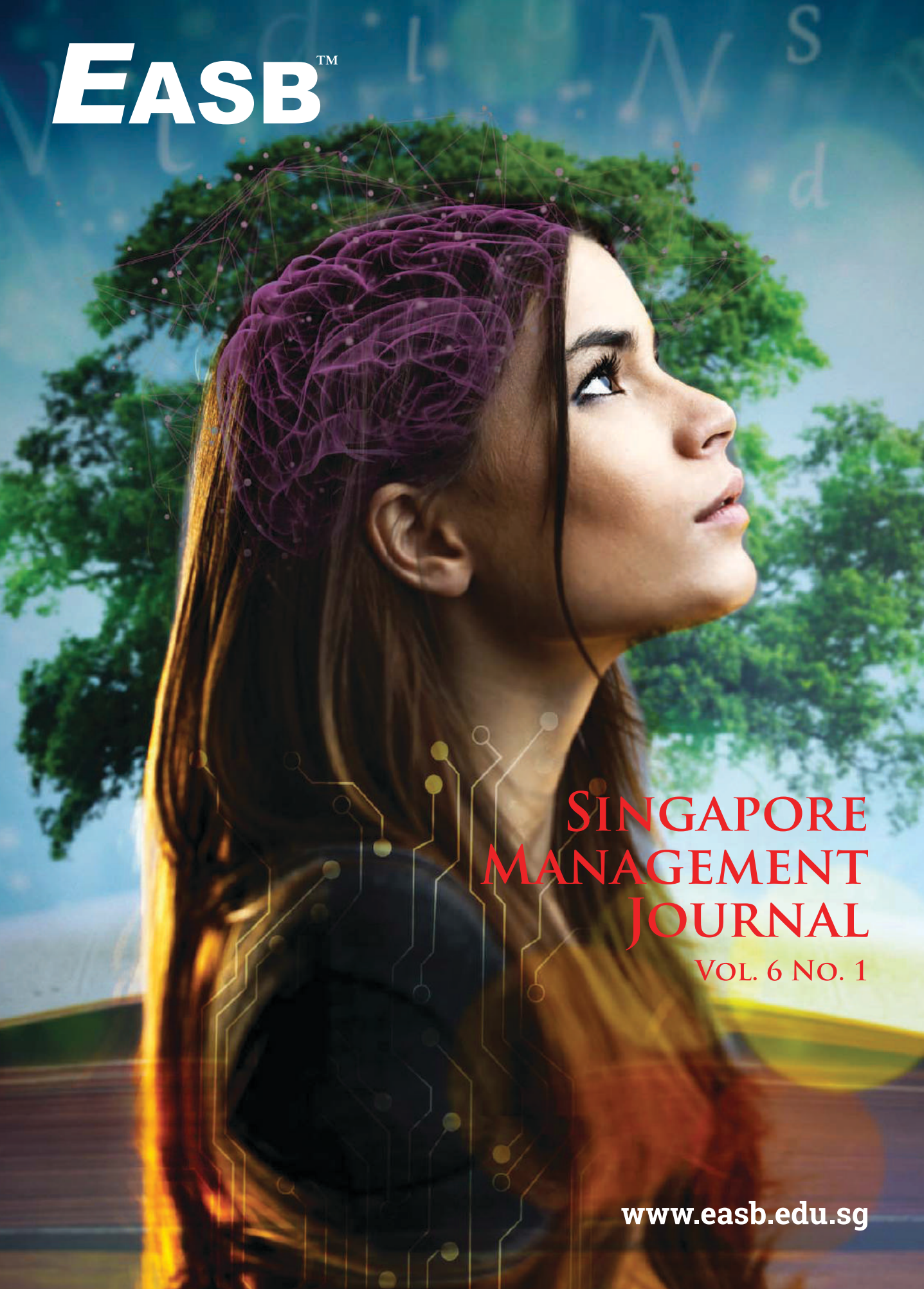
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Editorial Board

Editorial Comment

Research as a process of creating knowledge, information and justification for action, prepares and guides interested parties for relevant and more productive endeavours, all in the direction of improved competitiveness, efficiencies and effectiveness. In its application, it privileges creativity and sustaining and disruptive innovation.

Not many people may think this way but research is important and indeed, is an integral part of the working of a democratic society in its drive towards progress and development. Business enterprises, in particular, sponsor research to help them build and market the better mouse-trap in their relentless pursuit of greater profitability and higher market shares. They justify their actions on the moral grounds of contributing to a better future, of promoting human values, and advancing human welfare and being. They utilize research findings as fostering Habermas's "forceless force of the better argument"; an empirically-based pragmatic accounting of human action as a primary way of relating to the world through structures of experience; actions that help us to better cope with the challenges inherent in the world of business, financial and economic realities.

So as readers review the research reports in this issue, they will note the practicality of concerns that managers and leaders face, relating to relationships of power distribution and entrepreneurial development, service quality and customer satisfaction, problem-based learning and educational effectiveness, and work-life balance. They are welcome to further interact with the researchers through their email addresses in the biodata section of this journal.

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“Develop a passion for learning. If you do, you will never cease to grow.”

– Anthony J. D’Angelo

Students' Perceptions and Preferences of Problem-based Learning Environment

Dr Rodney Wong
MBA, MEd (Distinction), PhD, FCIM

Abstract

The overarching aim of this study was to examine the effectiveness of problem-based learning at the polytechnic level, in terms of graduates' perceptions and preferences of their learning environment, their attitudes towards the pedagogy and academic efficacy. Quantitative data were collected using two survey instruments assessing the learning environment and outcomes. To explain the quantitative overview, qualitative information was gathered using focus groups and phone interviews.

The sample involved a total of 447 graduates who had been exposed to problem-based learning (π=260) and lecture-based instruction (π=187), and a group of students who took part in the qualitative overview (π=42) just after their graduation. The findings generally suggested there was a significant preference in the use of problem-based learning at Polytechnic level of education with the exception of student cohesiveness. The qualitative findings were able to explain this deviation.

This paper describes the journey and the rationale undertaken in understanding students' perceptions and preferences in the application of problem-based learning at the polytechnic level in Singapore for daily teaching and learning activities.

1.0 Introduction

During the last decades, traditional learning environments had been criticised for not developing the prerequisites for professional expertise (Mandl, Gruber, & Renkl, 1996; Tynjälä, 1999). To meet this criticism, new and different teaching and learning approaches such as problem-based learning, project-based learning, case-based learning, etc were introduced and implemented. For this study, problem-based learning was identified to assess the extent of students' preferences and perceptions towards the pedagogy, which could improve students' outcomes in their attitudes towards learning, and among other benefits like self-efficacy (a persons' personal belief and self-confidence) that could lead to academic motivation and achievement.

Problem-based learning is a student-centred pedagogy in which students learn about a subject through the experience of solving an open-ended problem (Hmelo-Silver & Cindy, 2004). In the process students learn both thinking strategies and domain knowledge. The problem applied in problem-based learning, can be a management issue, an unexpected outcome or a description of a difficulty. Although problem-based learning was initially used in the fields of medical sciences and technology at tertiary level, it has since been incorporated into almost all fields of study and education levels.

In 2002 a new government polytechnic, the Republic Polytechnic opened its doors in Singapore, in which problem-based learning was implemented, as its main method of instruction across all its schools. To enable the facilitation of problem-based learning, a purpose-built campus, was constructed. The problem-based learning model used at McMaster University was modified to make it suitable for the polytechnic level training at the polytechnic.

2.0 Research objectives

The overarching aim of the study was to examine the effectiveness of problem-based learning in terms of its learning environments, and outcomes at the polytechnic level. To address this aim, four research objectives were delineated.

Being the first time a research was intended to assess students' perceptions of their learning environment created in this unique problem-based setting, the *first research objective* developed and validated two instruments suited for use for students at the polytechnic level. They were used to assess firstly, perceptions of their learning environment, and secondly, their outcomes associated with attitudes and academic efficacy.

The *second research objective* expanded on the claim from past studies that an appropriate learning environment had a direct impact on students attitudes and academic motivation (Major & Palmer, 2001; Schmidt, Dauphinee & Patel, 1987) It was only natural that administrators, course planners, academics and parents in Singapore would want to clarify what aspects of the learning environment were likely to improve student outcomes. To examine these relationships, the second research objective was delineated to determine whether there were associations between the natures of polytechnic-level learning environments and students' outcomes, in particular their attitudes and academic efficacy.

With the validated instruments and having determined associations between the natures of polytechnic level learning environments and student attitudes, the study was ready to progress to the next stage, setting the tone for the *third research objective*. It took into account whether exposing students to problem-based learning at the polytechnic would bring shifts in their perceptions of the learning environment or improvements in their attitudes and learning efficacy. With this in mind, the third research objective was delineated to investigate the effectiveness of problem-based learning in terms of students' perceptions of their learning environment, and thus, their attitudes towards the pedagogy, and academic self-efficacy beliefs that could provide information for more engaging and effective instruction.

The final and *fourth research objective* focussed on the Person-Environment fit relationship. The contributions of the person and environment to stress had been formalised in the person-environment (P-E) theory of stress (Caplan, 1983, 1987a; Caplan & Harrison, 1993; French, Caplan, & Harrison, 1982; French, Rodgers, & Cobb, 1974; Harrison, 1978, 1985). The core premise of P-E fit theory was that stress arose not from the person or environment separately, but rather by their fit or congruence with one another. It was the degree to which individuals and environmental characteristics

matched. In theory, then, the environmental demands were likely to impact on a range of outcomes. Therefore, this study sought to examine the person-environment fit for graduates exposed to problem-based learning when compared to those who were not. Accordingly, the fourth research objective was delineated to examine the effectiveness of problem-based learning in terms of the person-environment fit. The study will thus provide a conceptual overview of P-E fit theory, defining its core constructs and examining its basic mechanisms to identify the significant areas of the misfit in the practice of problem-based learning and a result on its outcomes.

3.0 Research methods

The research involved a mixed-methods approach in which qualitative data were used to help provide insights into and explain the quantitative results, as recommended by Creswell and Plano-Clark (2007). This approach had been used in numerous past learning environment studies with much success and considerable benefits (Aldridge, Fraser & Huang, 1999, Bell & Aldridge, 2014; Tobin & Fraser, 1998).

3.1 Collecting quantitative data

In collecting quantitative data, two instruments were developed. The first, the Problem-Based Learning Environment survey (PeBLEs), comprised eight scales: Student Cohesiveness, Lecturer/Facilitator Support, Involvement, Task Orientation, Cooperation, Equity, Young Adult Ethos, and Personal Relevance. Each scale included six items, making a total of 48 adapted from the WIHIC (which will be discussed in Section 4.1). The second instrument, the Attitude Outcomes Questionnaires (AOQ) was used to assess student outcomes and comprised two scales, Attitudes Towards the Pedagogy and Academic Efficacy. Each scale of the AOQ had six items, making a total of 12.

3.2 Gathering qualitative data

The second phase of the study involved the gathering of qualitative data using focus group meetings and telephone interviews with graduates who had been exposed to the problem-based learning environment. Eight groups of five or six graduates who had

been exposed to problem-based learning were involved in the focus group meetings, providing a total of 42 graduates. Ten open-ended questions, carefully developed, as recommended by Morgan, Kreuger, and King (1998) and Krueger and Casey (2009), were used to increase the likelihood of generating discussion and different points of views and opinions (Greenbaum, 1999).

The telephone interviews that followed, comprised a semi-structured format, encouraging the participants to talk freely but with reference to the original list of questions to ensure consistency between interviews. This helped us to further understand the issues or questions raised (Groves, Biemer, Lyberg, Massey, Nicholls & Waksberg, 1988).

4.0 Literature review

This section summarised the development of the two surveys and the evidence provided to support their reliability and validity. The development of the first instrument, the Problem-based Learning Environment survey (PeBLEs) began with a literature review to help to identify aspects of the learning environment considered important in the assessment of both a problem-based learning environment and a lecture-based learning environment. In developing the questionnaire, a careful selection of scales was made to ensure coverage of Moos's (1974) scheme for classifying the dimensions of any human environment. The PeBLEs survey drew extensively on six scales of the What Is Happening In this Class? (WIHIC) questionnaire and on a scale from the Technology Rich Outcomes Focused Learning Environment Inventory (TROFLEI) questionnaire. Another was taken from the Constructivist Learning Environment (CLES) questionnaire. The final version of the PeBLEs comprised eight scales: Student Cohesiveness, Lecturer/Facilitator Support, Involvement, Task Orientation, Cooperation, Equity, Young Adult Ethos and Personal Relevance. Each of the eight scales had six items, providing a total of 48 items. Items of the PeBLEs were responded to using a five-point frequency response format of Almost Never, Seldom, Sometimes, Often and Almost Always.

The second instrument, the Attitudes Outcomes Questionnaire (the AOQ), included

two scales (each with six items): the Attitudes Toward the Pedagogy scale, adapted from the TOSRA, the Test of Science Related Attitudes, and the Academic Efficacy scale, adapted from the Morgan-Jinks Student Efficacy Scale (MJSES). The items in these two scales were modified to the same five-point frequency response scale as the PeBLEs to avoid confusion.

The next phase of the literature review focussed on studies pertaining to the application of learning environments and their outcomes and the evaluation of educational innovations promoting teaching and learning.

4.1 Environment-outcomes association

One of the strongest themes emerging from these studies had been investigations involving associations between students' cognitive and affective learning outcomes and their perceptions of their psychosocial learning environment. Fraser (2007) suggested that teachers and lecturers who wanted to improve teaching in schools and universities should not ignore the strong influences that the learning environment had on students' behavioural and attitudinal outcomes. Other recent studies had shown that the more favourable students perceived their classroom-learning environments to be, the better were their attitudes towards learning (Chionh & Fraser, 2009; Martin-Dunlop & Fraser, 2008). These findings thus suggested that learning environments were strong predictors of both student achievement in attitudes and efficacy even when a comprehensive set of factors was held constant (Fraser, 2012).

4.2 Evaluation of Educational Innovations

In past research, classroom environment instruments had been used as a source of process criteria in the evaluation of educational innovations to evaluate curriculum change, educational programmes and teaching and learning innovations (Fraser, 2012). In some cases, studies had successfully used learning environment dimensions to examine the success of these reform efforts. For example, in Australia (Aldridge & Fraser, 2008) and South Africa (Aldridge, Laugksch, Seopa & Fraser, 2006), researchers had used learning environment instruments as a source of process criteria in evaluating the introduction of outcomes-focused curricula in science. In another example, Kim, Fisher and Fraser (1999) used learning environment dimensions to evaluate whether

the introduction of new curricula designed to be more constructivist has influenced the classroom learning environment. The study suggested that efforts at curriculum reform had produced some positive effects, and found statistically significant relationships between classroom environment and student attitudes.

The present study drew on and extended from past research to examine the effectiveness of using problem-based learning at the polytechnic level in Singapore.

5.0 Summary and discussion of major findings

The following sections provided a summary of the major results pertaining to the four research objectives. This section was reported in the corresponding manner explaining the findings with respect to the four research questions.

5.1 Research Objective One

To ensure that the PeBLEs was indeed the multi-scale questionnaire that it was designed to be, several tests were carried out, to test the validity and reliability of the PEBLEs.

5.1.1 The factor structure of PEBLEs

Principal axis factor analysis with varimax rotation was used to examine the factor structure. Separate analyses were carried out for the actual and preferred data. The criteria for retaining an item was based on Stevens (2001) and Field (2009) recommendation, this being that it must have an absolute value of at least 0.40 on its own scale and less than 0.40 on any other scale. Using this criterion led to the removal of four items for both the actual and preferred versions. These items were omitted from all further analysis.

Removal of these items led to a refined structure that comprised 44 items in the eight *a priori* scales for both the actual and preferred versions. These 44 items had a factor loading of at least 0.40 on their *a priori* scale and on no other scale for both the actual and preferred version of the instrument.

5.1.2 Internal Consistency Reliability

In developing the questionnaire, it was important to establish that the items in a given scale assessed a common construct. If this were the case, then the scales could be considered sufficiently homogenous or having acceptable internal consistency. To provide an estimate of the internal consistency reliability, the Cronbach alpha coefficient was calculated.

The scale reliability estimates reported in Table 1 ranged from 0.80 to 0.91 for the actual version and 0.82 to 0.93 for the preferred version for the individual scales. Given that an Alpha coefficient of 0.70 or above was widely considered to be an acceptable value (Nunnaly, 1978), these estimates were considered to be satisfactory. Further, these reliability estimates were comparable to those of past studies that have used the WIHIC (Aldridge & Fraser, 2000; 2003), (from which the majority of scales were drawn).

Table 1: Internal consistency reliability for the modified PeBLEs

Scale	No. of Items	Alpha Reliability	
		Actual	Preferred
Student Cohesiveness	6	0.82	0.82
Lecturer/Facilitator Support	5	0.86	0.83
Involvement	6	0.90	0.92
Task Orientation	4	0.83	0.86
Cooperation	5	0.80	0.85
Equity	6	0.91	0.93
Young Adult Ethos	6	0.86	0.90
Personal Relevance	6	0.89	0.92

N =447 graduates

5.1.3 Discriminant Validity

Discriminant validity assessed the extent to which a scale was unique in the dimension that it covered, implying that the construct was not included in another scale of the instrument. Using the data collected the figures, reported in Table 2 ranged from 0.37 to 0.48 for different scales in the actual version and from 0.37 to 0.53 for different scales in the preferred version. According to Calkins (2005) these results

indicated a range of low (0.30 to 0.50), to moderate (0.50 to 0.70) correlations. Whilst these results indicated that the raw scores from the PeBLEs assessed were somewhat overlapping aspects of the learning environment, the factor analysis supported the independence of the factor scores on the eight scales.

Table 2: Discriminant Validity (mean correlation with other scales) for the modified PeBLEs

Scale	No. of Items	Mean Correlation with Other Scales	
		Actual	Preferred
Student Cohesiveness	6	0.37	0.37
Lecturer/Facilitator Support	5	0.43	0.49
Involvement	6	0.41	0.46
Task Orientation	4	0.40	0.51
Cooperation	5	0.47	0.50
Equity	6	0.41	0.52
Young Adult Ethos	6	0.48	0.53
Personal Relevance	6	0.41	0.48

N=447 graduates

5.1.4 Factor structure of the AOQ

Principal components factor analysis followed by varimax rotation resulted in a refined version of the two scales of the AOQ. Two items did not meet the criterion recommended by Field (2009) and Stevens (2001), and were omitted from all further analysis. The remaining 10 items had a factor loading of at least 0.40 on its own scale and less than 0.40 on the other scales. The percentage of variance for the two scales was 27.41% for Attitudes Towards the Pedagogy and 27.54% for Academic Efficacy, with the total variance accounted for being 55.95%. The eigenvalues were both greater than one, implying that the scores on the respective component were reliable (Kaiser, 1960).

5.1.5 Internal Consistency Reliability

The Cronbach alpha coefficient, used as an index of internal consistency reliability for each of the two scales, is reported in Table.3. The scale reliability estimate was 0.86 for the Attitude Towards the Pedagogy scale and 0.87 for the Academic Efficacy scale and were considered to be acceptable, based on Nunnaly's (1978) criteria.

Table 3: Internal Consistency Reliability (Cronbach Alpha Coefficient), for Student Attitude towards the Pedagogy and Academic Efficacy Scales

Scale	Number of items	Alpha reliability
Attitude Towards the Pedagogy	5	0.86
Academic Efficacy	5	0.87

N=447 graduates

Overall, the AOQ exhibited a good factor structure. The internal consistency for both scales exceeded 0.80, providing strong support for the reliability and validity of the second instrument.

5.2 Research Objective Two

The second research objective was to examine whether relationships existed between the graduates' perceptions of their learning environment and attitudes and efficacy. Simple correlation and multiple regression analysis were used.

Table 4: Simple Correlation and Multiple Regression Analyses for associations between the Learning Environment and Attitudes and Academic Efficacy

Scale	Environment-outcomes Association			
	Attitude towards the Pedagogy		Academic Efficacy	
	r	*β*	*r*	β
Student Cohesiveness	0.41**	0.13**	0.40**	0.11**
Lecturer/Facilitator Support	0.46**	0.07	0.43**	0.07
Involvement	0.44**	0.08*	0.58**	0.35**
Task Orientation	0.48**	0.17**	0.48**	0.22**
Cooperation	0.50**	0.06	0.44**	0.01
Equity	0.46**	0.08	0.39**	0.02
Young Adult Ethos	0.50**	0.03	0.46**	0.01
Personal Relevance	0.61**	0.36**	0.47**	0.17**
Multiple Correlation (*R*)		0.71**		0.69**

*$p<0.05$ **$p<0.01$

N= 449 graduates.

The results of the simple correlation analysis indicated that all eight of the learning environment scales were positively and significantly related to both the attitude and efficacy scales (Table 4). The interpretation of the standardised regression weights indicated that three of the scales, Student Cohesiveness, Task Orientation and Personal Relevance, were significant independent predictors of both Attitudes Towards the Pedagogy ($p<0.01$) and Academic Efficacy ($p<0.01$); and one scale, Involvement, was a significant independent predictor of Academic Efficacy ($p<0.01$). These results were consistent with past studies that found students' perceptions of their learning environment were positively related to Academic Efficacy (Aldridge & Fraser, 2008; Bell, 2013).

5.3 Research Objective Three

The third research objective sought to investigate the effectiveness of problem-based learning in terms of perceptions of the learning environment, attitudes and self-efficacy. In summary, with reference to Table 5 below, the effect sizes suggested educationally important differences between the learning environments perceived by graduates exposed to the different instruction types. Graduates exposed to problem-based learning perceived more Involvement, Task Orientation, Cooperation, and Young Adult Ethos. Further, the graduates exposed to problem-based learning had statistically significantly ($p<0.05$) higher scores for both the Attitude Towards the Pedagogy and Academic Efficacy scale. It was interesting to note, however, that, for the Student Cohesiveness scale, graduates exposed to lecture-based learning scored statistically significantly ($p<0.05$) higher than their counterparts exposed to problem-based learning. Given that, in a problem-based learning environment, the students' ability to work together was an important factor, this finding was unexpected. The next section provided the results of analysis of the qualitative data and insights into the quantitative overview.

Table 5: Average Item Mean, Average Item Standard Deviation, Effect Size, and Differences for Instruction Types (Effect Size and MANOVA Results) for PeBLEs and AOQ

Scales	Average Item Mean[a]		Average Item Standard Deviation		Difference	
	Problem-based	Lecture-based	Problem-based	Lecture-based	Effect Size	*F*
PeBLEs Student Cohesiveness	3.76	3.92	0.60	0.65	-0.35	7.38*
Lecturer/ Facilitator Support	3.45	3.38	0.68	0.71	0.10	1.16
Involvement	3.50	3.00	0.75	0.87	0.62	43.09**
Task Orientation	4.01	3.80	0.66	0.78	0.29	9.18**
Cooperation	3.77	3.63	0.64	0.71	0.21	4.97*
Equity	3.72	3.81	0.67	0.79	-0.12	1.83
Young Adult Ethos	4.09	3.95	0.62	0.65	0.22	5.16*
Personal Relevance	3.50	3.40	0.80	0.74	0.13	1.87
AOQ Attitude Towards the Pedagogy	3.61	3.46	0.71	0.72	0.21	4.42*
Academic Efficacy	3.62	3.35	0.70	0.73	0.38	19.07**

*$p<0.05$ **$p<0.01$

N=260 graduates from a problem-based learning environment and 187 graduates from a lecture-based learning environment

[a] Average item mean=scale mean divided by the number of items in that scale.

5.3.1 Insights into the Quantitative Overview

In the light of the quantitative findings, focus group meetings and telephone interview sessions were used to provide insights into the results. Overall, the qualitative information indicated that, in a problem-based learning environment, there was a strong sense of cooperation and teamwork. In addition, the approach used in problem-based

learning provided students with direction and focus. Some graduates felt that problem-based learning encouraged self-directed learning, as an approach where learners took responsibility for their own learning process. They were, however, not always clear on what was expected of them and, in some cases, felt that they were not confident that they were doing the right thing.

5.4 Research Objective Four

Whereas the previous section reported the MANOVA results and effect sizes to examine whether differences existed in terms of graduates' perceptions of the two instruction types, this section reported the results pertinent to Research Objective 4, which sought to identify whether differences existed in terms of the person-environment fit.

Table 6: Adjusted and Unadjusted Means and Variability for Actual Learning Environment with Preferred Learning Environment as a Covariate

Scale	Problem-based				Lecture-based			
	Unadjusted		Adjusted		Unadjusted		Adjusted	
	Mean	SD	Mean	SE	Mean	SD	Mean	SE
Student Cohesiveness	3.76	0.60	3.78	0.03	3.92	0.65	3.90	0.04
Lecturer/Facilitator Support	3.45	0.68	3.44	0.04	3.38	0.71	3.40	0.05
Involvement	3.50	0.75	3.36	0.04	3.00	0.87	3.20	0.04
Task Orientation	4.01	0.66	3.97	0.04	3.80	0.78	3.85	0.04
Cooperation	3.77	0.64	3.73	0.03	3.63	0.71	3.69	0.04
Equity	3.72	0.67	3.72	0.03	3.81	0.79	3.81	0.04
Young Adult ethos	4.09	0.62	4.08	0.03	3.95	0.65	3.97	0.04
Personal Relevance	3.50	0.80	3.51	0.04	3.40	0.74	3.39	0.05

N= 260 graduates from a problem-based learning environment and 187 graduates from a lecture-based learning environment.

Table 7: Difference between Actual Scores for Scales of the PeBLEs after Adjustment for Preferred Scores

Scale	Difference between instruction types	
	Effect Size	*F*
Student Cohesiveness	0.01	4.93*
Lecturer/Facilitator Support	0.01	0.38
Involvement	0.02	6.86**
Task Orientation	0.01	5.60*
Cooperation	0.01	0.77
Equity	0.01	3.00
Young Adult ethos	0.01	4.97*
Personal Relevance	0.01	3.32

*p<0.05, **p<0.01

N= 260 graduates from a problem-based learning environment and 187 graduates from a lecture-based learning environment.

After adjustment for preferred learning environment, there were statistically significant differences (reported in Table 7) between the two instruction types for four of the learning environment scales: Student Cohesiveness (F=4.93, p<0.05); Involvement (F=6.86, p<0.01); Task Orientation (F =5.60, p<0.05); and Young Adult Ethos (F=4.97, p<0.05). When adjusting for the preferred learning environment, all scales with a statistically significant difference, with the exception of Student Cohesiveness, scored higher for those graduates who had been exposed to a problem-based learning environment when compared to those from a more lecture-based learning environment.

The Person-environment fit had important implications for academics and planners, because it was critical for them to establish and maintain a 'good fit' between students and their learning environment. In addition, studies had shown that high levels of 'fit' could lead to positive outcomes and confirmed the universal relevance of the fit phenomenon (Kristof-Brown & Billsberry, 2013).

This study found significant differences in the person-environment fit for four of the eight learning environment scales. For three of these scales, graduates exposed to

problem-based learning had a more positive person-environment fit. These findings added support to the use of problem-based learning at the polytechnic level.

6.0 Significance of the results and limitations

The study reported in this thesis was significant to the field of learning environments. It was the first study in Singapore to examine students' preferences and perceptions of their learning environment and outcomes in evaluating the effectiveness of problem-based learning at the polytechnic level. Further, the research has provided evidence to support the sound psychometric properties of a newly-developed instrument, the PeBLEs and the AOQ could be used to assess the learning environment at the polytechnic level. Finally, although much learning environment research had been carried out at the high school level, a limited amount had been carried out at the post-secondary level. To the best of my knowledge, this was the first study within the field of learning environments to be undertaken at the polytechnic level using problem-based learning.

Finally, it was important to note that this article was an abridged version of the thesis and may not have the full explanation of occurrences and findings as described in this paper, and particularly subjected to its word limit.

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“Change begins at the end of your comfort zone.”

– Roy T. Bennett

Unequal Distribution of Power: Consequences for Indian Entrepreneurial Development

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Abstract

Power distance is the extent to which a society accepts the fact that power in institutions and organizations is distributed unequally. Power distance has a strong impact on organisational as well as personal functioning. The study describes the unequal distribution of power among entrepreneurs and its consequences for entrepreneurial development. Exploratory factor analysis was used to identify factors behind unequal distribution of power among entrepreneurs. Bi-Variate analysis was used to examine the effectiveness of unequal distribution of power on entrepreneurial development. The specific influences of age, gender, academic qualification and motivation ethnic diversity were examined, using an instrument to measure Hofstede's cultural dimensions of power distance on entrepreneurship.

Keywords: Power distance, Entrepreneurial development, Motivation ethnic diversity

Introduction

Hofstede's Power distance index measures the extent to which the less powerful members of organisations and institutions (like the family) accept and expect that power is distributed unequally. The primary aspect in Hofstede's model which represents the significance of identical power in the society is the centre. In an elevated power distance altitude, inequality is tolerable. The lack of power distance would result in a high rate of innovation and resultantly higher level of entrepreneurial intentions in the citizens of the country. Countries having lower power distance scored higher on the innovation index and on entrepreneurial intentions e.g. U.S.A. Hofstede, 1984**,** defined the concept thus: The power distance between a boss B and a subordinate S in a hierarchy is the difference between the extent to which B can determine the behaviour of S and the extent to which S can determine the behaviour of B. He used the different PDIs of countries and regions to describe their general societal norms into "low-PDI" and "high-PDI" cultures. In "high-PDI" cultures, the less powerful members had to absolutely obey the more powerful members and the subordinates accepted authoritative management methods. In contrast, in "low-PDI" cultures, the social members thought that power inequality should be reduced to a minimum, and the subordinates should focus on the tasks assigned to them rather than on the importance of absolute obedience to the superiors.

Researchers argued that entrepreneurial activity should be higher in low power distance countries (Hayton et al., 2002). High power distance countries, on the other hand, were associated with maintaining the status quo (Gelekanycz, 1997) and there was low regard for the initiatives and innovations created by new business ventures. Moreover, high power distance countries distributed resources unequally, making it difficult for potential entrepreneurs of low power groups to take advantage of profitable opportunities. This reduced access to resources, skills, and information for low-position potential entrepreneurs accounted for both the low existence and the discovery of business opportunities (Kirzner, 1997). Hofstede believed that power distance was learned early in families. In high power distance cultures, children were expected to be obedient toward parents versus being treated more or less as equals. In high power distance cultures, people were expected to display respect for those of higher status. Power distance influenced the extent to which power, prestige, and wealth were distributed within a culture.

Cultures with high power distance had power and influence concentrated in the hands of a few rather than distributed throughout the population. These countries tended to be more authoritarian and may communicate in a way to limit interaction and reinforce the differences between people.

However, power distance can have a positive impact on entrepreneurial behaviour as well. Power distance can affect entrepreneurial activity positively because the only way to be independent was to be an entrepreneur. Entrepreneurship can be used as one of the tools to struggle for independence and to increase one's power position.

Empirically, the relationship between power distance and entrepreneurial activity was inconsistent. For example, while Shane, 1992 and Dwyer, Mesak and Hsu, 2005 reported positive relationships between power distance and innovation, (Shane, 1993) reports negative relationships. People in more power distant countries should be more likely than people in other countries to prefer business takeovers to start-ups. Established firms were typically characterized by a formal or informal power structure that had evolved over time and was accepted by most members of the organization. Changes in the structure and hierarchy of an organization may be difficult or impossible in the short term (Colombo & Delmastro, 2002; Teece, 1980); may disturb the social and power equilibrium (Milgrom, 1988), and could lead to (short-term) performance losses of a firm. Therefore, the decision to take over a firm required a willingness to accept a given hierarchy and pursue changes carefully and slowly. Individuals who were willing to accept these conditions were more likely to be found in countries with a high power distance. Any individual who was willing to embark on an entrepreneurial career path faced the critical question of whether to create a completely new venture or to buy an existing and established firm (Parker & Van Praag, 2012). However, the choice of one option over another may not be straight forward because the options differred along at least two dimensions: uncertainty and potential for self actualization. Starting a new venture was associated with a higher uncertainty than taking over an already established firm. Hiring employees and creating a new organization were uncertain endeavours by nature. Moreover, new ventures sufferred from the liabilities of newness (Brüderl & Schüssler, 1990; Stinchcombe, 1965) and smallness (Aldrich & Auster, 1986).

Review of Literature

(Hofstede, 1980) identified power distance as the extent to which a society accepted and viewed as inevitable a functional human inequality in power, wealth and prestige. (Keltner et al., 2003) presented broad reviews arguing that all relationships involved hierarchy, and that power was a pervasive part of human society. (Fiske, 2001) conducted a series of studies demonstrating that the processing of information differed across situations in which power was equal, power was unequal and one had it, and power was unequal and one did not have it. Various studies suggested that competitiveness, internality, Protestant work ethic beliefs and work centrality were higher in less developed, collectivist and high power-distance cultures in which materialist values were still important (Furnham, Bond, Heaven et al., 1993). The power dimension was related to how power was organized in society in general, including differential rewards between high and low status people. Examples of low power-distance countries were Denmark and New Zealand and of high power-distance countries, Malaysia and Guatemala (Hofstede, 2001). Power distance at the individual level (individual acceptance of unequal distribution of power) was not to be confused with power distance at societal level (Farh et al., 2007). (Tyler, Lind & Huo, 2000) suggested that people cared most strongly about how they were treated by authorities when they had personalized connections with them.

Power distance beliefs shaped social connections not only to authorities, but also to organizations. (Fiske, 1991) suggested that all societies had some access to relationships that were equitable and were based in differential power. For example, ease of interaction with strangers and obligation to in-groups may be the results of individualism and collectivism, or they may be due to equality and power dependence. Equality relationships and power differential relationships were basic to social units that made up societies like family, school or work; one's peer and sibling relationships and interactions between racial, ethnic and religious groups (Oyserman, 2006). Kate Brown (2003) attempted to develop an instrument to measure any differences between entrepreneurs and non-entrepreneurs with respect to Hofstede's cultural dimensions of individualism, power distance, masculinity, and uncertainty avoidance. Research suggested that entrepreneurs could be distinguished from non-entrepreneurs on the basis of attitudes reflecting individualism and power distance. The general finding that there were differences

between entrepreneurs and others which could be classified as cultural was particularly relevant for policy makers. An understanding of the attitudes and beliefs that differentiated entrepreneurs from others was important to the extent that growth was influenced by entrepreneurial activity. Interventions which did not take account of these differentiating attitudes, including the differences between countries, were likely to be less successful than those which did. Further, interventions that were targeted specifically to entrepreneurial outcomes may run contrary to the attitudes and beliefs of non-entrepreneurs. Policy makers might improved the efficacy of their intervention programs by balancing these differences in the design of economic development initiatives. (Sajjad et al., 2012) emphasised that entrepreneurship was a key factor for the development of any country. This study focused on the entrepreneur's intention, the influence of the national culture on the entrepreneur's intention, perceived feasibility, and desirability and the influence of entrepreneurial experience on the intention of any individual to start a new business. Educational support increased entrepreneurial performance and efficiency. It was suggested that the education system in universities and colleges should help to improve the skill and knowledge of students regarding entrepreneurship, as well as direct students attention and focus on the desirability and feasibility entrepreneurship as a career path. This could be achieved by conducting seminars on entrepreneurship led by entrepreneurs whose sharing of experiences could motivate them. (Cox et al., 2011) showed that culture was associated with a nation's ability to manage economic concerns with maintenance of its environment. Specifically, lower power distance, individualistic cultures (cultures placing a greater value on egalitarianism, freedom of expression, and individual initiative) may be more concerned with balancing economic wealth with environmental sustainability. This research suggested that as concern for quality of life issues increased, developing nations which initially focused on improving economic wealth at the expense of environmental protection may shift cultural values in the direction of a balance between economic prosperity with environmental sustainability.

Objectives

The broad objectives of the study were as follows:

1. To identify and measure the various dimensions of unequal distribution of power among entrepreneurs.

2. To examine the effectiveness of unequal distribution of power in entrepreneurial development.

Hypothesis

The broad hypotheses of the study were as follows:

H_{01}: There is no impact of entrepreneurial decision making on entrepreneurial development.

H_{02}: There is no impact of organisational structure, approach and importance on entrepreneurial development.

Research Methodology

The present study was based on the use of both primary and secondary data in an exploratory research design. The secondary data was collected from published and unpublished business reports, magazines, journals, books, historical studies, articles, state & central government report and internet. The review of literature for this study was completely based on the collection of secondary data. Primary data was collected using a questionnaire distributed to about 1500 respondents from different places.

Sampling procedure and sample size: In order to stratify the heterogeneity of population Stratified Random Sampling was used to stratify the sample on the basis of various demographic parameters of the respondents. The demographic profile of the 1500 respondents was analysed.

Area of Study: This study was conducted in selected districts of Uttarakhand, Delhi, NCR, Haryana and Punjab on the basis of concentrations of small and medium scale Industries. The types of small and medium scale industries considered for the study were agro products, textile & hosiery products, food products & beverages, electronic & electrical.

Reliability Analysis: The reliability of scale and inner consistency of extracted factors were tested, using Cronbach's alpha coefficient. Cronbach's alpha coefficient value for the data set was 0.683, indicating acceptable scale reliability. The data set was suitable for factor analysis if Kaiser-Meyer-Olkin Measure of Sampling

Adequacy (KMO) value was .6 or above & The Bartlett's Test of Sphericity value should be significant (i.e. the Sig. value should be .05 or smaller).

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.600
Bartlett's Test of Sphericity	Approx. Chi-Square	4400
	Df	36
	Sig.	.000

In this case the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) value was .600. The Bartlett's test of Sphericity is significant, χ^2 (91) = 4400, p=.000, indicating that the correlation matrix was not an identity matrix & therefore Factor analysis was appropriate.

Statistical Tools: Factor analysis was used to identify the underlying factors behind power distance. Unequal distribution of power among the entrepreneurs and its consequences on entrepreneurial development was tested with the help of tests of significance, besides using various other statistical techniques like chi-square, cross tabulation, etc.

Analysis and interpretation

Factor analysis was performed on the nine (9) power distance attributes included in the five point Likert- scale questionnaire to determine the underlining dimensions of power distance. Principal Component Analysis with Varimax rotation and Eigen value equal to or greater than 1 was used. The approach was to retain items with factor loadings of equal to or above 0.50 (Hair et al., 1998).

Table 2: Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.021	33.564	33.564	3.021	33.564	33.564	2.941	32.673	32.673
2	1.308	14.533	48.097	1.308	14.533	48.097	1.271	14.120	46.792
3	1.242	13.799	61.897	1.242	13.799	61.897	1.255	13.941	60.734
4	1.117	12.408	74.304	1.117	12.408	74.304	1.221	13.571	**74.304**
5	.847	9.414	83.718						
6	.674	7.491	91.209						
7	.318	3.538	94.747						
8	.291	3.235	97.981						
9	.182	2.019	100.000						

Extraction Method: Principal Component Analysis.

The Eigen values for factor 1, 2, 3 and 4 were 3.021, 1.308, 1.242 and 1.117 respectively. Percentage of variance for factor 1, 2, 3 and 4 were 32.673, 14.120, 13.941 & 13.571 respectively. The four factors extracted from 9 power distance attributes had cumulative percentage up to 74.304% of the total variance.

Table 3: Rotated Component Matrix

	Component			
	1	2	3	4
Centralization Of Authority Key To Your Business Success	**.882**			
Employee Disagreement To Decisions	**.803**			
No Delegation Of Important Task To Employees	**.798**			
Least Consultation For Decisions With Subordinates	**.773**			
Importance Of Consulting Supervisors For Decisions		**.867**		
Importance Of Good Physical Working Conditions		**.554**		
Redesign Organization Structure For Better Coordination			**.780**	
Autocratic Approach To Take Critical Decisions			**.738**	
Subordinate Afraid Of Expressing Disagreement				**.801**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Only factors with an Eigen value of 1.0 or more with factor loading 0.5 were retained for further investigation. The first factor was the most important factor

with Eigen value of 3.021 which explained 32.673% of the variance. Table 3: The statements "Centralization of authority key to your business success" (.882), "Employee disagreement to decisions" (.803), "No delegation of important task to employees" (.798) & "Least consultation for decisions with subordinates" (.773) were attributes of decision making, hence this factor was named as **Decision making**. The second factor with Eigen value 1.308 explained 14.120% of the variance. The statements, "Importance of consulting supervisors for decisions" (.867) and "Importance of good physical working conditions" (.554) were named as the **Importance** factor. The third factor with Eigen value 1.242 explained 13.941% of the variance. The statements, "Redesign organization structure for better coordination" (.780) and "Autocratic approach to take critical decisions" (.738), constituted a factor named as **Organizational structure & approach**. The last factor with Eigen value 1.117 explained 13.571% of the variance. The statement, "Subordinate afraid of expressing disagreement" (.801) was named as **Fear**.

Parallel Analysis

Parallel analysis was used for determining the number of components or factors to retain from Principal Component Analysis. Four factors namely **Decision making**, **Importance**, **Organizational structure & approach**, and **Fear** were generated from the PCA. Eigen values were generated through Monte Carlo PCA for parallel analysis. A systematic comparison was made of the Eigen values from principal components analysis (PCA) and the corresponding criterion values obtained from parallel analysis. If the PCA value was larger than the criterion value from parallel analysis, we retained the factor; if it is less, we rejected it.

Tabled random data Eigen values with number of variables 9, number of subjects 1500 and number of replications 100 were generated through Monte Carlo PCA for Parallel Analysis. The results were summarized as follows:

Table 4: Parallel Analysis Result

Component Number	Actual Eigen Value from PCA	Criterion Value from Parallel Analysis	Decision
1	3.021	1.1174	*Accepted*
2	1.308	1.0780	*Accepted*
3	1.242	1.0487	*Accepted*
4	1.117	1.0246	*Accepted*

The results of parallel analysis supported the decision to retain the four factors for further investigation. They were F_1: **Decision making,** F_2: **Importance**, F_3: **Organizational structure & approach,** and F_4: **Fear** were retained for further analysis.

A cross-sectional Bi-Variate analysis was made for the elements with factor loading 0.5 & above in the underlying factors of Power Distance (F1: **Decision making**, F_2: **Importance**, F_3: **Organizational structure & approach**, and F_4: **Fear**) and the entrepreneurial development attributes in order to examine the effectiveness of Power Distance in entrepreneurial development. The Bi-Variate cross-sectional analysis results were tabled below:

Table 5: Proposed Relationship Summary

Proposed Relationship		Karl Pearson's Coefficient of Correlation (r)	Chi- Square (χ^2)	Result
	Power distance Factor Name			
	Decision Making			
Age	Centralization Of Authority Key To Your Business Success	**r = .213**	**χ^2 = 624.8**	***+Ve H_0 Rejected***
	Employee Disagreement To Decisions	r = .131	**χ^2 = 783.5**	***+Ve H_0 Rejected***
	No Delegation Of Important Task To Employees	r = .172	**χ^2 = 657.9**	***+Ve H_0 Rejected***
	Least Consultation For Decisions With Subordinates	**r = .244**	**χ^2 = 443.9**	***+Ve H_0 Rejected***
	Importance	**r = -.211**	**χ^2 = 231.6**	***-Ve H_0 Rejected***
	Importance Of Consulting Supervisors For Decisions			
	Importance Of Good Physical Working Conditions	**r = .120**	**χ^2 = 372.4**	***+Ve H_0 Rejected***
	Organizational Structure & approach	r = -.308	**χ^2 = 345.7**	***-Ve H_0 Rejected***
	Redesign Organization Structure For Better Coordination			
	Autocratic Approach To Take Critical Decisions	**r = .292**	**χ^2 = 498.0**	***+Ve H_0 Rejected***
	Fear	**r = .071**	**χ^2 = 337.3**	***+Ve H_0 Rejected***
	Subordinate Afraid Of Expressing Disagreement			

Gender	***Decision Making***	**r = .087**	**χ^2 = 42.493**	***+Ve H_0 Rejected***
	Centralization Of Authority Key To Your Business Success			
	Employee Disagreement To Decisions	**r = .173**	**χ^2 = 123.7**	***+Ve H_0 Rejected***
	No Delegation Of Important Task To Employees	**r = .075**	**χ^2 = 29.097**	***+Ve H_0 Rejected***
	Least Consultation For Decisions With Subordinates	**r = .041**	**χ^2 = 54.971**	***+Ve H_0 Rejected***
	Importance	**r = -.063**	**χ^2 = 12.305**	***-Ve H_0 Rejected***
	Importance Of Consulting Supervisors For Decisions			
	Importance Of Good Physical Working Conditions	**r = -.016**	**χ^2 = 10.822**	***-Ve H_0 Rejected***
	Organizational Structure & approach	**r = -.147**	**χ^2 = 57.640**	***-Ve H_0 Rejected***
	Redesign Organization Structure For Better Coordination			
	Autocratic Approach To Take Critical Decisions	r = -.018	**χ^2 = 81.348**	***-Ve H_0 Rejected***
	Fear	**r = .101**	**χ^2 = 38.256**	***+Ve H_0 Rejected***
	Subordinate Afraid Of Expressing Disagreement			
Academic Qualification	***Decision Making***	r = .092	**χ^2 = 262.8**	***+Ve H_0 Rejected***
	Centralization Of Authority Key To Your Business Success			
	Employee Disagreement To Decisions	r = .072	**χ^2 = 280.0**	***+Ve H_0 Rejected***
	No Delegation Of Important Task To Employees	**r = .144**	**χ^2 = 356.3**	***+Ve H_0 Rejected***
	Least Consultation For Decisions With Subordinates	r = .266	**χ^2 = 352.8**	***+Ve H_0 Rejected***
	Importance	r = -.169	**χ^2 = 142.3**	***-Ve H_0 Rejected***
	Importance Of Consulting Supervisors For Decisions			
	Importance Of Good Physical Working Conditions	**r = -.219**	**χ^2 = 300.8**	***-Ve H_0 Rejected***
	Organizational Structure & approach	r = -.175	**χ^2 = 322.6**	***-Ve H_0 Rejected***
	Redesign Organization Structure For Better Coordination			
	Autocratic Approach To Take Critical Decisions	**r = .128**	**χ^2 = 178.3**	***+Ve H_0 Rejected***
	Fear	**r = .127**	**χ^2 = 427.9**	***+Ve H_0 Rejected***
	Subordinate Afraid Of Expressing Disagreement			

Internal Motivation	***Decision Making***	**r = -.252**	**χ^2 = 532.0**	***-Ve H_0 Rejected***
	Centralization Of Authority Key To Your Business Success			
	Employee Disagreement To Decisions	r = -.177	**χ^2 = 693.3**	***-Ve H_0 Rejected***
	No Delegation Of Important Task To Employees	**r = -.194**	**χ^2 = 457.4**	***-Ve H_0 Rejected***
	Least Consultation For Decisions With Subordinates	**r = -.008**	**χ^2 = 515.7**	***-Ve H_0 Rejected***
	Importance	r = .001	**χ^2 = 296.3**	***+Ve H_0 Rejected***
	Importance Of Consulting Supervisors For Decisions			
	Importance Of Good Physical Working Conditions	**r = -.033**	**χ^2 = 199.5**	***-Ve H_0 Rejected***
	Organizational Structure & approach	r = .004	**χ^2 = 110.6**	***+Ve H_0 Rejected***
	Redesign Organization Structure For Better Coordination			
	Autocratic Approach To Take Critical Decisions	**r = .061**	**χ^2 = 359.9**	***+Ve H_0 Rejected***
	Fear	**r = -.321**	**χ^2 = 442.8**	***-Ve H_0 Rejected***
	Subordinate Afraid Of Expressing Disagreement			
External Motivation	***Decision Making***	r = .117	**χ^2 = 340.6**	***+Ve H_0 Rejected***
	Centralization Of Authority Key To Your Business Success			
	Employee Disagreement To Decisions	**r = .157**	**χ^2 = 735.6**	***+Ve H_0 Rejected***
	No Delegation Of Important Task To Employees	**r = .025**	**χ^2 = 345.6**	***+Ve H_0 Rejected***
	Least Consultation For Decisions With Subordinates	r = .194	**χ^2 = 305.7**	***+Ve H_0 Rejected***
	Importance	r = .461	**χ^2 = 619.3**	***+Ve H_0 Rejected***
	Importance Of Consulting Supervisors For Decisions			
	Importance Of Good Physical Working Conditions	**r = -.195**	**χ^2 = 147.3**	***-Ve H_0 Rejected***
	Organizational Structure & approach	r = .054	**χ^2 = 436.6**	***+Ve H_0 Rejected***
	Redesign Organization Structure For Better Coordination			
	Autocratic Approach To Take Critical Decisions	**r = -.159**	**χ^2 = 400.0**	***-Ve H_0 Rejected***
	Fear	**r = .121**	**χ^2 = 639.5**	***+Ve H_0 Rejected***
	Subordinate Afraid Of Expressing Disagreement			

The following Karl Pearson's Coefficient of Correlation (r) values were used as guidelines.

	Coefficient, *r*	
Strength of Association	Positive	Negative
Small	.1 to .3	-0.1 to -0.3
Medium	.3 to .5	-0.3 to -0.5
Large	.5 to 1.0	-0.5 to -1.0

Chi-square statistics (X^2) were used to investigate whether distributions of categorical variables differed from one another.

The above proposed relationship summary showed that there was an impact of all the variables i.e., Decision making, Importance, Organizational Structure & approach and Fear on age, gender, academic qualification, internal motivation & external motivation, since the hypothesis was rejected in all cases; the calculated value of chi-square was less than the tabulated value of chi-square.

There was a positive but small significant positive association between "Centralization of Authority is the key for business success" and the Age of the respondents (r = 0.213). The value of Karl Pearson's Coefficient of Correlation was 0.131 which indicated that there was less significant positive correlation of "Employee disagreement to decisions" on Age. The outcome of Karl Pearson's Coefficient of Correlation for "No delegation of important task to employees on age" concluded less significant positive correlation and that of "least consultation for Decisions with the subordinates of different age group" indicated that there was less significant positive correlation between the stated statements on different age group of respondents.

We also examined the relationship between age and power distance factor of **Importance**. The correlation among "importance of consulting supervisors for decisions" and age was less significant negatively correlated. "Importance of good physical working conditions" had less significant positive correlation as per the result of Karl Pearson's Coefficient of Correlation.

Karl Pearson's Coefficient of Correlation showed a less significant positive association between "Autocratic approach to take critical decisions" and the Age of the respondents.

The last factor was Fear which validated only one statement i.e., "subordinate afraid of expressing disagreement" as per the factor analysis. The value of Karl Pearson's Coefficient of Correlation was .292 indicated there was moderate significant positive correlation.

The Karl Pearson's Coefficient of Correlation showed a less significant positive association between "Centralization of authority is the key for business success" and dependent variable i.e., Gender. The value of Karl Pearson's Coefficient of Correlation was 0.173 indicating there was less significant positive correlation of "Employee disagreement to decisions" on Gender. The outcome of correlation for "No delegation of important task to employees" on Gender concluded that they were less significant positively correlated. The Karl Pearson's Coefficient of Correlation was 0.041 indicating there was less significant positive correlation between "Least consultation for decisions with the subordinates" and gender. The "Importance of consulting supervisors for decisions" and Gender showed that r=-.063, meant there was less significant negative correlation between them. The "Importance of good physical working conditions" had less significant positive correlation on Gender as per the result of Karl Pearson's Coefficient of Correlation. The value of Karl Pearson's Coefficient of Correlation was -.147 indicating there was less significant negative correlation among "Redesign organisation structure for better coordination" and Gender. The Karl Pearson's Coefficient of Correlation showed a less significant positive association between "Autocratic approach to take critical decisions" and Gender. The statement "Subordinate afraid of expressing disagreement" and Gender were less significant positive correlated as r= .101.

The table also depicted the relationship between respondents of different academic qualification and power distribution factors. Examination of the above summary where the null hypothesis in every factor was rejected indicating that every factor had an impact on respondents with different academic qualification. Karl Pearson's Coefficient of Correlation showed a less significant positive association between "Centralization of authority is the key for business success" and respondents with different academic experience. The value of Karl Pearson's Coefficient of

Correlation was 0.072 indicating there was less significant positive correlation of "Employee disagreement to decisions" on Academic experience. The statement "No delegation of important task to employees" and Academic experience indicated less significant positive correlation. Karl Pearson's Coefficient of Correlation was 0.266 leading to the conclusion there was less significant positive correlation between the "least consultation for decisions with the subordinates" and academic qualification.

The "Importance of good physical working conditions" had less significant positive correlation on academic qualification as per the result of Karl Pearson's Coefficient of Correlation. "Redesign organisation structure for better coordination" and academic qualification where (r= -.175) showed less significant negative correlation. Karl Pearson's Coefficient of Correlation results showed a less significant positive association between "Autocratic approach to take critical decisions" and academic qualification. The value of Karl Pearson's Coefficient of Correlation was .127 indicating there was less significant positive correlation among "Subordinate afraid of expressing disagreement" and academic qualifications.

The proposed relationship summary showed that power distribution factors had an impact on internal as well as external motivation and the null hypothesis was rejected. As per the decision making factor of power distance, Karl Pearson's Coefficient of correlation showed a less significant negative correlation and the result of Chi-square depicted that for 12 degree of freedom @ 5% level of significance. All the four factors stated had an impact on internal motivation of respondents. We also examined the relationship between internal motivation and power distance factor of importance. The value of 'r' among "Importance of consulting supervisors for decisions on internal motivation" (r=-.001) concluded that there was less significant positive correlation between them. "Importance of good physical working conditions" had less significant negative correlation on respondents with different internal motivation as per the result of Karl Pearson's Coefficient of Correlation. The value of Karl Pearson's Coefficient of Correlation was 0.004 indicating that there was less significant positive correlation among "Redesign organization structure for better coordination" and internal motivation. Karl Pearson's Coefficient of Correlation showed a less significant positive association between "Autocratic approach to take critical decisions" and respondents with different internal motivation drive. The calculated value of Chi-square for the statement regarding "Subordinate afraid of expressing disagreement"

was 442.8 which was more than the tabulated value. Therefore, null hypothesis was rejected leading to the conclusion there was an impact of "Subordinate afraid of expressing disagreement" on the internal motivation of respondents. The value of Karl Pearson's Coefficient of Correlation was .117, showing there was less significant positive correlation.

Similarly in the case of external motivation, as per the decision making factor of power distance, Karl Pearson's Coefficient of correlation showed there was less significant positive correlation and the result of Chi-square depicted that for 12 degree of freedom @ 5% level of significance, all the four factors stated had an impact on internal motivation of respondents as the null hypothesis was rejected. The importance of "Consulting supervisors for decisions on respondents" with different external motivation drive had an impact due to the outcome exhibited by testing Chi-Square and r=-.461, showing there was less significant positive correlation between them. "Importance of good physical working conditions" had less significant negative correlation on external motivation as per the result of Karl Pearson's Coefficient of Correlation. The value of Karl Pearson's Coefficient of Correlation was .054, showing there was less significant positive correlation. Karl Pearson's Coefficient of Correlation results showed a less significant negative association between "Autocratic approach to take critical decisions" and respondents with different external motivation. The tabulated value of Chi-square for 9 degree of freedom @ 5% level of significance was 16.919. The calculated value of Chi-square for the statement regarding "Subordinate afraid of expressing disagreement" was 639.5 which was more than the tabulated value. Therefore, the null hypothesis was rejected or it could be concluded that there was an impact of "Subordinate afraid of expressing disagreement" on external motivation of respondents. The value of Karl Pearson's Coefficient of Correlation was .121 showing there was less significant positive correlation.

Conclusion

The study examined the extent to which unequally distributed power among the entrepreneurs had consequences for entrepreneurial development. The data analysis suggested that higher power distance had significant effects on the entrepreneurial intentions for the population under study. Higher power distance discouraged the innovation and entrepreneurial intentions in the society, probably hampering the economic development of the country. Modern business had often been characterized as turbulent and dynamic, and individuals under such conditions needed to be entrepreneurial to survive and prosper.

Age, academic qualification, gender, internal and external motivation variables were correlated with the four power distance factors, F_1 to F_4. Power distance was related to resistance to change, because members of a culture high in power distance did not typically take personal initiatives to adapt to changes. Power distance was more likely to be associated with maintaining the status quo and established barriers to novelty and change.

The proposed relationship summary showed that the decision making factor of power distance had low significant positive correlation, indicating that different age group of respondents agreed with the statements -"Centralization of authority key to your business success", "Employee disagreement to decisions", "No delegation of task to employees" and "Least consultation for decisions with subordinates"; i.e., the null hypothesis was rejected.

Similarly, male and female respondents also had an impact on the decision making factor, indicating they had agreed but different perceptions regarding the statements, indicated by the lower significant positive correlation.

Respondents with different academic qualification had positive impact on these statements leading to the rejection of null hypothesis; i.e. that as the qualification increased, respondents were agreed and had positive perceptions towards the decision making factor of power distance.

If we examined the internal motivation factor, it seemed that decision making factor results with less significant negative correlation indicated that respondents

with different internal drive were not agreed to the statements to some extent; on the other hand people with external motivation factors were positive towards the statement and decision making factor statements had more effect on them (i.e. rejection of null hypothesis).

The Importance factor of power distance (F_2) in relation to age showed that people of different age groups were less agreed regarding the importance of consulting supervisors for decisions, reflected in the less significant negative correlation. Similarly, as the age increased there was agreement that there should be good physical working conditions.

Examination of the gender profile indicated that male and female had different perception towards consulting supervisors as well as towards good physical working conditions. Similarly, when we examined academic qualification of different respondents, the conclusion was that the Importance factor of power distance had negative impact on them. People with high academic qualification felt less important regarding consulting supervisors and good physical working conditions. The importance of consulting supervisors for decisions seemed to have positive impact towards internal as well as external motivation factors; indicating that respondents with internal and external motivation were agreed with the variable while these respondents were less interested but had an effect on the importance of good physical working conditions (i.e. reject the null hypothesis).

The factor organizational structure and approach yielded different views regarding age, gender, qualification and motivation variables. Respondents of different age groups, gender and academic qualification thought that it was not necessary to redesign the organizational structure for better coordination (less significant negative correlation) while people with internal and external motivation drive agreed with the statement that there should be a redesigning of organizational structure. With respondents of the high age group, more academic experience and high internal motivation drive were positively correlated (rejection of null hypothesis) with autocratic approach to take critical decisions. On the other hand male and female had different perceptions and views about the statement and people with external motivation factor were in less favour about the statement, i.e., negative correlation.

Fear (F_4) was the last factor of power distance to be analysed for the relationship

between different dependent variables with power distance variables. Except for internal motivation all other dependent variables were in favour with the statement of subordinates being afraid of expressing disagreement. It meant that people of higher age group, high qualified, gender group and with high external motivation drive thought that subordinate should feel afraid of expressing disagreement (i.e. reject the null hypothesis).

As a consequence, we can argue that power distance was related to entrepreneurship activity. At the entrepreneurial level, it may be difficult to implement innovations successfully in countries high in power distance because power distance supported maintaining the status quo and resistance to change. Moreover, the bureaucratic structures of business enterprise high in power distance aimed to maintain the distribution of power and, thereby, built barriers for the initiatives of innovative entrepreneurs.

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“It’s all about quality of life and finding a happy balance between work and friends and family.”

– Philip Green

A Study of Work-Life Balance in the Electronics Industry in Singapore

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Abstract

Work–life balance is a major global concern that is receiving growing attention from organisations, management, and employees in everyday discourses. The main aim of this research was to study work-life balance in the electronics industry in Singapore. The primary finding of this research confirmed the significance of work-life balance. The results from this study suggested that individuals were more satisfied with their work and personal life when work-life balance was achieved. The core antecedents of work–life balance were work demands, family demands and job satisfaction as variables. On the other hand, the central consequences of work-life balance encompassed employee well-being including physical and psychological health. The conclusion was that work-life balance was important for the well-being of employees and organisations.

Keywords: Work-life balance, Employee well-being, Work performance, Work-family conflict, Electronics industry

Introduction

With demographical, societal and cultural changes over the years, individuals faced great challenges in balancing their work and personal lives (Cegarra-Leiva *et al.,* 2012). The main aim of this research was to study the employee work-life balance in the electronics industry in Singapore. The concept of work-life balance was solidified by examining its relationship with the four key variables of work conflicts with family, family conflicts with work, job satisfaction and employee well-being. This research explored several hypotheses. The relationships between the distinct variables were tested to examine whether they were associated. The study supported the construct of work-life balance.

Research Perspective

Since work-life balance was a significant indicator of an individual's health and well-being, substantial studies have examined and identified the background and predicators. Work-life balance was suggested to be associated with various variables.

Work-life Balance

According to Wheatley (2012), work-life balance was defined as the ability of individuals to merge the responsibilities of work and household favourably. Fernandez-Crehuet (2015) suggested that a work-life balance stemmed from prioritisation between work-life and lifestyle. Work-life referred to work and ambition, while lifestyle encompassed health, family, pleasure and spiritual development.

Some scholars had dissenting views of the notion of work-life balance. Warhurst *et al.* (2008) criticised the idea of balance and preferred the notion of work and personal life interaction or integration. They argued that the conceptualisation of work-life balance inferred that work and life were separate domains where the time spent on work and personal life was divided equally.

Various research models identified diverse antecedents, moderators and

consequences of work–life balance. Several studies perceived common relationships among the core variables (Eby *et al.,* 2005; Brough *et al.,* 2009). Broadly, the results demonstrated that the core antecedents of work–life balance included work and family demands, and responsibilities for dependents. The key moderating variables were gender and social support while levels of physical or psychological health, satisfaction and performance were the primary consequences of work-life balance.

Beauregard and Henry (2009) echoed that employees' perceptions of positive work–life culture were associated with enhanced job satisfaction and lessened the intention to leave their jobs. It was also linked to positive work–family results such as lesser conflict and enhanced employee commitment with work-life balance. Thus, the researcher perceived the key constructs associated to work-life balance in this study were work conflicts with family, family conflicts with work, job satisfaction and employee well-being.

The Relationship of Work Conflicts with Family to Work-Life Balance

The two most important domains of an individual's life were work and family. It was often difficult to satisfy the multiple responsibilities of work and family, as this required a huge amount of energy and time to balance the roles. According to Lambert *et al.* (2013) and Kinnunen *et al.* (2010), work-family conflicts were bi-directional as problems from work could result in adverse effects and led to conflicts at home. For instance, an individual dealing with an uncooperative colleague at work may take out his anger and frustration at home. Conversely, family-work conflict arose when family-related roles interfered with work-related roles.

In various studies, work-family conflict and family-work conflict were negatively associated with work satisfaction and family life satisfaction (Allen *et al*., 2000; Parasuraman and Greenhaus, 2002; Netemeyer *et al.,* 1996). Kalliath and Monroe (2009) also emphasised that these were negatively associated with work-life balance. It was observed that the key contributor to work-family conflict was work demand while family demand led to family-work conflict (Frone *et al.,* 1992).

A number of studies concluded that distinct causes and effects of work conflicted with family. It was found that excessive workload had a higher adverse impact on work-family conflict compared to long working hours (Allan *et al.,* 2007). On the other hand, Poelmans *et al.* (2005) argued that besides long working hours, work schedule inflexibility intensified work-family conflict.

Work conflicts with family were increasingly common in the modern society. A survey commissioned by Singapore Ministry of Social and Family Development in 2013, concluded that 55% of Singaporean respondents revealed that their work demands got in the way of their family time. (Goy and Kok, 2015).

From the above discussions, it was suggested that work conflicts with family was expected to impact work-life balance. Thus, it was hypothesised that:

Hypothesis 1: Work conflicts with family are negatively related to work-life balance.

The Relationship of Family Conflicts with Work to Work-Life Balance

Netemeyer *et al.,* 1996 defined family conflicts with work as a form of inter-role conflict where family demands interfered with job related responsibilities. These included problems at home spilling over and resulting in conflict at work (Greenhaus and Beutell, 1985). Conflicts of the individual with the family included rising numbers of responsibilities at home, lack of support from spouse and increased number of children. For instance, a working mother, stressed over the heavy responsibilities of taking care of numerous children at home, may undergo an emotional sensation and vent the anger on colleagues at work. Lambert *et al.* (2013) noted that family conflicts with work may lead to lesser productive interactions with colleagues, distractions at work, and reduced compliance with organisational procedures.

Furthermore, family conflicts with work led to adverse effects including job dissatisfaction, absenteeism, poor performance and unpunctuality. (Kirchmeyer and Cohen, 1999). Erdamar and Demirel (2014) concluded that family conflicts with work decreased job satisfaction. Amstad *et al.* (2011) added that besides

job dissatisfaction, the consequences of family conflicts with work may increase turnover intentions. Family conflicts with work were also associated with lower family satisfaction (Hill, 2005). Specifically, it led to reduce levels of work-life balance (Kalliath and Monroe, 2009).

When families relations broke down, organisations were impacted. Employee productivity was decreased with increased absenteeism or time lost on the job. (Ang, 2016). To meet the work-life needs of employees, organisations needed to increasingly promote work-life balance among employees. For example, City Developments Limited (CDL) believed that employees were more productive and contributed more effectively to the organisation when they were able to harmonise family commitments with work responsibilities (Ministry of Manpower, 2010).

The above discussion supported the view that family conflicts with work result impacted work-life balance. Individuals tended to enjoy work, had better family relationships and a greater quality of life when work-life balance was achieved. Thus, the following hypothesis was proposed that:

Hypothesis 2: Family conflicts with work are negatively related to work-life balance.

The Relationship of Job Satisfaction with Work-Life Balance

Job satisfaction was defined as the psychological state developed from the individual's appraisal of his or her job experiences (Locke, 1976). Wicker (2011) explained job satisfaction as the attainment of a pleasurable emotional state that improved work performance and developed positive work attitude. A number of studies consistently identified relationships between job satisfaction and employee health (Faragher *et al.,* 2005) and between job satisfaction and job performance (Judge *et al.,* 2001).

Alegre *et al.* (2015) asserted that many distinct types of relationships affected job satisfaction. For example, organisations could establish initiatives including promoting work-family balance and emphasising supervisor support to increase perceptions of

organisational commitment.

Besides improving job and life satisfaction, Haar (2013) stressed that work-life balance was critical in enhancing mental health. According to the study by Sangganjanavanich and Balkin (2013), the majority of the counsellor educators who experienced decreased job satisfaction reported higher levels of emotional exhaustion and imbalance of work-life. A study conducted among 210 employees in IT organisations in India by Rani *et al.* (2011) investigated the relationship between work-life balance and employee satisfaction. The results revealed positive correlation between job satisfaction and variables such as work-life balance and career opportunities.

Based on the above discussions, it was believed that job satisfaction was positively related to work-life balance. Thus, it was hypothesised that:

Hypothesis 3: Job satisfaction is positively related to work-life balance.

The Relationship of Work-Life Balance with Employee Well-Being

According to Hosie and Sevastos (2010), employee well-being (also known as job-related affective well-being) referred to an employee's subjective feeling with positive or negative affect related to particular job responsibilities in a specific life setting. Hall *et al.* (2013) stressed that employee well-being was associated with employees' accountability of their well-being and health in the organisation.

In recent years, the rising number of employees with unhealthy work-life balance heightened concerns. For instance, in 2014/15, stress in Great Britain accounted for 35% of all work-related ill health cases and 43% of all working days were lost due to ill health (Health and Safety Executive, 2016). Thus, a good balance between the demands of home and the job was crucial in dealing with the adverse effects of work on health.

An exploratory research conducted among 24,096 employees across 27 European countries appeared to validate the view that an unhealthy work-life balance was linked

to poor health (Lunau *et al.*, 2014). The study revealed that employee work-life balance was affected by the impact of public health, welfare state characteristics and working time regulations.

Though there were advantages of flexible working practices in organisations, an "always on" culture could lead to a substantial psychological toll (Jowit, 2016). For instance, increasing numbers of organisations in South Korea used mobile messengers or social media to send work related issues regardless of time. Such employees experienced tremendous stress levels as a result. (The Straits Times, 2016).

The above discussion seems to support the view that there was a positive relationship between work-life balance and employee well-being. Thus, the following hypothesis was proposed:

Hypothesis 4: Work-life balance is positively related to employee well-being.

Research Model

The following set of four hypotheses was developed in this study. The theoretical model was proposed in Figure 1.

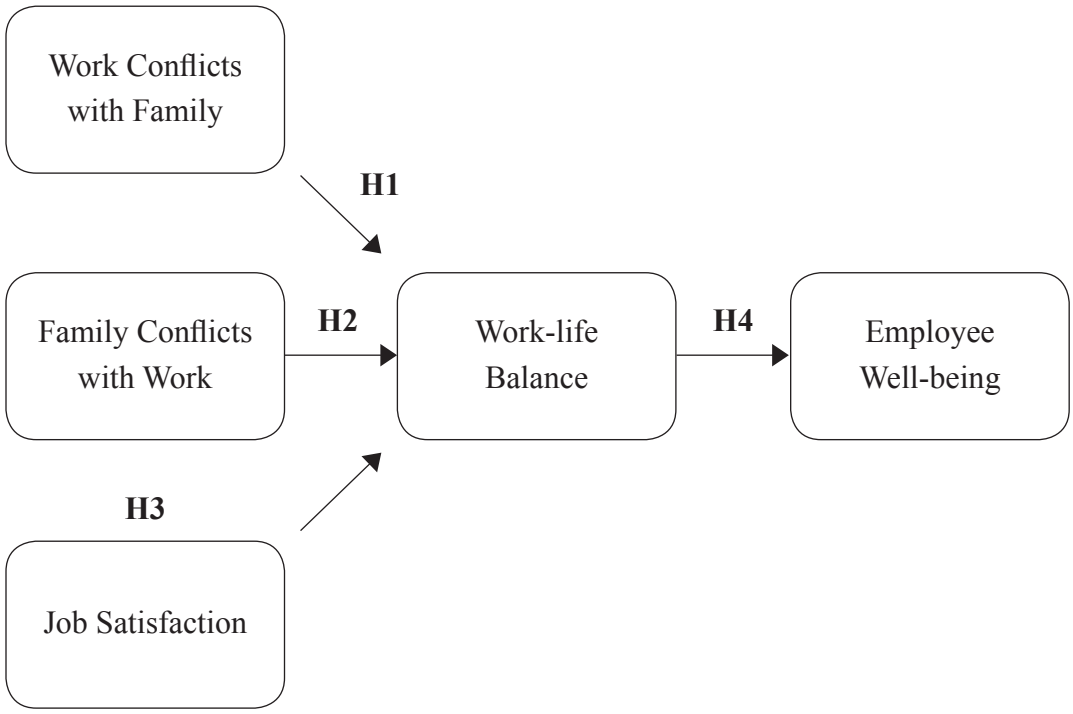
Hypothesis 1:
Work conflicts with family are negatively related to work-life balance.

Hypothesis 2:
Family conflicts with work are negatively related to work-life balance.

Hypothesis 3:
Job satisfaction is positively related to work-life balance.

Hypothesis 4:
Work-life balance is positively related to employee well-being.

Figure 1: Research Model of the Study



Methodology

The study focused on the electronics industry in Singapore. Multi-stage cluster sampling was the most suitable probability sampling technique. A total of one hundred (100) participants were selected from five randomly selected companies in the electronics industry located in the Ang Mo Kio industrial area.

The questionnaire administered consisted of 25 questions. Figure 2.

Figure 2: Survey Questionnaire

Section A: Your Age Group and Job Designation in the Organisation.

1. What is your age group?

☐ Below 21
☐ 22 to 35
☐ 36 to 45
☐ 46 to 60
☐ Above 60

2. What is your designation or position in your company?

☐ Management

☐ Senior Executive/ Executive

☐ Non-executive

☐ Other (please specify): _____

Section B: Level of Agreement

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree

Statements		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Work-life Balance						
3	Work-life balance enhances my work and family relationship.	1	2	3	4	5
4	I feel happier when there is a work-life balance.	1	2	3	4	5
5	Strong support from organisations enhances my level of work-life balance.	1	2	3	4	5
6	A work-life friendly workplace is beneficial to my company.	1	2	3	4	5
7	I usually miss out quality time with my family because of work-life concerns.	1	2	3	4	5
8	An imbalance work-life decreases satisfaction in my family relationship.	1	2	3	4	5
Statements		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
9	I feel that my work takes so much of my time that it has a negative effect on my family life.	1	2	3	4	5
10	I wish that I had more time to do things in my personal life.	1	2	3	4	5

11	Work conflicts with my family reduce my level of work-life balance.	1	2	3	4	5
Family Conflicts with Work						
12	The demand of my family life interferes with my commitment in work.	1	2	3	4	5
13	I have to turn down job opportunities because of my family life.	1	2	3	4	5
14	The time that I spent on my work is more stressed because of my family life.	1	2	3	4	5
15	I'm often tired at work because of the things I have to do at home.	1	2	3	4	5
16	Family conflicts with my work affect my work-life balance.	1	2	3	4	5
Job Satisfaction						
17	My work-life balance is enhanced when I achieve job satisfaction.	1	2	3	4	5
18	Work-life balance enhances my work performance.	1	2	3	4	5
19	When my company emphasises family-friendly support, I increase positive work attitudes.	1	2	3	4	5
20	Good relationship with colleagues enhances my work-life balance.	1	2	3	4	5
Statements		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Well-being						
21	My health is affected when I am unable to achieve a work-life balance.	1	2	3	4	5
22	I feel emotionally exhausted when there is imbalance of work-life.	1	2	3	4	5

23	I feel greater fatigue when there is higher work demand.	1	2	3	4	5
24	The positive approach from my company to enhance flexibility of work improves my well-being.	1	2	3	4	5
25	Creating equilibrium between my work and my personal lifestyle is vital to my well-being.	1	2	3	4	5

The data was measured at the ordinal level with ranking of the categories contained within a variable. Spearman's correlation coefficient (Spearman rho) is a statistical measure of the strength of a monotonic relation between paired, non-parametric data. (Saunders *et al.,* 2012).

IBM SPSS Statistics software was used to analyse the quantitative data. Ninety (90) usable returns were received.

Data Collection, Presentation, Findings and Analysis

The results from the statistical analysis and the outcomes of the hypothesis testing were examined. Bivariate correlation analysis was performed to investigate the relationships between work-life balance with the other variables including work conflicts with family, family conflicts with work, job satisfaction and employee well-being.

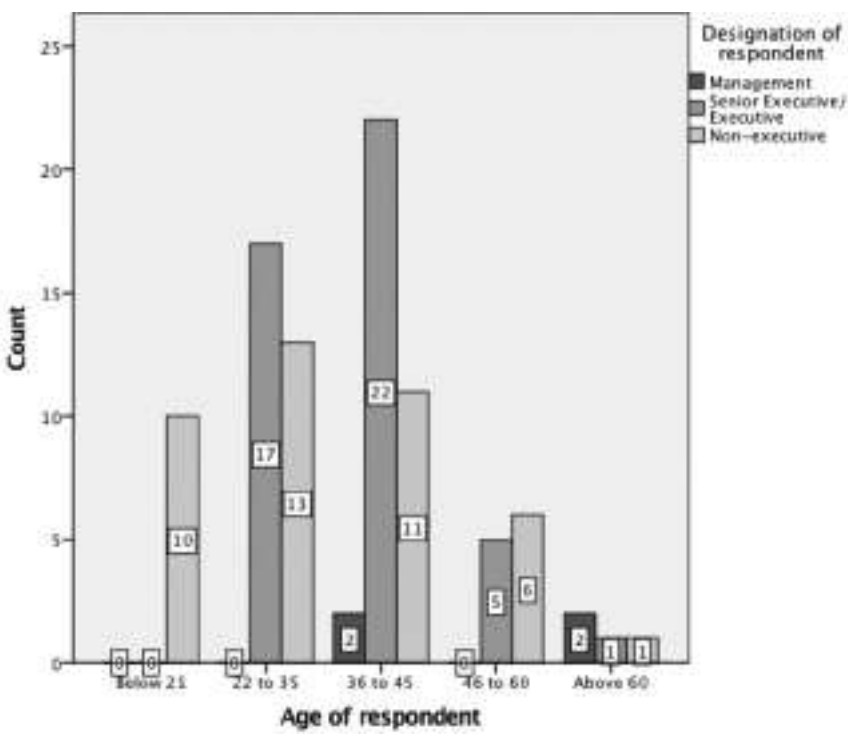
Distribution of the sample population and frequencies of respondents

Table 1 and Figure 3 summarised the frequency based on respondents' age and designations.

Table 1: Frequency Based on Respondents' Age Group and Designation

Age Group	Designation			Total Frequency	Total Frequency (%)
	Management	Senior Executive/ Executive	Non-Executive		
Below 21	0	0	10	10	11.11%
22 to 35	0	17	13	30	33.33%
36 to 45	2	22	11	35	38.89%
46 to 60	0	5	6	11	12.22%
Above 60	2	1	1	4	4.44%
Total Frequency	4	45	41	90	100.00%
Total Frequency (%)	4.44%	50.00%	45.56%	100.00%	-

Figure 3: Bar Chart Based on Respondents' Age Group and Designation



Reliability of the Data

Cronbach's Alpha is a statistic generally used as a measure of internal consistency or reliability of a psychometric instrument. The Cronbach's alpha for each scale in this research was above 0.7 as exhibited in Table 2. Cronbach's alpha of 0.7 and above was regarded acceptable (Dempster and Hanna, 2015). The high value stipulated great levels of consistency and the test was accepted as reliable and the results were valid (Saunders and Tosey, 2015).

Table 2: Cronbach's Alpha for Different Scales (N=90)

Scale	Cronbach's Alpha	Number of items
Work-life Balance	0.948	4
Work Conflicts with Family	0.795	5
Family Conflicts with Work	0.817	5
Job Satisfaction	0.871	4
Employee Well-being	0.902	5

Correlation between the Variables

The inferential statistics focused on assessing the key variables including work conflicts with family, family conflicts with work, job satisfaction and employee well-being to establish the relationship to work-life balance. In the present study, there were 4 items related to work-life balance such as "Work-life balance enhances my work and family relationship." The measure of the work-family interface included 2 scales, which were the work conflicts with family and family conflicts with work. Each variable consisted of 5 items. An example item of the work conflicts with family scale was "I usually miss out quality time with my family because of work-life concerns". For family conflicts with work scale, an example item was "The demand of my family life interferes with my commitment in work".

Additionally, 4 items were administered to assess the participants' level of agreement for job satisfaction. An example item was "My work-life balance is enhanced when I achieve job satisfaction". The measure of employee well-being consisted of 5 items. For instance, "My health is affected when I am unable to achieve a work-life balance". Spearman's rank correlation coefficient test was conducted to measure the direction and strength between the relationships of the variables. When the probability was very low ($p < 0.05$), correlation relationship was statistically significant (Saunders *et al.,* 2012). The strength of the relationship was regarded as weak when $r = 0.10$ to 0.29, moderate when $r = 0.30$ to 0.49 and strong when $r = 0.50$ to 1.0 (Cohen, 1988).

Testing of the Research Hypotheses

The correlation findings for the key variables indicated the various correlations between the different items of the variables. The correlation findings for the key variables were exhibited from Table 3 to 6.

Hypothesis 1: Work conflicts with family are negatively related to work-life balance.

The Spearman's correlation was applied to determine the relationship between "work conflicts with family" and "work-life balance"

The key findings revealed that there was a negative association between work-life balance and work conflicts with family. Table 3. Most respondents indicated that their work conflicts with family reduced their levels of work-life balance. They felt happier when they had achieved a work-life balance. The more the work conflicted with family, the lower the level of work-life balance. Generally the results were consistent with the correlation relationships, being statistically significant ($p<0.05$)

Table 3: Spearman's Rho between Work-life Balance and Work Conflicts with Family

Correlations

			Work-life balance enhances my work and family relationships	Feel happier when there is work-life balance	Strong support from organisations enhances my level of work-life balance	Work-life friendly workplace is beneficial to my company	Miss out quality time with family because of work-life concerns	Imbalance work-life decreases satisfaction in my family relationship	My work takes so much time that it has a negative effect on my family life	Wish I have more time to do things in my personal life	Work conflicts with family reduce my level of work-life balance
Spearman's rho	Work-life balance enhances my work and family relationships	Correlation Coefficient	1	.920**	.863**	.728**	.228*	.360**	0.161	.387**	.319**
		Sig. (2-tailed)	.	0.000	0.000	0.000	0.031	0.000	0.129	0.000	0.002
		N	90	90	90	90	90	90	90	90	90
	Feel happier when there is work-life balance	Correlation Coefficient	.920**	1	.889**	.809**	.299**	.388**	.228*	.462**	.392**
		Sig. (2-tailed)	0.000	.	0.000	0.000	0.004	0.000	0.031	0.000	0.000
		N	90	90	90	90	90	90	90	90	90
	Strong support from organisations enhances my level of work-life balance	Correlation Coefficient	.863**	.889**	1	.744**	.302**	.400**	.294**	.474**	.333**
		Sig. (2-tailed)	0.000	0.000	.	0.000	0.004	0.000	0.005	0.000	0.001
		N	90	90	90	90	90	90	90	90	90
	Work-life friendly workplace is beneficial to my company	Correlation Coefficient	.728**	.809**	.744**	1	0.157	.412**	0.13	.529**	.564**
		Sig. (2-tailed)	0.000	0.000	0.000	.	0.139	0.000	0.222	0.000	0.000
		N	90	90	90	90	90	90	90	90	90
	Miss out quality time with family because of work-life concerns	Correlation Coefficient	.228*	.299**	.302**	0.157	1	.324**	.826**	.421**	.221*
		Sig. (2-tailed)	0.031	0.004	0.004	0.139	.	0.002	0.000	0.000	0.036
		N	90	90	90	90	90	90	90	90	90
	Imbalance work-life decreases satisfaction in my family relationship	Correlation Coefficient	.360**	.388**	.400**	.412**	.324**	1	.341**	.759**	.606**
		Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.002	.	0.001	0.000	0.000
		N	90	90	90	90	90	90	90	90	90
	My work takes so much time that it has a negative effect on my family life	Correlation Coefficient	0.161	.228*	.294**	0.13	.826**	.341**	1	.418**	.219*
		Sig. (2-tailed)	0.129	0.031	0.005	0.222	0.000	0.001	.	0.000	0.038
		N	90	90	90	90	90	90	90	90	90
	Wish I have more time to do things in my personal life	Correlation Coefficient	.387**	.462**	.474**	.529**	.421**	.759**	.418**	1	.689**
		Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.	0.000
		N	90	90	90	90	90	90	90	90	90
	Work conflicts with family reduce my level of work-life balance	Correlation Coefficient	.319**	.392**	.333**	.564**	.221*	.606**	.219*	.689**	1
		Sig. (2-tailed)	0.002	0.000	0.001	0.000	0.036	0.000	0.038	0.000	.
		N	90	90	90	90	90	90	90	90	90

** Correlation is significant at the 0.01 level (2-tailed).

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

Hypothesis 2: Family conflicts with work are negatively related to work-life balance.

The statistical results (Table 4) suggested that there was a negative relationship between work-life balance and family conflicts with work.

For instance, most respondents indicated that the time they spent on their work was more stressful because of their family life. They responded that their family conflicts with their work affected their work-life balance. Furthermore, the respondents conceded that work-life balance enhanced their work and family relationships. When there were more family conflicts with work, the level of work-life balance was decreased. Broadly, the correlation was statistically significant ($p<0.05$).

Table 4: Spearman's Rho between Work-life Balance and Family Conflicts with Work

Correlations

			Work-life balance enhances my work and family relationships	Feel happier when there is work-life balance	Strong support from organisations enhances my level of work-life balance	Work-life friendly workplace is beneficial to my company	Demand of my family life interferes with my commitment in work	Turn down job offers because of my family life	Time spent on my work is more stressed because of my family life	Often feel tired at work because of the things I have to do at home	Family conflicts with my work affect my work-life balance
Spearman's rho	Work-life balance enhances my work and family relationships	Correlation Coefficient	1	.920**	.863**	.728**	0.152	0.137	.350**	.307**	.277**
		Sig. (2-tailed)		0.000	0.000	0.000	0.152	0.196	0.001	0.003	0.008
		N	90	90	90	90	90	90	90	90	90
	Feel happier when there is work-life balance	Correlation Coefficient	.920**	1	.889**	.809**	.221*	0.173	.422**	.382**	.298**
		Sig. (2-tailed)	0.000		0.000	0.000	0.036	0.103	0.000	0.000	0.004
		N	90	90	90	90	90	90	90	90	90
	Strong support from organisations enhances my level of work-life balance	Correlation Coefficient	.863**	.889**	1	.744**	.225*	.217*	.462**	.346**	.254*
		Sig. (2-tailed)	0.000	0.000		0.000	0.033	0.040	0.000	0.001	0.016
		N	90	90	90	90	90	90	90	90	90
	Work-life friendly workplace is beneficial to my company	Correlation Coefficient	.728**	.809**	.744**	1	0.076	0.003	.277**	.365**	.418**
		Sig. (2-tailed)	0.000	0.000	0.000		0.476	0.975	0.008	0.000	0.000
		N	90	90	90	90	90	90	90	90	90
	Demand of my family life interferes with my commitment in work	Correlation Coefficient	0.152	.221*	.225*	0.076	1	.801**	.637**	.458**	0.075
		Sig. (2-tailed)	0.152	0.036	0.033	0.476		0.000	0.000	0.000	0.483
		N	90	90	90	90	90	90	90	90	90
	Turn down job offers because of my family life	Correlation Coefficient	0.137	0.173	.217*	0.003	.801**	1	.620**	.460**	0.048
		Sig. (2-tailed)	0.196	0.103	0.040	0.975	0.000		0.000	0.000	0.653
		N	90	90	90	90	90	90	90	90	90
	Time spent on my work is more stressed because of my family life	Correlation Coefficient	.350**	.422**	.462**	.277**	.637**	.620**	1	.708**	.276**
		Sig. (2-tailed)	0.001	0.000	0.000	0.008	0.000	0.000	.	0.000	0.008
		N	90	90	90	90	90	90	90	90	90
	Often feel tired at work because of the things I have to do at home	Correlation Coefficient	.307**	.382**	.346**	.365**	.458**	.460**	.708**	1	.605**
		Sig. (2-tailed)	0.003	0.000	0.001	0.000	0.000	0.000	0.000	.	0.000
		N	90	90	90	90	90	90	90	90	90
	Family conflicts with my work affect my work-life balance	Correlation Coefficient	.277**	.298**	.254*	.418**	0.075	0.048	.276**	.605**	1
		Sig. (2-tailed)	0.008	0.004	0.016	0.000	0.483	0.653	0.008	0.000	.
		N	90	90	90	90	90	90	90	90	90

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Hypothesis 3: Job satisfaction is positively related to work-life balance.

There was a statistically significant but moderate positive correlation between the variables. Table 5. One example was $r_s = 0.409$, $p = 0.000$ where $p<0.01$. The majority of these respondents recognised that their good relationships with colleagues enhanced their work-life balance. They also acknowledged that their work and family relationships were enhanced when work-life balance was achieved. It signified that individuals with higher job satisfaction achieved enhanced work-life balance. The correlation supported Hypothesis 3 that there was a positive relationship between job satisfaction and work-life balance.

Table 5: Spearman's Rho between Work-life Balance and Job Satisfaction

Correlations

			Work-life balance enhances my work and family relationships	Feel happier when there is work-life balance	Strong support from organisations enhances my level of work-life balance	Work-life friendly workplace is beneficial to my company	Health is affected when I am unable to achieve a work-life balance	Feel emotionally exhausted when there is imbalance of work-life	Feel greater fatigue when there is higher work demand	Positive approach from my company to enhance flexibility of work improves my well-being	Creating equalibrium between my work and my personal lifestyle is vital to my well-being
Spearman's rho	Work-life balance enhances my work and family relationships	Correlation Coefficient	1	.920**	.863**	.728**	0.2	.336**	.335**	.300**	.427**
		Sig. (2-tailed)	.	0.000	0.000	0.000	0.059	0.001	0.001	0.004	0.000
		N	90	90	90	90	90	90	90	90	90
	Feel happier when there is work-life balance	Correlation Coefficient	.920**	1	.889**	.809**	.272**	.359**	.411**	.376**	.442**
		Sig. (2-tailed)	0.000	.	0.000	0.000	0.009	0.001	0.000	0.000	0.000
		N	90	90	90	90	90	90	90	90	90
	Strong support from organisations enhances my level of work-life balance	Correlation Coefficient	.863**	.889**	1	.744**	.280**	.369**	.362**	.385**	.450**
		Sig. (2-tailed)	0.000	0.000	.	0.000	0.008	0.000	0.000	0.000	0.000
		N	90	90	90	90	90	90	90	90	90
	Work-life friendly workplace is beneficial to my company	Correlation Coefficient	.728**	.809**	.744**	1	.372**	.383**	.512**	.468**	.577**
		Sig. (2-tailed)	0.000	0.000	0.000	.	0.000	0.000	0.000	0.000	0.000
		N	90	90	90	90	90	90	90	90	90
	Health is affected when I am unable to achieve a work-life balance	Correlation Coefficient	0.2	.272**	.280**	.372**	1	.731**	.655**	.862**	.602**
		Sig. (2-tailed)	0.059	0.009	0.008	0.000	.	0.000	0.000	0.000	0.000
		N	90	90	90	90	90	90	90	90	90
	Feel emotionally exhausted when there is imbalance of work-life	Correlation Coefficient	.336**	.359**	.369**	.383**	.731**	1	.468**	.720**	.502**
		Sig. (2-tailed)	0.001	0.001	0.000	0.000	0.000	.	0.000	0.000	0.000
		N	90	90	90	90	90	90	90	90	90
	Feel greater fatigue when there is higher work demand	Correlation Coefficient	.335**	.411**	.362**	.512**	.655**	.468**	1	.653**	.676**
		Sig. (2-tailed)	0.001	0.000	0.000	0.000	0.000	0.000	.	0.000	0.000
		N	90	90	90	90	90	90	90	90	90
	Positive approach from my company to enhance flexibility of work improves my well-being	Correlation Coefficient	.300**	.376**	.385**	.468**	.862**	.720**	.653**	1	.698**
		Sig. (2-tailed)	0.004	0.000	0.000	0.000	0.000	0.000	0.000	.	0.000
		N	90	90	90	90	90	90	90	90	90
	Creating equalibrium between my work and my personal lifestyle is vital to my well-being	Correlation Coefficient	.427**	.442**	.450**	.577**	.602**	.502**	.676**	.698**	1
		Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.
		N	90	90	90	90	90	90	90	90	90

** Correlation is significant at the 0.01 level (2-tailed).

Hypothesis 4: Work-life balance is positively related to employee well-being.

There was a statistically significant but moderate positive correlation between the variables $r_s = 0.442$, $p = 0.000$ where $p<0.01$. Table 6. Most of these respondents conceded that creating equilibrium between their work and their personal lifestyles was vital to their well-being. When they achieved work-life balance, they felt happier. Conversely, most respondents felt greater fatigue when there was higher work demand. It signified that when individuals achieved a higher level of work-life balance, the well-being of individuals was enhanced. It supported Hypothesis 4 that work-life balance and employee well-being were positively correlated.

Table 6: Spearman's Rho between Work-life Balance and Employee Well-being

Correlations

			Work-life balance enhances my work and family relationships	Feel happier when there is work-life balance	Strong support from organisations enhances my level of work-life balance	Work-life friendly workplace is beneficial to my company	Work-life balance is enhanced when I achieve job satisfaction	Work-life balance enhances my work performance	When my company emphasises family-friendly support, I increase positive work attitudes	Good relationship with colleagues enhances my work-life balance
Spearman's rho	Work-life balance enhances my work and family relationships	Correlation Coefficient	1	.920**	.863**	.728**	.304**	.323**	.361**	.409**
		Sig. (2-tailed)	.	0.000	0.000	0.000	0.004	0.002	0.000	0.000
		N	90	90	90	90	90	90	90	90
	Feel happier when there is work-life balance	Correlation Coefficient	.920**	1	.889**	.809**	.324**	.299**	.384**	.377**
		Sig. (2-tailed)	0.000	.	0.000	0.000	0.002	0.004	0.000	0.000
		N	90	90	90	90	90	90	90	90
	Strong support from organisations enhances my level of work-life balance	Correlation Coefficient	.863**	.889**	1	.744**	.333**	.309**	.395**	.387**
		Sig. (2-tailed)	0.000	0.000	.	0.000	0.001	0.003	0.000	0.000
		N	90	90	90	90	90	90	90	90
	Work-life friendly workplace is beneficial to my company	Correlation Coefficient	.728**	.809**	.744**	1	.444**	.348**	.480**	.504**
		Sig. (2-tailed)	0.000	0.000	0.000	.	0.000	0.001	0.000	0.000
		N	90	90	90	90	90	90	90	90
	Work-life balance is enhanced when I achieve job satisfaction	Correlation Coefficient	.304**	.324**	.333**	.444**	1	.623**	.649**	.689**
		Sig. (2-tailed)	0.004	0.002	0.001	0.000	.	0.000	0.000	0.000
		N	90	90	90	90	90	90	90	90
	Work-life balance enhances my work performance	Correlation Coefficient	.323**	.299**	.309**	.348**	.623**	1	.615**	.672**
		Sig. (2-tailed)	0.002	0.004	0.003	0.001	0.000	.	0.000	0.000
		N	90	90	90	90	90	90	90	90
	When my company emphasises family-friendly support, I increase positive work attitudes	Correlation Coefficient	.361**	.384**	.395**	.480**	.649**	.615**	1	.600**
		Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	.	0.000
		N	90	90	90	90	90	90	90	90
	Good relationship with colleagues enhances my work-life balance	Correlation Coefficient	.409**	.377**	.387**	.504**	.689**	.672**	.600**	1
		Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.
		N	90	90	90	90	90	90	90	90

** Correlation is significant at the 0.01 level (2-tailed).

Results Discussion

The results of this study demonstrated that the levels of work-life balance were decreased when there were increased work conflicts with family and family conflicts with work. This supported past studies that the two domains of work conflicts from family and family conflicts from work impacted individuals and organisations (Zheng *et al.,* 2016).

Most respondents in this study strongly agreed their levels of work-balance were decreased with increased works demands. The researcher felt that when employees were occupied with their work demands, they were unable to spend quality time with their family because of work-life concerns. It resulted in reduced work-life balance with adverse impacts including increased job burnout (Lambert *et al.*, 2010). Additionally, it affected turnover, employee productivity, absenteeism and well-being (Kossek *et al.*, 2014).

The study also showed that the levels of work-life balance were decreased when there were increased family conflicts with work. Most respondents conceded that they were often tired at work due to the things they did at home. Likewise, Kalliath and Monroe (2009) argued compellingly in favour of this point of view that family conflicts with work contributed to lower levels of work-life balance. The researcher concurred that family conflicts with work adversely impacted employee work-life balance. It was evident as family-work conflicts impacted employee health and well-being (Beauregard, 2006; Peeters *et al*., 2005).

This study supported that the conclusion that there was a positive relationship between job satisfaction and work-life balance. Most respondents conceded that their work-life balance was enhanced when they achieved job satisfaction. According to Kanwar *et al.* (2009), work-life balance and job satisfaction were positively associated to each other as well. The researcher concluded that individuals enhanced work-life balance when they achieved job satisfaction. Organisations that established initiatives including promoting work-family balance would increase the levels of employee job satisfaction. This was in line with the majority respondents' acknowledgement in this study that they developed positive working attitudes when their organisations emphasised family-friendly support. Employees with healthy work-life balance did a better job at work. It was beneficial to both individuals and organisations.

Employee well-being was affected when the level of work-life balance was decreased. The findings in this research provided confirmatory evidence of the positive correlation between the two variables. Most respondents strongly agreed that their health conditions were affected when they were unable to achieve work-life balance. There was a positive relationship between employee well-being and work-life balance. Employee felt increased emotional exhaustion when there was a higher work demand. Along a similar line, Lunau *et al.* (2014) argued that employee work-life balance was impacted by public health, welfare state characteristics and working time regulations.

Implications

This study provided some insights on the significance of a healthy work-life balance for both employees and organisations. Employees understood that increased work conflicts with family and family conflicts with work impacted their work-life balance. Some of the causes and effects of work-family conflict were excessive workload, long working hours and work schedule inflexibility (Allan *et al.,* 2007; Poelmans *et al.,* 2005).

This study supported the findings of other studies relating to the adverse impacts of work-life balance. Orkibi and Brandt, 2015, showed that poor work-life balance and low job satisfaction affected employees' job performance and well-being. It also affected turnover, employee productivity, absenteeism and well-being (Kossek *et al.,* 2014). Most respondents felt greater fatigue when there were higher work demands. Thus, this study provided ample information to encourage organisations to take steps and measures to promote healthy work-life balance for employees. This could include organising employee and family events regularly.

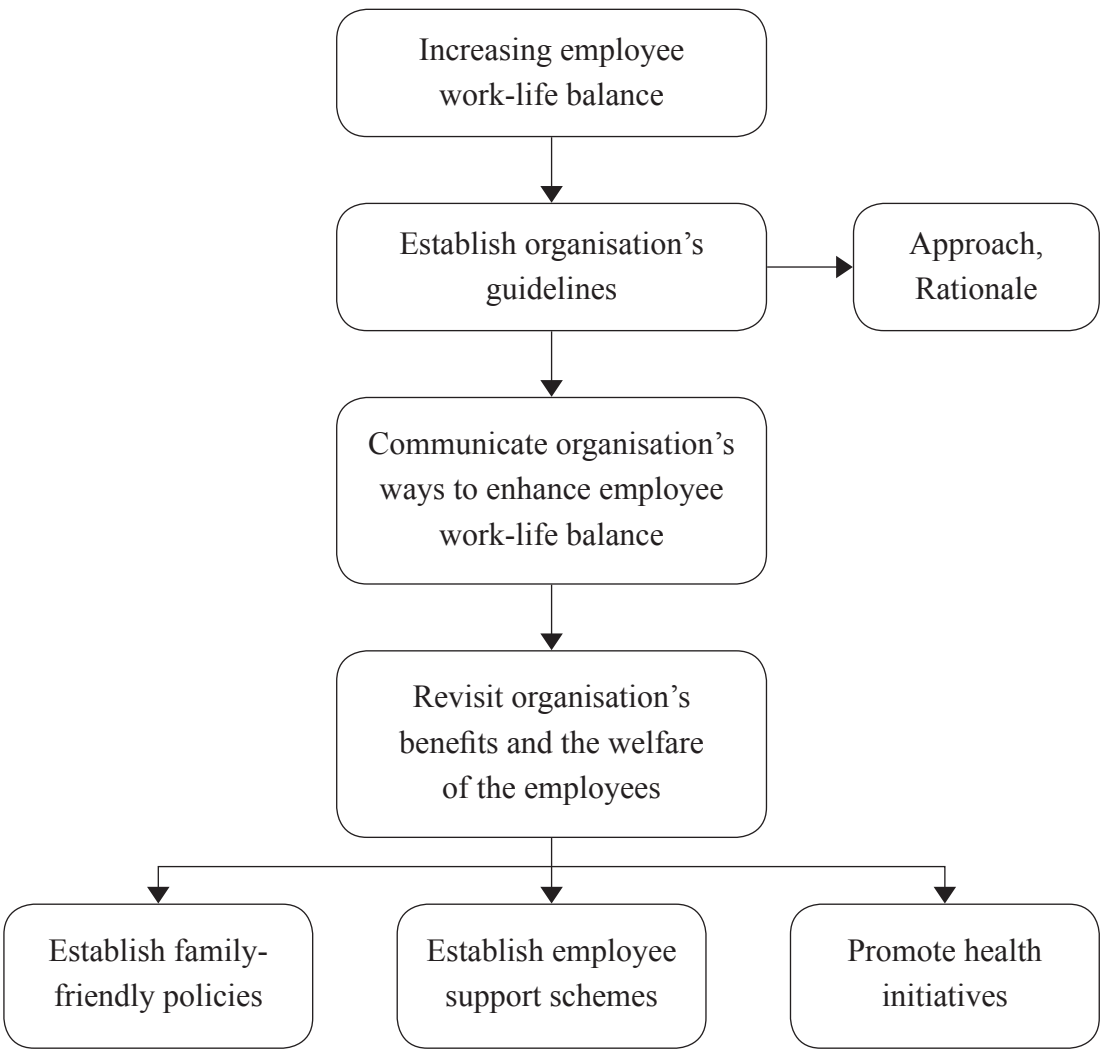
Recommendations

Here are some recommendations organisaions can consider to promote work-life balance.

Organisations can conduct regular surveys to find the specific work-balance related

factors in the companies. These would include working hours, flexible work scheduling and support for working parents. The information collected could help organisations to identify specifc areas that require improvement. The benefits could be considerable. Employees in an organisation that paid attention to employee work-life balance would feel that the organisation valued them and would be more likely to be motivated to work productivitely. Figure 4 summarises the key components that organisations can implement to enhance employee work-life balance.

Figure 4: Recommended Framework to Enhance Work-life Balance



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“The world as we have created it is a process of our thinking. It cannot be changed without changing our thinking.”

– Albert Einstein

The Impact of Perceived Service Quality on Customer Satisfaction in a Sri Lankan Veterinary Hospital

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Abstract

Customer satisfaction is an important strategic tool to help a company gain sustainable competitive advantage in a highly competitive veterinary healthcare industry. This study examined the impact of perceived service quality on customer satisfaction. It also sought to determine the most and least important dimensions of perceived service quality for customer satisfaction. A systematic random sampling exercise using a questionnaire was carried out at a leading Sri Lankan Referral Veterinary Hospital, yielding a sample of two hundred (200). The data were subjected to Principal Component Analysis with equamax rotation. Cronbach's alpha test, Simple and Multiple Regression Analysis were used to find out relationships. Internal consistency of constructs were within acceptable level. The obtained results revealed positive relationship between perceived service quality and customer satisfaction. The most important factor for customer satisfaction was service oriented commitment and the least important was tangibility.

Keywords: Customer Satisfaction, Perceived Service Quality, Veterinary Healthcare, Sri Lanka

Introduction

Sri Lanka, a South Asian country with a multi-cultural society, is blessed with people who are compassionate towards all living beings. Economic growth in Sri Lanka was among the fastest in South Asia, with the annual GDP growth rate of 6.4%, 7.2% and 7.4% respectively, from 2012 to 2014 (Central Bank Report, 2015).The service sector accounted for 57.6%, a 6.5% increase over the previous year's. (Central Bank Report, 2015). The dominant role of the sector gave it a vital role in the country's economic development. The per capita income in 2009 was 2057 U$. It increased to 2923 U$ in 2012 and again to US$ 3280 in 2104 (Central Bank Report, 2015). This strong economic growth rate increased affordability in leisure activities.

Rapid economic growth associated with urbanization and more overseas employment opportunities created issues of social security and loneliness among civilians, leading to more people turning to keeping animals as faithful and obedient companions. This increased the demand for veterinary healthcare, and in turn, veterinary small animal practices became a lucrative source of income. These circumstances created a highly competitive environment among veterinary health practitioners. To survive, creating a sustainable competitive advantage became essential, to be achieved mainly by differentiation and establishing uniqueness. This can be achieved by offering a satisfactory level of service quality.

Importance of the study

According to Gronroos (1984) service quality in healthcare had been measured as technical quality and functional quality. Service providers in veterinary healthcare mainly measured their service quality in terms of the technical competencies they already possessed. Customers, on the other hand, mainly measured or perceived service quality by assessing the service delivery process. A gap existed between service providers and receivers regarding the perception of service quality.

Knowledge of customers' perception of service quality was foundational in guiding strategy formulation and helping service providers maintain a comfortable position in the highly competitive veterinary healthcare industry.

There were few previous studies or extant literature on the relationship between service quality and customer satisfaction in the veterinary health sector in Sri Lanka.

This study sought to achieve three objectives: to examine the relationship between perceived service quality (PSQ) and customer satisfaction (CS), and to determine the most and the least important dimensions of perceived service quality for CS.

A literature review was carried out, followed by a description of the methodology employed. A discussion of the study results followed, with suggestions for future research.

Review of literature

This review covered the literature and studies relating to aspects of service quality and customer satisfaction in the healthcare industry.

Definitions for service quality

Berry et al. (1988) defined service quality as "conformance to customer specifications". Parasuraman, Zeithaml and Berry (1988) defined service quality as "a global judgment or attitude, relating to the superiority of the service and explicated it as involving evaluations of the outcome". Hoffman and Batesan (2010) defined service quality as an attitude formed by a long-term, overall evaluation of a firm's performance. Lovelock et al. (2011) defined service quality as "consistently meeting or exceeding customer expectations". Lewis (1989) defined perceived service quality as a consumer judgment that resulted from comparisons consumer made between expectations and perceptions of the actual service performance.

Definitions for healthcare service quality

Donabedian (1980) defined healthcare service quality as a "kind of care which is expected to maximize an inclusive measure of patient welfare, after one has taken account of the balance of expected gains and losses that attended the process of care in all its parts". The Institute of Medicine (cited by Boyce et al. 1997) defined healthcare service quality as "the degree to which health services for individuals and populations increased the likelihood of desired health outcomes and were consistent with current professional knowledge". Overtveit (1992) defined health care service quality as "fully meeting the needs of those who needed the service most, at the lowest cost to the organization, within limits and directives set by higher authorities and purchasers".

Importance of service quality

Service quality received much attention and gained importance because of its obvious relationship with cost (Kellogg et al. 1997), financial performance (Rust et al, 1994, 1995) and customer retention (Boshoff, 1997). Donabedian (2005) stated that hospital profitability and client satisfaction were remarkably dependent on customers' perception of service quality. Andaleeb (2001) explained that perceived service quality had a positive impact on word-of- mouth and customer loyalty. According to Iacobucci et al. (1994), service quality was an important phenomenon for marketers. Customer's evaluation of service quality and the level of their satisfaction were thought to determine the likelihood of repeat purchase, finally affecting the bottom-line measures of business success.

Definitions for customer satisfaction

Kotler and Armstrong (2012) defined customer satisfaction as "the extent to which a product's perceived performance matches with buyer's expectations". Oliver (1997) defined customer satisfaction as "the consumer's fulfillment response, a post consumption judgment by the consumer that a service provides a pleasing level of consumption related fulfillments including under or over fulfillment". Oliver (1981) defined customer satisfaction as "the evaluation a customer makes to a certain exchange which reflects the relation of the customer's expectations and their real perception to products and services they receive".

A substantial amount of literature elaborated on the advantages of customer satisfaction. According to Zeithaml et al. (1996), satisfied customers were the key for long-term business success. High economic returns (Bolton, 1998), greater customer loyalty (Boulding et al. 1993) and high revenue and customer retention (Fornell, 1992) were some of the highly advantageous and remarkable issues of customer satisfaction.

Dimensions of service quality in healthcare

There were three well-known measurement methods for perceived service quality in healthcare, technical and functional quality, SERVQUAL and SERVPERF. Nitin & Deshmukh (2005) identified 19 models for measuring service quality.

SERVQUAL

The SERVQUAL instrument developed by Parasuraman , Zeithaml & Berry (1988) was the most well- known and widely used tool. Initially, the model was based on 10

dimensions and subsequently revised to cover 5 dimensions. They were: Tangibles (physical facilities, equipment and appearance of employees), Reliability (ability to perform the services accurately and dependably), Responsiveness (willingness to help customers and provide prompt service), Assurance (service providers' knowledge, courtesy and ability to convey trust and confidence) and Empathy (Caring and individualised attention).

SERVPERF

Cronin & Taylor (1992) introduced the SERVPERF (performance only) scale. In the SERVPERF scale, service quality was operationalized by a performance only score of 22-items with the five dimensional structure of SERVQUAL. Many researchers (Cronin & Taylor, 1992: Boulding et al., 1993: Jain & Gupta, 2004) preferred using SERVPERF over SERVQUAL, citing the former's greater reliability and validity.

Methodology

This exploratory cross-sectional study was carried out in a prestigious veterinary referral hospital. A systematic random sample of 200 was drawn from the clients visiting the Veterinary Hospital (VH). Those selected as respondents met the following criteria: at least 18 years of age, general proficiency in read, write and understand Sinhala or English language, willing to respond given questionnaire and had visited VH at least twice within last six months.

The questionnaire used in this study was SERVPERF. Part II of the questionnaire had four statements on customer satisfaction which measured overall satisfaction towards service offered by VH. The questionnaire used a 5- point Likert scale with 1 denoting Strongly Disagree and 5 denoting Strongly Agree. A Pre-testing of the Sinhala version of questionnaire was done with 30 respondents, resulting in minor modifications. Respondents received the questionnaires after experiencing service at VH.

The data collection was carried out at the Out Patient Department (OPD). Analysis was done using Principal Component Analysis (PCA) with equamax rotation, Cronbach's Alpha Test, Simple Linear Regression (SLR) and Multiple Linear Regression (MLR).

Results and Discussion

This section covers the statistical analyses and interpretation of the data, including exploratory factor analysis, the definition of the resulting variables, the formulation of hypotheses and regression analyses outcomes.

Exploratory factor analysis

Prior to the exploratory factor analysis (EFA), the adequacy of the sample and the appropriateness of the primary data were addressed. The Kaiser- Meyer- Olkin (KMO) Test by SPSS 16 version was used to determine sampling adequacy.

Table 1: KMO and Bartlett's Test of Sphericity for two constructs

Construct	Name of the test	Result
SERVPERF	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.922
	Bartlett's Test of Sphericity	
	Approximate Chi-Square	2.635E3
	Df	210
	Sig.	.000
Customer satisfaction	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.805
	Bartlett's Test of Sphericity	
	Approximate Chi-Square	464.296
	Df	6
	Sig.	.000

The KMO index for SERVPERF Scale was 0.922 and for customer satisfaction was 0.805. KMO values were acceptable and sample size considered adequate for further analysis. According to Hair et al. (1995), the Bartlett's Test of Sphericity should be significant ($p < 0.05$) for factor analysis to be suitable. The SERVPERF and overall customer satisfaction constructs were deemed to have sufficient correlations for subject to factor analysis.

The items in the respective constructs were subjected to PCA by equamax rotation separately. Factor loadings below 0.5 were discarded. Table 2. Components extraction criteria were: retained components having an Eigen value of more than 1 (Kaiser, 1960), Scree Test (Cattell, 1966) and the cumulative percentage of variance extracted

(Horn, 1965). Hair et al, (1995) suggested components should explain at least 60% of the variance in the matrix. SERVPERF and customer satisfaction constructs were subjected to PCA by equamax rotation separately. The SERVPERF yielded four components with Eigen values of more than one,

Table 2: Total variance explained by extraction

Component	Initial Eigen Values			Extraction Sums of Squared Loadings		
	Total	% Variance	Cumulative %	Total	% Variance	Cumulative %
1.SOC	9.789	46.613	46.613	9.789	46.613	46.613
2.Reliability	1.678	7.990	54.603	1.678	7.990	54.603
3.Tangible	1.257	5.985	60.588	1.257	5.985	60.588
4.Assurance	1.027	4.890	65.478	1.027	4.890	65.478
5.Customer satisfaction	3.025	75.626	75.626	3.025	75.626	75.626

A Scree Test (ST) gave a similar result and the total variance explained by four components was more than 65%. All three inclusion criteria were fulfilled by four components, named as SOC (Service Oriented Commitment), Reliability, Tangibility, and Assurance.

Table 3: Factor Loadings for SERVPERF (PCA with equamax rotation)

Item	Components			
	1	2	3	4
Up-to-date equipment			0.585	
Visually appealing physical facilities			0.883	
Employees are well dressed and neat in appearance			0.587	
Physical facilities are consistent with services provided			0.700	
Promise to do something by certain time, it does so		0.530		
Employees are sympathetic and reassuring		0.564		
Performs the service right the first time		0.766		
Keeps records accurately		0.694		
Dependable		0.725		
Tell customers when services will be performed	0.506			
Give prompt services to customers	0.532			
Employees are always willing to help customers	0.535			
Employees are never too busy to respond				

Employees behavior instills confidence				0.797
Feel safe in transactions				0.820
Employees are consistently courteous				
Employees have knowledge to answer				0.651
Individual attention	0.679			
Convenient operating hours	0.657			
Personnel attention	0.749			
Customer's best interest at heart	0.774			
Understand customer's specific needs	0.718			

All five items of the empathy dimension and the first three items of the responsive dimensions were loaded in component one and it was named as Service Oriented Commitment (SOC). All five items of the reliability dimension were loaded in the component two and named as Reliability. All four items of tangibility were loaded in component three and named it as Tangibility. The first, second and fourth items of the assurance dimension loaded in component four was labelled as Assurance.

Definitions for variables

Customer satisfaction was defined as the level of a person's felt state resulting from comparing service's perceived performance or outcome in violation to his or her own expectations (Kotler, 1996). The Service Oriented Commitment was defined as individualized attention with caring and willingness to help customers while providing prompt service. Reliability was defined as the ability to perform the services accurately and dependably. Tangibility dimension included physical facilities, equipment and appearance of employees. Assurance was defined as the service providers' knowledge, courtesy and ability to convey trust and confidence (Parasuraman, Zeithamal & Berry, 1988).

Perceived service quality was defined as the consumer's evaluation of the service performance received and how it compared with their expectations. (Jiang & Wang, 2006).

Formulation of hypotheses

Hypothesis $_1$ (H_1) – A positive relationship exists between perceived service quality (PSQ) and customer satisfaction (CS).

Hypothesis 2 (H_2) – A positive relationship exists between Service Oriented Commitment and customer satisfaction.

Hypothesis 3 (H_3) – A positive relationship exists between Reliability and customer satisfaction.

Hypothesis 4 (H_4) – A positive relationship exists between Tangibility and customer satisfaction.

Hypothesis 5 (H_5) – A positive relationship exists between Assurance and customer satisfaction.

Reliability test

The reliability of the 20 items construct emerging from PCA, was measured by Cronbach's alpha (which measured internal consistency of the construct) in Table 4. According to Nunnally (1978) Cronbach's alpha should be above 0.7 to be considered as acceptable. Extracted two constructs and four components showed values of 0.727 to 0.939 from reliability test. Therefore internal consistency of both construct was accepted.

Table 4: Reliability test

Dimension	Cronbach's alpha	Cronbach's alpha based on standardized items
Service oriented commitment	0.930	0.930
Reliability	0.831	0.828
Tangibles	0.785	0.787
Assurance	0.727	0.728
Composite	0.939	0.936
Customer satisfaction	0.891	0.892

Simple linear regression analysis (SLR)

H_1- A positive relationship exists between perceived service quality (PSQ) and customer satisfaction (CS).

The independent variable (Perceived service quality) and dependent variable (Customer satisfaction) were subjected to SLR analysis by "Enter" method. The model summary obtained was tabulated as Model one.

Table 5: Model 1 and 2

Model	R	R Square	Adjusted R Square	Std. error of the estimates
Model 1	.788	.621	.619	.4721
Model 2	.814	.662	.655	.5873

Adjusted R Square for the model was 61.9%. The ANOVA table was tabulated as model one in Table 6. It was significant ($p<0.05$.

Table 6: ANOVA for model 1 and 2

Model	Sums of Squares	df	Mean Squares	F	Sig.
Model 1:					
Regression	72.189	1	72.189	323.852	.000
Residual	44.135	198	.223		
Total	116.324	199			
Model 2:					
Regression	131.751	4	32.938	95.509	.000
Residual	67.249	195	.345		
Total	199.000	199			

Table 7 gives the coefficients between perceived servce quality and customer satisfaction for model 1.

Table 7: Coefficients

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	VIF
	B	Std. Error	Beta			
Model 1:						
(constant)	.128	.194		.658	.511	
PSQ	.957	.053	.788	17.996	.000	

Model 2:						
(constant)	4111E-17	.042		000	1.000	
SOC	.564	.042	.564	13.555	.000	1.000
Reliability	.327	.042	.327	7.849	.000	1.000
Tangibility	.281	.042	.281	6.750	.000	1.000
Assurance	.397	.042	.397	9.543	.000	1.000

The Standardized Beta Coefficient showed the strength of relationship between Perceived service quality and Customer satisfaction. It was 0.788, indicating a very strong positive relationship. The resultant regression equation was:

Customer satisfaction = (.788)* Perceived service quality (1)

Multiple regression analysis (MRA)

Multiple Regression analysis (MRA) was performed by the "Enter" method in order to test H_2, H_3, H_4 and H_5 hypotheses. The independent variables were the four factor scores of perceived service and the factor score of customer satisfaction was the dependent variable. The model summary obtained was tabulated in the Table 5 (Model 2) and adjusted R square value indicated that this model accounted for 65.5% of the variance in the Customer satisfaction.

The ANOVA (Table 6) which assessed the overall significance of Model 2 at $p < 0.05$ indicated that the model was significant at 95% confidence level. The Standardized Beta Coefficients (Table 7) gave a measure of the contribution from Perceived service quality.

The Service oriented commitment component received the highest Standardized Beta Coefficient value (0.564). The lowest (0.281) was obtained by Tangibility. All four components of Perceived service quality produced significant ($p < 0.05$) coefficients. A value of 10 had been recommended as the maximum level of VIF (Hair, Anderson, Tatham & Black, 1995). The VIF values clearly indicated there were no considerable multicollinearity.

The relationship between components of Perceived service quality and Customer satisfaction was formulated as below:

Customer satisfaction = (.564)* Service oriented commitment + (.327)* Reliability + (.281) * Tangibility + (.397)* Assurance (2)

Conclusions

Factor analysis of SERVPERF revealed 4 components, compared to the 5 components model originally obtained by Parasuraman et al. (1985). This difference can be explained as a cultural difference and was specific for VH. This study examined whether a relationship existed between Perceived service quality and Customer satisfaction. The study also sought to determine the most and least important dimensions of Perceived service quality for Customer satisfaction.

Perceived service quality had a strong positive relationship with Customer satisfaction. The Perceived service quality components namely, Service oriented commitment, Reliability, Assurance and Tangibility had positive relationship with Customer satisfaction. The most important for Customer satisfaction was Service oriented commitment followed by Assurance in VH. The least important for Customer satisfaction was Tangibility in VH. To improve customer satisfaction, VH had to pay more attention and to allocate resources and investments to the Service oriented commitment component. This should include soft skills training. In addition VH should show more concern on the Assurance aspect of service quality. Industry players can take note of the findings and use the detailed analysis of the four dimensions service quality model to establish a conceptual frame-work to guide them in the service marketing aspects of veterinary healthcare in Sri Lanka.

Future research

In this study, the researchers slightly modified some of the wordings of the SERVPERF scale items to better reflect the specifics of the veterinary healthcare sector in Sri Lanka. The researchers plan to extend their research by including a few more domain specific dimensions and collect data from a few more veterinary hospitals to gain a more robust and wider understanding of the impact of perceived service quality on customer satisfaction in the Sri Lankan Veterinary Health context.

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Guide for Authors Submitting Articles to Singapore Management Journal

The Singapore Management Journal (SMJ) is a peer-reviewed publication and publishes original articles relating to business and management. The international panel of advisors are peer experts in the field. Articles submitted by authors are subject to a 'blind' review by this panel. The reviewers may recommend but the Editor-in-Chief makes the final decision on whether the submitted article will be published, revised, or rejected. Single research studies, integrative research reviews, theoretical papers, and "action research" are welcome. All articles and data must be original.

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