, 2004; Seligman et al., 2005). If the self can glint this authentic self reflection on digital platforms and via digital contents, that is to say, to a relevant adaptation: the "evolutionary successful" online factor is realized. The illusion of represented self shows itself with variable alter/egos. This phenomenon means an ongoing training for an authentic level. The ground of training is socialization and self-expression (Cable et al., 2013). If the self and the authorized self are not congruent, the transparency of digital identities in social networks and online platforms can be visible incongruently and not in an authentic way. The lack of authorized self / the lack of goals/motivations/tools/time may come to the surface.

Digital identity is the transparent side of the self outside space and time because of ontological rules (see above). According to the *Foresight Future Identities* report (2013) offline and online identities blur in the very near future. The signs have been clarified: almost all aspects of life raise questions about the self in a digital ecosystem.

Cases, decisions and online activities result in a digital represented self via automatized scenes and via digital interactions. Different online/social networks display and distribute users' footprints (Davies, 2007) and networked audiences reflect them. Networks have no centers. Nodes can be audiences, users and both of them at the same time. Views are changing dynamically in an interactive and sharing culture. These are only temporary cross-sections. Interconnectivity has become dominant where users are looking for current places in mediated communication (Burnett et al., 2003; Rheingold, 2002), and where their networked real and digital interactions exist simultaneously (Wellman, 2001). The self does not exist anymore without the reflection of its necessary and

sufficient digital transparency and/or identification. Our topic is not only relevant, but it is a must for research.

3. Trends in Digital Identity Research

The concept of digital identity has been problematized in digital technological, socio-cultural and, also, in business-marketing contexts. The emphasis is on "identification". Surpassing the internet early era, which generated big volume anonymity and experimentation (such as online chat rooms with nicknames, rudimentary avatars shaped an online role-play etc.) – technological and business developments requested the identification to a safer mode and to a targeted reach. Several digital systems and social media companies ushered plenty of users into a default real/fixed identification of different online networks. Consequently, and parallel with this research, studies on digital identification have spread gradually with niche areas.

At the time of writing this paper research projects and papers are divided basically into three groups where disciplines and views are often overlapping.

- (Social)psychology and pedagogy or further social sciences/humanities (inter/multi)disciplines with a (social)psychological trait.
- Computer science and IT studies with further emerging topics from the/an internet of things to governmental systems.
- Business, marketing, public relations and media studies from consumer behavior research to digital media philosophy/art.

These terms are definitely not the same because of the goals and directions of identification acts. Social and personal roles and purposes are managed and controlled (or not) first. The further two have institutional/corporate goals with the identification of technological/security/surveillance frameworks (see the second group) and of reach/connection (see the third group). Despite their differences these all show a strong overlap. E-commerce where online banking security and social buying are as relevant as customer behavior is a simple example.

There is no space here to list and review all major authors and research projects in this area. This chapter provides a couple of examples for big picture in this field.

The first group has rather a wide spectrum of studies, observations and research projects. Identity-construction, self-presentation, impression management, narcissism, online behavior are highlighted with several primer research (inter alia Young, 2006; Davies, 2007; Quian, 2007; Kramer & Winter,

2008; Buffardi, 2008; Zhao, 2008; Piazza, 2009; Mehdizadeh, 2010; Veletsianos, 2013; Tamborra & Baldassarre, 2014).

The second group also embraces a wide area with the fields of identity verification, protection methods of digital identity, protocols and frameworks to support digital identification, cyber security user-centric metasystems, e-ID and biopolitics (inter alia Hansen et al., 2004; Ma & Agarwal, 2007; Yong, 2007; Hert, 2008; Dhamija & Dusseault, 2008; Cameron et al., 2009; Gajek, 2009; Ranchal et al., 2010; Cheney-Lippold, 2011; Roßnagel, 2014; Whitty et al. 2015).

The third group also marks complexity with inter- and multidisciplines. Building brands, customer behavior, attitudes buying online, social media engagement, e-portfolios, targeted communication via online data bases and analytics, avatars and mobile identity via smart devices also constitute parts of the field of business communication (inter alia Dholakia, 2004; Yang, 2004; Zwick & Nikhilesh, 2004; Markendahl, 2007; Schawbel, 2009; Gajjala & Chopra, 2011; Mennecke, 2011; Vivienne & Burgess, 2012; Feher, 2014; Bennett et al., 2014). The lists host various major areas.

To sum up, digital identity research trends have become definitely versatile and these show strong convergence in the direction of virtualizing/digitalizing/mediatizing all areas of life. Digital identity is a highly complex term for research projects and, prospectively, it will become more complex with the further spread of digital devices in the near future. Developing devices, platforms and tools will require further improvements, and, finally, all three areas of the above research projects will become more sophisticated.

Our focus is on individual strategy in its complexity. We are mapping the personal decisions/motivations/goals with all these three dimensions by selves. Our goal is to present a universal/general strategy toolkit by users for an "optimal" transparent digital identity. The next chapter provides a short insight of our empirical research project with this goal.

4. Research-in-Progress Summary

Our research project focuses on digital identity strategy. The research goal is to map the phenomenon of digital identity in its complexity via personal highlighted motivations, goals and practice. The research design is hybrid and that is the first milestone of exploratory phase with a qualitative method.

According to our assumption online publicity points out common social/societal motivations, goals, decisions and activities in different generations and in different roles. The communicative consciousness, on/offline responsibility and networking attitudes are the foci of the research project. We

examine two segments of online social and professional roles in the exploratory research phase: graduate students and business decision makers. These segments mirror different levels of responsibility, the personal and professional relationships' inequality in different age groups and the different approaches of digital immigrants and (partially) digital natives. The paper presents the first 30 semi structured interviews from Central-East-Europe with 15 graduate student respondents and with 15 corporate decision maker respondents. The major questions were the following ones in the interviews:

- What kind of motivations, goals, decisions and activities define social roles and online decisions?
- Does digital identity imply/generate/operate/apply/rely on an intensified communicative consciousness? What kind of authorities support this consciousness?
- Is it possible to control digital identity only partially because of the randomness of the cases and because of the network impact?

We follow these major questions with more detailed guideline issues. At this stage our software tools were Sporkforge and MAXQUDA to support content analysis with frequencies and auto-coding via transcripts.

The Budapest Business School (BBS) Research Centre in Hungary hosts the research project. We also work on a parallel set of South-East-Asian samples with similar segments for the purpose of a cultural-comparative research. Our partners were Taylor’s University (Malaysia), Kürt Academy and Mathias Corvinus Collegium (Hungary) and Jagiellonian University (Poland) to reach and select respondents with various backgrounds and to support the preliminary research tests. Based on the completed exploratory phase, our goal is to continue with a large scale quantitative research in digital identity strategy and in the decision chains connected with them.

According to our findings these segments have common sets. The terms of motivations/goals/activities bring them many questions and uncertainties in particular about data security. Respondents’ personal prognosis suggests that they will manage digital footprints more effectively in the future. The major aim is to polish the skills and techniques in this area until they collect sufficient/proper everyday techniques for the purpose of staying visible or non-visible. Respondents are aware that they need a more complex strategy in the coming years and they try not to drift with the latest digital trends as vehemently as they used to earlier.

Present transparency results in self-reflexivity: consistency and credibility

become the most important features of authority for network control. That is, the realized characteristics of identity have been projected in the window, but real/offline life grinds out with an ongoing interaction. In cases of uncertainties they consult other users, such as friends, colleagues, decision makers, also with advisors.

Recognition of online vulnerability and random cases are unequivocal. Along with it even leaders in bigger companies' chairs do not feel the risks to be as serious as graduate student consider them to be. As they formulated it in the interviews: "we have to prepare for what you cannot prepare for". Both segments have positive and negative experience and these mean roughly the same categories. Positive experience was advantageous for identification in cases such as purchase or observability. Negative experience has definitely marked identity and/or sensitive data theft, cyber-bullying and online character murder. They are aware of the rules of digitalization:

- Whoever is not available on the internet does not exist.
- Once something has appeared on the internet it shall leave digital footprints behind forever.

Digitalized transparency means online roles for publicity and in the meantime intimacy kept safe. Digital social roles/online representation of self are the equivalent of theirs to 70-80 percent. The difference is (20-30 percent) random and is due to network impact and online services. The major issue is the regular profile/content/data control and the necessary activities to study/job/keeping touch/manage everyday tasks/reaching entertaining services by them. The network impact is unavoidable – the control is practiced by digital settings and also by face to face/online (video)chat discussion.

The random and automatized accidents are parts of digital lifestyle as their consequences - everything else has been held in their hands. They rate their intensified communicative consciousness on a high level with enough authority. Digital identity stays controlled only partially because of random cases and other people's activities.

Distances are coming from different social and professional roles. Most of corporate decision makers in the sample are satisfied with their digital identity, it is congruent with self-esteem and with authority role. Students are not worried about it but the reason is different: they interpret their representation to be only a temporary footprint collection and another new role complex is already on their horizon because of incoming jobs.

Decision maker respondents trust employees and partners. In cases of

accidents they apply penalties. If the profile of the company this does not need any special security rules - respondents give only recommendations for online activities. According to their opinion the company is more vulnerable than ever because of data leakage and human factors - but not everything can be controlled. Their network-reflexivity and -control has been increasing. Personal and professional networks are separated in most of the cases to control online transparency and surveillance by competitors. The biggest self-conflict for decision maker respondents has been their blurred corporate and professional roles. The former one is a "servant" and belongs to the present job, the latter is the future. If these are not the same in the present and the near future it results in frustration for them: to build a professional profile would be contrary to a future image.

Graduate students enjoy student life with low-key transparency and higher activity. Personal settings are controlled. They are not teenagers anymore, and they have developed new goals. Participants want to change/delete their student profile for a professional one with compatibility with possible future employers' profiles. Adult profile with references is a future vision. They manage their social control and they follow experts for best practices in order to prepare future practices. They are more active on various/multiple platforms and the net is a tool for them for self-expression. Their connections are frequently digitalized, automatized, mediatized – self-esteem and self-awareness form on platforms and in applications. They are looking for possibilities to learn digital media more thoroughly and protect themselves, mainly, against cyber-bullying and further attacks.

5. Discussion

Research results indicate the relevance of the topic. The psychological-ontological background provides a framework to understand a really complex phenomenon, "digital identity" that can support self-esteem and self-authority. With just a short selection we observed a very wide range of research projects about it. Finally, we presented a short summary of the research-in-progress concerning digital identity goals, motivations and activities. We have mapped the major experiences and cases then highlighted the complexity of the two segments' future-oriented strategies.

The next goal is to complete the South-East Asian research module in various social-business-cultural contexts for completing the exploratory phase of this project. We compare the results on a 60 interviews' corpus to prepare large-scale research in complex digital identity strategy. Our purpose is to map universal digital identity goals, motivations, practices and activities for online

reputation and save - and point out instructive and forward solutions.

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The impact of classroom climate on undergraduates' self-regulated learning and perceived competence with motivation as mediator

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Classroom is the environment where students interact and learn. Level of engagement in class can make a noticeable difference of student's performance. This study investigates the impacts of classroom climate on perceived competence of university students and self-regulated learning strategies through the mediating effect of motivation. Using convenience sampling, 106 of university students in Hong Kong participated and completed a set of adapted questionnaire. The result shown autonomy support in class significantly predict to both intrinsic and extrinsic motivation. Intrinsic motivation has positive association with self-regulated learning and perceived competence. To conclude, a statistically significant relationship of students' autonomy support in classroom influence learning strategies and perceived competence by mediating effect of motivation is found. The study suggests the importance of autonomy provided to students and contributes to possible factor to help students' academic performance.

Keywords: Classroom Climate, Motivation, Self-regulated Learning.

1. Introduction

Students' performance has always been a main concern. While the progress and result of people learned is investigated, the factors contributing to their performance cannot be ignored. Wood[1] reported that class support affect students' performance. Learning in classroom, teacher provides adequate support and care can enhance students' performance. University of Rochester[2] also reported that student's academic success is contributed by their social interaction in class. When student fulfill their needs of strong relationship in class, they may have a better sense of competence. To investigate how in-class