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CONTENTS

	Page No
Exploratory Analysis on the Management of Agricultural Knowledge and Information by Smallholder Farmers in Batticaloa District	01-13
H. A. C. K. Jayathilake, U. K. Jayasinghe-Mudalige, L. D. R. D. Perera, G. A. Gow & N. Waidyanatha	
Perceived Supervisor Support and Employee Turnover Intention: The Moderating Effect of Employment Tenure	14-26
W.D.N.S.M. Tennakoon & U.L. Herat	
Sri Lankan Beverage Consumers' Purchase Intention: A Study in the Perspective of Health Concern	27-33
H.M.A. Herath & L.H.D. Fernando	
Attitudes towards Alcohol Use among University Students in Sri Lanka: Application of the Theory of Planned Behaviour	34-47
W.S. Chandrasekara	

Exploratory Analysis on the Management of Agricultural Knowledge and Information by Smallholder Farmers in Batticaloa District

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Abstract

Extent of farmer knowledge and availability of reliable information at the level of farm are considered key driving forces in agricultural development as both support interchangeably to transform the livelihoods of rural poor into one with increased household income stability and food security. The farmers who do not have a free/subsidized and open/fair access to the vital agricultural information would, therefore, face severe difficulties in their attempt to achieve the goals of farming. The purpose of the study was to investigate the factors that trigger or hinder farmer access to agricultural knowledge and information. The smallholder agricultural farmers in the Batticaloa district in Sri Lanka was used as the case. A series of pre-tested structured questionnaire-based face-to-face interviews were carried out with a cross section of farmers (n=144) to gather data and both descriptive and quantitative techniques, including Factor and Logistics Regression analysis, were employed to analyse data. The results show that the level of acquisition of agricultural knowledge by farmers has a positive and negative relationship with the level of education and age of farmer, respectively. Amongst other factors, the farmers, in general, requested badly the valid and reliable agricultural information on a regular basis with regard to the market prices of inputs and outputs, credits/subsidies/loans etc. available and the measures of crop protection, i.e. pests and disease control. The inadequacy in information services and agricultural officers, limited infrastructure and insufficient funds/resources hinder farmer access to agricultural knowledge and information. The outcome of analysis, overall, implies the importance of developing appropriate

packages to facilitate information sharing and knowledge mobilization and targeting so to specific farming communities in need with a right mix of market-based and regulatory incentives.

Keywords: Agricultural knowledge, Information management, Smallholder farmers

1. INTRODUCTION

Knowledge is vital in farm development, especially in rural geographies. Access to 'agricultural knowledge' is key to transforming the livelihoods of rural poor into one with increased income stability and food security (Lwoga *et al.*, 2010). Knowledge is filtered from information, or in other words, information is connected to knowledge through the data-information-knowledge hierarchy (Frické, 2009).

Access to agricultural knowledge is vital for acquiring the skills and techniques required to improve farming practices, sustaining the environment and to optimize the agricultural production. The same is also influenced by the infrastructure needed for dissemination of information, which, however, is not uniformly distributed within and between countries (Mtega *et al.*, 2016). Also, the information needs and information seeking patterns of farmers are location specific (Lwoga *et al.*, 2011).

To address the issue on access to agriculture knowledge, therefore, a strong link between agricultural research and farmers should be established. According to Nazari *et al.* (2011), the agricultural research institutions should come up with new technologies and developments, and further, care must be taken to assure

that those reach the farmers in need through effective extension and mass media channels.

Conversely, if agricultural technologies and developments do not reach farmers adequately, the process of transforming agriculture and farmer livelihood development would remain impossible. All these suggest that access to agricultural knowledge through valid and reliable information can be considered key for a positive change and systematic progress in the agricultural sector (Mtega *et al.*, 2016).

The major constraints for farmers' access to agricultural information in Nigeria, according to Galadima (2014), include irrelevant information, delay in information delivery, extension workers' personalities, language barriers, and lack of feedback mechanisms. According to Mtega *et al.* (2016), the limited number of demonstration plots, late delivery of information services, limited number of agricultural extension agents, crop market information and poor information and communication technologies (ICTs) hindered access to agricultural knowledge among rice farmers in Tanzania.

Crowder and Fortier (2000) showed that the shortcomings of traditional print and library-based methods of providing agricultural information to rural farmers who are generally

illiterate and relatively remote from formal sources of information and not proximity to market limit the access to agricultural knowledge.

Aina (2007) suggested that farmers could benefit from global information if information centres (i.e. Telecentres) that were equipped with all information and communication gadgets were available in rural areas to improve access to agricultural information. All these experiences in the developing nations highlight that more emphasis needs to be given to access to knowledge when formulating the policies on the development and dissemination of agricultural knowledge.

There is an abundance of knowledge on agriculture in Sri Lanka that has been generated through various sources and institutions (e.g. universities, research stations and departments). Further, those are in very different forms, e.g. printed matter, recorded and/or in cyberspace, or in the form of day-to-day communications on prevailing 'market prices' and 'weather conditions' to reviews and reports released periodically (e.g. weekly, quarterly).

Nevertheless, it is a well-known fact that the smallholder agricultural communities in the country, especially in less-developed rural areas, have persistently suffered from those issues related to receipt of appropriate knowledge and information pertaining to agriculture (information on prices and consumer demand) on time and on regular basis. This has mostly been due to the inefficiencies associated with the mode of dissemination (De

Silva and Ratnadiwakara, 2008; Jayathilake *et al.*, 2015).

At the level of farm, the most farmers have inadequate access to and usage of the most important agricultural information needed for sustainable production (Lwoga *et al.*, 2011). This will eventually lead to dismal growth of the agricultural sector and prevalence of poverty among households whose livelihoods rely solely on agriculture, and this also is a common phenomenon with Sri Lankan smallholder agriculture.

No need to justify that if the agricultural technologies and developments do not reach farmers in its best form and through the most economical route, transforming sustainable agriculture into productive systems, and in turn, conversion of the livelihood of poor farming households into a rich would become an unrealizable effort.

In light of these, the purpose of the study was to investigate the factors that trigger or hinder farmer access to agricultural knowledge and information. The smallholder agricultural farmers in the Batticaloa district in Sri Lanka was of special interest. The study is considered part of a comprehensive project that gathered data from eight communities identified for the *Canada-Sri Lanka Partnership Development Project* funded by the Social Sciences and Humanities Research Council of Canada with the view of assessing the use of low-cost communication technologies for knowledge mobilization in agricultural communities in Sri Lanka and to recommend how ICT tools could be

used in agricultural knowledge sharing in the rural farming communities.

2. METHODOLOGY

Based on the literature referring to the previous studies on this area, the following conceptual framework was constructed that depicts the relationship between a number of factors that govern farmer access to agricultural information, including their demographic and perceptions, market information and accessibility

and also the information repository issues (Figure 01).

Based on this framework we may hypothesize that ‘a farmer access to agricultural knowledge through valid and reliable information at the right time on regular basis’ is significantly associated with his/her: (H₁) age; (H₂) household income; (H₃) perception of farming as a profession; (H₄) farming experience; (H₅) price information; (H₆) market accessibility; (H₇): sources of information services, and (H₈) access to agricultural services, including extension and officers

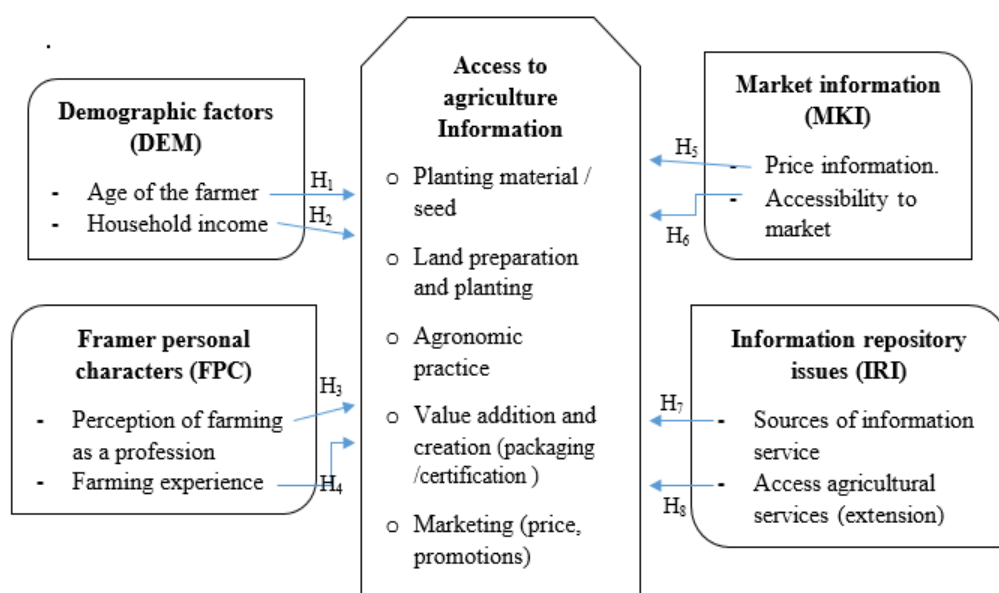


Figure 1. Conceptual Framework

Study Area and Data

The data for this particular study were gathered from agricultural communities involved with

“vegetable farming” under the guidance of the *Janathakshan*, a non-governmental organization operate in the Batticaloa district. It works

extensively in the geographical areas of Vaharai and Kathiraveli Grama Niladhari (GN) Divisions in Koralai Pattu North Divisional Secretariat (DS) and Kirankulam North GN division of the Munmunai Pattu DS Division.

A series of structured face to face interview based questionnaire was carried out with a cross section of smallholder agriculture farmers ($n=144$) to collect the primary data. The purposive sampling technique was used in selecting farmers and the 'LIRNEasia Teleuse@BOP4' (LIRNEasia, 2012) instrument was adopted in particular for the purpose of preparation of the questionnaire to gather information pertaining to the agricultural knowledge needs (agriculture information seeking); major sources of agricultural knowledge; constraints on access to agricultural knowledge and socio-economic and demographic data of the respondents in the study area.

Responses to most of the questions were obtained by way of a five-point likert-scale ranging from '1' (Strongly Disagree) to '5' (Strongly Agree).

The validity and reliability of the data collected for the purpose were evaluated through Cronbach's alpha value, where the alpha closer to 1.0 indicates a "better", and in general, the values less than 0.6 indicates that reliability is "poor". Commonly, the values in 0.70 range is considered "acceptable" and those over 0.80 considered "good" (Sekaran, 2006).

Prior to the extraction of the factors, Keiser-Meyer-Olking test (KMO) was used to assess the sampling adequacy and Barlett's Test of Sphericity used to

assess factorability of the data. The KMO index ranges from 0 to 1, with 0.5 suggested as the minimum value for a good analysis. The Barlett's Test of Sphericity should therefore be significant ($P<0.05$) for an analysis to be considered appropriate (Tobias, & Carlson, 1969).

3. RESULTS AND DISCUSSION

Descriptive Statistics of Smallholder Farmers

All the smallholders farmers surveyed ($n=144$) were 'Tamils' by nationality, and a vast majority of them were 'Hindus' by religion followed by the 'Catholics' (Table 01).

The results obtained through statistical analyses were taken together with qualitative information obtained through a series of focus group discussions and on-farm/household personal observation.

Nearly 56 percent of farmers were females and the mean age of a farmer was 47 years. In fact, 52 percent of farmers in the sample were fallen within the age of 45 to 75 years. About 61 percent of farmers were classified under the income category of the lowest annual income, i.e. less than Rs. 180,000 per annum. In terms of the educational qualifications of farmers participated to the survey, 51 percent had attained up to the secondary level followed by 22 percent up to the primary level. In fact, another 7 percent had not attained any formal education; however, this particular set of farmers have also been literate enough to communicate with others in the community verbally.

Needs, Acquisition and Usage of Knowledge and Information

Kamba (2009) stated that any community of people, including those in agriculture, is not in position to develop themselves overtime without

acquiring a sufficient amount of knowledge, and the information plays a vital role in this respect by working as a vehicle of transforming and accumulating the knowledge.

Table 1. Distribution of demographic data and use of agricultural knowledge

Variable	Category	Percentage	Percentage Use of Agricultural Knowledge / Information
Sex	Female	56	96
	Male	44	94
Age (Years)	20 – 29	17	100
	30 - 44	25	97
	45 - 59	35	96
	60 - 74	17	94
	>74	6	80
Education	Literate but no schooling	7	60
	Grade 0 - 5	22	93
	Grade 6 -11	51	99
	Advanced Level and above	20	100
Annual household income	< Rs. 180,000	61	96
	Rs. 180,000 - 360,000	32	98
	> Rs. 360,000	7	100

To explore the validity of this fact, the respondents were inquired in particularly about the necessity and level of utilization of agricultural knowledge and information on their long-term and day-to-day agricultural operations. It has been found that more than 95 percent of smallholding farmers badly needed, and also use heavily, the agricultural knowledge

and information in this respect (see, Table 01).

Adeogun *et al.* (2010) stated that the younger farmers, as compared to their counterpart, i.e. older farmers, are more likely to spend their time to access into new information on improved technologies. This fact has also been proved as it was found that those “young” farmers (i.e. age 20-29

years) in the sample and those fall into the category of the “most” educated (i.e. >Advanced Level) has requested for and use agricultural information and the knowledge more than others in their farming activities, or in other words, the demand for knowledge in agriculture and valid and reliable information has slightly been decreased as the farmers become “old” and “less educated”.

Each farmer interviewed was asked to indicate the type of agriculture-related knowledge and information that they “need”, and the amount that they “acquired” in reality. A list of factors were produced for them work on this, including: agricultural support programs (credit / subsidy / loan) (ASL); sustainable agronomic practices (SAP); land preparation (LDP); pest & disease control (PDC); seed / variety selection (SVS); postharvest handling (PHH); fertilizer application (FTA), and crop market price (CMP). The summary of outcome is depicted in Figure 02.

It shows that farmers were more concerned about the accurate and timely information about the market prices of the crops they cultivated

(CMP = 96%), agricultural subsidies/loan schemes (ASL = 95%), the methods that can use to control pests and diseases (PDC = 92%), and the recommendations and application of fertilizer (FTA = 85%). Further, the gap between information need and receipt was highest in market prices of crops (CMP), agricultural support programs (ASL), and sustainable agronomic practices (SAP) suggesting that the farmers, in general, have been experiencing an inadequate access to the most important agricultural information over time.

Sources of Information in Use to Gain Agricultural Knowledge

Another important aspect considered in the analysis was the major sources of agricultural information use by the farmers. To reveal this phenomenon, a number of such sources were considered, including from the government officers (extension officers and regional development officers), farmer organizations / society, market vendors, family members, fellow farmers, library / information centre, and ICT related devices (Figure 03).

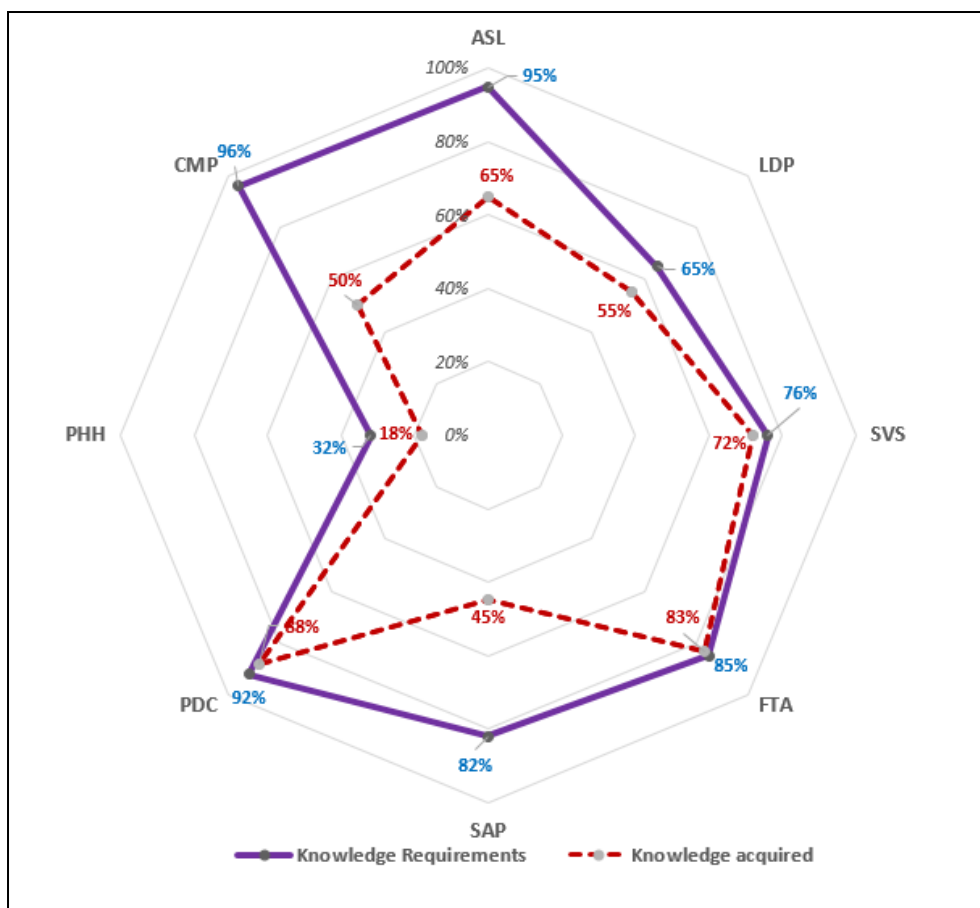


Figure 2. Type of agriculture related information expected and acquired by the surveyed communities.

Where,

ASL - agricultural subsidy/loan

LDP - land preparation

SVS - seed / variety selection

FTA - fertilizer application

SAP - sustainable agronomic practices

PDC - pest & disease control

PHH - post harvest handling

CMP - crop market price

The results show that the most popular sources of information include the government officers (81%), followed by the farmer organizations (65%) and

market vendors (60%). The least popular ways and means include the ICT devices (18%) and library / information centres (8%) (Figure 03).

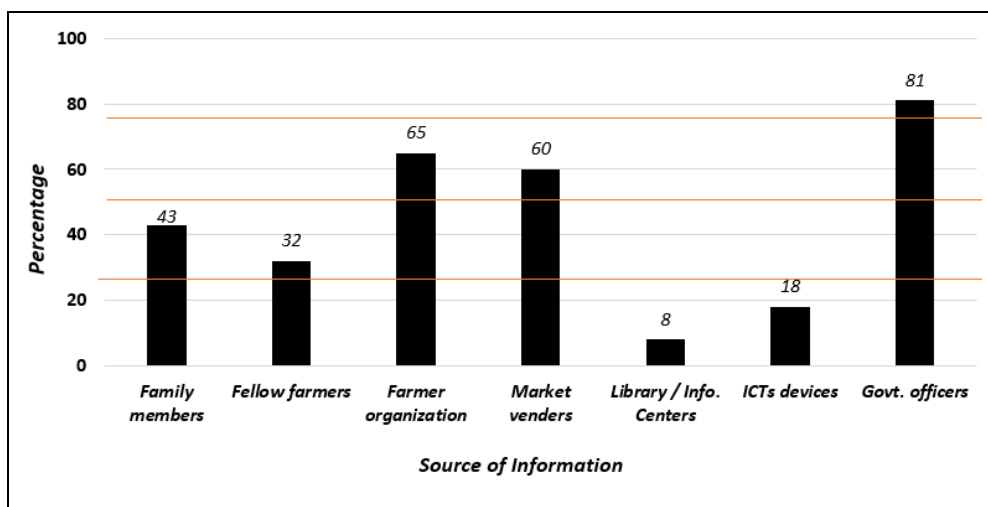


Figure 3. Different sources of agriculture information seeking by the farmers (n = 144)

Further, they were asked to indicate the use of ICT-related devices, for example television, radio, telephone (mobile / fixed), computer and internet in their daily lives for communication. It has been found that more than 82

percent of farmers in the community use at least one of some model of phone to take or receive a telephone call in the recent past, and nearly 58 percent use their own mobile phone/s for this purpose (Figure 04).

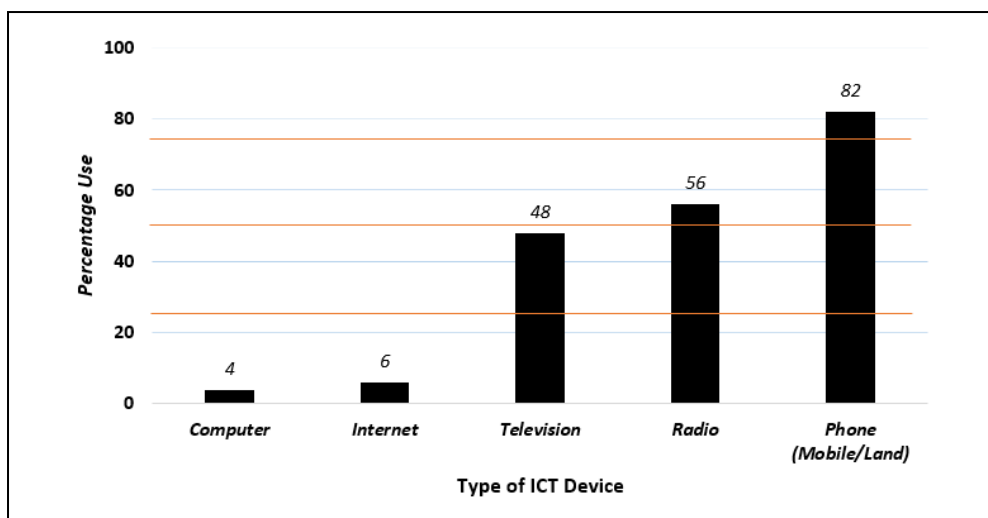


Figure 4. Farmers ICT devices usage in day-to-day communication

In fact, more than 76 percent of farmers in the sample use a mobile

phone to take and/or receive phone calls “regularly” for various purposes.

However, only about 16 percent of farmers were familiar with and/or use the SMS facility on the phone for the purpose of communication with third parties. This suggests that there exists a great opportunity to promote the mobile phones possess by farmers to break the existing gaps in access to agricultural knowledge and information.

The respondents were asked to indicate the factors that limit their access to agricultural information. The eight key aspects included in the conceptual framework were selected specifically for this purpose.

These were subjected to a number of statistical analysis to verify their validity and reliability. It was found that Cronbach's alpha value of all factors (Scale reliability coefficient = 0.687), except the perception of farming as a career, resulted more than 0.60. The adequacy of the sample was measured using KMO and Barlett's test of sphericity. The KMO value was 0.672, which is greater than the rule of thumb 0.50, and Barlett's test of sphericity also indicate the significant ($P = 0.001$).

The results show that the lack of information services (93%), lack of

agricultural officers, i.e. extension officer and regional development officer (87%), farmers age (80%), price information (price of seed, planting material, fertilizer, pesticide, market price etc. (76%), and market accessibility (58%) were the key constraints faced by farmers, in general (Table 02).

A Logistic regression model was employed to see the relationship between those constraints considered in Table 02 and the farmers' access to agricultural knowledge and information.

The model was significant and the Likelihood Ratio Chi-square of 49.86 with a p-value of 0.0001. Out of the eight hypotheses specified to reflect those factors in conceptual framework, the hypotheses of H_1 , H_4 , H_5 , H_6 , H_7 and H_8 are statistically significant, while H_2 and H_3 are not statistically significant. The results, overall, implies that farmer's level of age, poor information services in the area, availability of agricultural officers, farmer experience, price information and market accessibility possess a significant effect on the farmers access to agricultural knowledge and information.

Table 2. Summery statistics of the factors limits the access to agricultural information

Category	Factors	Percentage			Cronbach's Alpha value	z	P> z
		Male	Female	Total			
DEM	Age of the farmer	76	84	80	0.825	2.43*	0.021
	Household income	48	40	43	0.524	4.21	0.064

FPC	Perception of farming as a career	32	26	28	0.312	4.41	0.072
	Farming experience	76	52	63	0.741	2.95*	0.036
MKI	Price information	76	76	76	0.725	3.13*	0.047
	Accessibility to market	73	55	70	0.611	2.78*	0.034
IRI	Sources of information service	89	96	93	0.893	2.55*	0.027
	Access agricultural services (extension)	82	90	87	0.861	2.61*	0.029

4. CONCLUSIONS

The findings of study show that almost ninety five percent of vegetable farmers in batticola have an access and utilize agricultural knowledge and information in their farming related activities. Amongst the other factors, those farmers, in general, need badly the valid and reliable agricultural information on a regular basis with regard to the market prices of inputs and outputs, credits / subsidies / loans etc. available and the measures of crop protection, i.e. pests and disease control.

The inadequacy in information services and agricultural officers, limited infrastructure and insufficient funds / resources hinder effective farmer access to agricultural knowledge and information.

In light of these, it is of utmost importance that information providers, both private and public, identify all these challenges, and in turn, provide farmers with a convenient and economical access to valid and reliable agricultural knowledge and information. It is really important that the information

needed by rural farmers are repackaged in a language they can understand and offer to them at the appropriate time.

There is a need for government and other responsible institutions to lay more emphasis on sustainable practices for information accessibility to smallholder farmers and also to disseminate information to them and address their information needs properly.

From policy point of view, the outcome of analysis, overall, highlight the importance of developing appropriate packages to facilitate information sharing and knowledge mobilization and targeting so to specific farming communities in need with a right mix of market-based and regulatory incentives.

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Perceived Supervisor Support and Employee Turnover Intention: The Moderating Effect of Employment Tenure

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Abstract

The influence of supervisory behavior on employee turnover intention has long been discussed by HR scholars. Yet, moderating and mediating relationships of this setting have been addressed seldomly. The central focus of this study was to test the moderating effect of employment tenure on to the relationship between perceived supervisory support and employment turnover intention. The quantitative inquiry adopts the survey method. Perceived supervisory support was the independent variable and the employee turnover intention was the dependent variable. Employment tenure (short vs. long) was assumed to be the moderating variable of the said relationship. The twenty-itemed survey instrument recorded 0.7 -0.71 reliability score. The answers were ranked against a seven point Likert scale where 1 denotes strongly disagree and 7 denotes strongly agree. Data from the respondents (n = 135) was analyzed using mainly the ANOVA, correlation and multiple regression analysis. Results point out a significant negative relationship between perceived supervisory support and employee turnover intention. Importantly, it is revealed that there is a significant moderating effect by employment tenure on the association between main variables concerned. The theoretical implication of moderating role of employment tenure and the practical implication of offering extended support for short tenured employees concluded the study.

Keywords: Perceived supervisor support, employee turnover intention, employment tenure, moderating effect

1. INTRODUCTION

Labor turnover yet is a burning issue for many organizations despite to the countless organizational initiatives to lessen the effect of it. It has both direct and indirect costs to an organization.

Turnover is defined as ‘voluntary terminations of members from organizations’ (Hom & Griffeth, 1994). According to Foon, Chee-Leong & Osman (2010), turnover is

very much common to every type, size & level of the organization. The apparel industry is playing a vital role in Sri Lankan economy (Central Bank of Sri Lanka, 2016). According to Dheerasinghe (2009), Sri Lankan apparel industry is facing problems in developing and maintaining the required manpower. There are many variables which does affect the employee turnover in organizations. They are pay, integration, supervisory support, centralization, instrumental communication, formal communication, upward mobility, and distributive justice, length of service, age, education, occupation, marital status, and sex etc. Review of existing literature highlights the impact of perceived supervisory support on turnover intention. This has been researched to be the first most influential factor of employee turnover (Thanocody et al, 2009; Dawley et al, 2007; Liyanage & Galhena, 2002) Several studies have found that the supervisory support is the best predictor of turnover intention. Nevertheless, practitioners suggest a variation in this relationship with respect to the employment tenure (i.e. service period) of the employee for which empirical evidences are inaccessible. Thus, the present study was designed to test whether employment tenure of employees moderates the relationship between the perceived supervisor support and turnover intention of employee.

Theoretical Background

The performance of the human capital within an organization is the prime determinant of the organizational succession (Robbins & Jude, 2012).

Thus, human resource is needed to be utilize, direct, and motivate in an acceptable way (Sujeewa, 2011). Lesabe and Nkosi (2007) argue that none of the organization can perform successfully in the competitive world without undivided commitment of employees. Organizations thus need to realize that if employees are well managed, success is inevitable (Hellriegel et al, 2004).

Turnover intention

Turnover is undoubtedly a severe issue for majority of organizations. Among the different definitions, Tett and Meyer (1993) defined employee turnover as the voluntary termination of an individual's employment with a given company. Regardless of the fact that who initiate it, both employees and firms get affected by the intolerable level of employee turnover (Brown et al, 2005).

Turnover intention is known as employee's intention to find a new job with another employer in near future (Medina, 2012). It results in transferring the employees across the organizational boundaries (Macy & Mirvis, 1976). Turnover intention; the main symptom of turnover is affected by several factors (Bluedorn, 1982; Steel & Ovalle, 1984; Lee & Heard, 2000). Factors affecting turnover intention today have become increasingly complex. The effect of working environment, salary level, supervisor support and coworker relationship count to be the top most contributing factors to turnover intention (Avey, Luthans & Jensen, 2009). Additionally, turnover could be a disruption to worker & to the workplace in the forms of need to learn new job-specific skills, need to find

different career prospects, lose job-specific skills, suffer disruption in production and incur the costs of hiring & training new workers (Liyanage & Galhena, 2002). As to Nawaz, Rahman & Siraji (2009) working condition, supervisor behavior, job satisfaction, and organizational commitment are treated to lead the labor turnover. It can also be resulted from job satisfaction, manager's attitude, organizational culture, personal problems, job content and financial rewards (Saeed, Mussawar, Lodhi, Iqbal, Nayab and Yaseen, 2013). Supervisory behavior found to be having a direct impact on turnover intention (Thanocoody et al, 2009; Dawley et al, 2007; Liyanage & Galhena, 2002). With respect to garment industry, this is even critical as the collaboration and coordination between supervisor and the employee are highly demanding.

Supervisory support

Supervisors are considered as the first level managers who shoulder the prime responsibility of leading work groups in organization (Elangovan & Karakowsky, 1999; Noe, 2008). Along with the changes in business context, the role of the supervisors has also changed where contemporary supervisors are treated as catalyst of organizational succession rather a reporting and monitoring mechanism (Ismail, et al., 2010). Perception gives rise to certain attitudes and relationships because a person's opinion and points of view are shaped by his/her perceptions naturally (Lok, Westwood, Crawford, 2005). The supervisory support for employees may take different forms. Among

them, the role of immediate supervisor is treated as the most critical. They directly convey the organizational intentions to their employees (Dawley et al. 2007). Tuzun and Kalemci (2012) showed that supervisor-related perceptions and attitudes could shape organizational –related perceptions and attitudes.

Employees deserve that their supervisor will provide all the necessary support to continue their activities and to make them more engaged with their work. Employee engagement and supervisory support found to be highly related (Swanberg et al., 2011). Munn, Barber and Fritz et al. (2007) found that supervisor support is the best predictor of job satisfaction & intention to quit. The way employees perceive their supervisor's behavior proven to be affecting their intention to quite the job. By exhibiting supportive behavior supervisors can easily manage subordinates' emotions. This intern can be used to control the turnover intention of employees (Dawley et al., 2007). Supervisory support associates with career satisfaction of employees (Wickramasinghe & Jayaweera, 2010). Divergent ideas between supervisors and employees lead to conflict among them which finally results in intention to quit the job (West, 2007). Perceived supervisory support tested to be a mediating the relationship between stress and intention to quit and also directly affecting the turnover intention (Firth et al., 2003).

Bawsd on the presented empirical evidenced it is hypothesize that the perceived supervisor support affect the turnover intention of employees.

H1: Perceived supervisory support significantly relates with employee turnover intention.

Employment tenure

Employment tenure is time period that a person spent on the job in an organization (Nawaz, 2009). It is simply based on the time period in between starting date and last date at work. Employment tenure reported to be negatively correlated with voluntary employee turnover. Longer the stay in an organization greater the commitment of employees (Becker, 1960). With respect to Sri Lankan garment industry, most female workers tend to terminate their employment tenure due to marriage (Dheerasinghe, 2003). Some are leaving the organization for foreign employment. Short employment tenures damages the consistency of the production & operations. As a result organizations may need to comprise their profits and to bear severe losses in terms of both monetary and non-monetary assets such as good will and reputation.

The beginners usually have less knowledge and experience regarding the operations of an organization.

They are purely new to the organizational culture too. It takes some times for them to become experts of their job and that period depends on several factors including learning ability of the employee. Immediate supervisor of new comers has a greater role to be played in order to facilitate her/him to adjust to new context. Absence of this facilitation causes employees to terminate their employment tenure. But this won't be a problem for older employees who are by then well aware about their job and the organization. Practical evidences of the researches with the industry support the similar nature of association between employment tenure and turnover intention. Employees with shorter tenures tend to terminate their employment easily than employees who have spent longer/ considerable time at the organization. Hence, it is assumed that employment tenure moderate the association between perceived supervisory support and turnover intention.

H2: Employment tenure moderates the relationship between perceived supervisory support and employment turnover intention.

Research Model

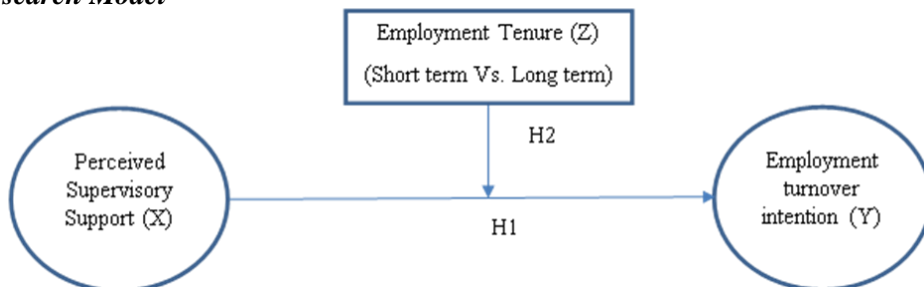


Figure 1. Research Model

2. METHODS

The study applied the quantitative research approach to explore the moderating effect of employment tenure on to the relationship between perceived supervisor support and turnover intention. Perceived supervisor support was operationalized using supervisor's concern, behavior of supervisor, stress caused by supervisor, and status of supervisor while turnover intention was measured in terms of intention to quit job, and search of new job opportunities. Employment tenure was categorized into two main categories namely less than or equal 6 months and more than 6 months. Garment Industry; the largest labor intensive industry which makes highest contribution to GDP was selected after reviewing the very high labor turnover of it (Sandeepanie & Ubayachandra, 2015). The sample was drawn from a well-established & reputed garment manufacturing organization where favorable Human Resource development practices are in action. A questionnaire was used for collecting data. The instrument

consists of 20 items. The answers were ranked against a seven point Likert scale where 1 denotes strongly disagree and 7 denotes strongly agree. The reliability analysis revealed Cronbach's Alpha value is ranging between 0.70-0.71 for the two groups of respondents. That ensured the reliability of the instrument to collect the data from the sample. The questionnaire was hand delivered to the respondents which was later collected by researchers themselves. The Sinhala version of the questionnaire was used to affect the response ratio. The sample consists of randomly selected 150 Sewing Machine Operators (SMOs). Among them fifty (75) SMOs have spent more than 6 months and the rest have spent less than 6 months in their service. Hundred and fifty (150) questionnaires were distributed among the respondents initially while hundred and thirty-eight (138) of them were returned. Out of the received questionnaires, three (03) were disregarded due to incompleteness. The collected data were analyzed using the Pearson's correlation coefficient, partial correlation, and least square regression analysis.

3. FINDINGS

The sample demonstrated vivid demographic profiles (refer table 1).

Table 1. The Demographic Profile of the Respondents

Features		Frequency	Percentage
Age	1. Below 20 years	39	29
	2. 20-25	35	26

	3. 26-30	32	24
	4. 31-35	19	14
	5. 36-40	06	04
	6. Above 41	04	03
	Total	135	100%
Gender	1. Male	18	13
	2. Female	117	87
	Total	135	100%
Marital Status	1. Married	91	67
	2. Unmarried	44	33
	Total	135	100%
Tenure	1. Short term (= < 6 months)	65	48
	2. Long term (> 6 months)	70	52
	Total	135	100%

As depicted by table 1, majority (87%) of respondents were female employees. The sample comprised of fairly equal number of employees for

both short employment tenure (48%) and long employment tenure (52%). Table 2 exhibits the summary statistics of the demographic factors of the respondents.

Table 2. Summary Statistics

	Age	Gender	Civil_Status	Tenure
N	135	135	135	135
Mean	2.48	1.87	1.3259	1.5185
Median	2.00	2.00	1.0000	2.0000
Mode	1	2	1.00	2.00
Std. Deviation	1.321	.341	.47047	.50152

According to the statistics, majority represents below 20 years age category (1= below 20 years). It implies most of the are just beginners of their career. Females dominates the sample 2 = females). This is obvious as garment industry in general employs more females than males. Again the sample comprised of more

married employees than unmarried (1=married) indicating changing the job is a more serious concern for them than others.

So as to test the differences among two groups of employees with respect to perceived supervisor support, a test of ANOVA was carried out of which the results are shown by table 3.

Table 3. Results of ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
Perceived supervisory support (x)	Between Groups	6.493	1	6.493	11.422	.001
	Within Groups	75.608	133	.568		
	Total	82.101	134			
Turnover intention (y)	Between Groups	46.627	1	46.627	24.900	.000
	Within Groups	249.049	133	1.873		
	Total	295.676	134			

The results of the one way ANOVA test shows a significant difference between short tenured employees and long tenured employees with respect to both perceived supervisor support and turnover intention. It indicates that these two groups of employees are not holding the identical views regarding how they are been treated by their supervisors and their idea to remain in

the organization under any circumstance.

To establish that the perceived supervisory support and employee turnover intention is related, a correlation analysis is conducted. This resulted in a moderate negative relationship between variables concerned(table4)

Tale 4. Results of Correlation Analysis

		Perceived supervisory support (x)	Turnover intention (y)
Perceived	Pearson Correlation	1	-.347**
supervisory support	Sig. (2-tailed)		.000
(x)	N	135	135

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

Based on the available statistical evidences it is concluded that perceived supervisory support is significantly and negatively related with employee turnover intention ($r = -0.347$). The results complies with the previous findings in this realm (Ismail, et al., 2010; Firth et al., 2003; Swanberg et al., 2011; Munn, Barber and Fritz et al., 2007). In practice, immediate supervisor plays a significant role in the job related behavior of an employee as he who is the primary source of influencer/motivator for any employee. In absence of healthy relationship between them, both parties may develop ill feeling towards other party. Then they found difficult to remain jointly at work resulting withdrawal of one party, usually the less-privileged ones: employees.

The main focus of this study was to test the moderating effect of employment tenure in to the relationship between perceived supervisory support and employee

turnover intention. Once the said relationship is established, next it is required to test the moderating effect

of employment tenure. A multiple regression is performed to test the moderating effect where

interaction effect should be significant in case of significant moderating effect.

The moderation effect is tested with multiple regression analysis (OLS), where all predictor variables and their interaction term are centered prior to model estimation to improve interpretation of regression coefficients. A single regression equation forms the basic moderation model:

$$Y = i_5 + \beta_1 X + \beta_2 Z + \beta_3 XZ + e_5$$

Where β_1 is the coefficient relating the independent variable, X, to the outcome, Y, when $Z = 0$, β_2 is the coefficient relating the moderator variable, Z, to the outcome when $X = 0$, i_5 is the intercept in the equation, and e_5 is the residual in the equation. The

regression coefficient for the interaction term, β_3 , provides an estimate of the moderation effect.

If β_3 is statistically different from zero, there is significant moderation of the X-Y relation in the data (Aiken & West, 1991 as cited in Fairchild, A.J. & MacKinnon, D.P., 2009).

Table 5. Results of Regression Analysis

Coefficients ^a								
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	4.581	2.043		2.242	.027			
1 SUP_SUP	.190	.493	.100	.386	.007	-.347	.034	.030
Tenure	.877	1.300	.296	.675	.005	-.397	.059	.052
Interaction	-.438	.304	-.806	-1.440	.015	-.475	-.125	-.110

a. Dependent Variable: LTO_sum

The regression model of four predictors, constant, perceived supervisory support, employment tenure and interaction is significant (ref. appendix). Model summary statistics indicates that 48% of the dependent variable's total variance is explained by the regression model (ref. appendix). Table 5 presents the coefficients for the predictors. Accordingly, all predictors are significant (ref. table 5). Especially, the interaction component is significant at 95% confidence level ($P < 0.05 = 0.015$). This implies there is a significant moderating effect by employment tenure in to the relationship between perceived supervisory support and employee turnover intention. The interaction coefficient is negative which indicates

that shorter employment tenured employees are likely to develop turnover intention than that of longer tenured workers as a result of poor perceived supervisory support. Experienced workers can aid themselves in any job related matter. In long term supervisory support may not be that much essential in completing the job demands. In contrast, junior workers with shorter employment tenures have to depend more on his/her supervisor while fulfilling the job demands. Hence, it is established that hypothesized relationship for moderating effect (H2) can be accepted as significant.

Findings support the existing literature that claim the moderating effect of employment tenure (Nawaz, 2009).

4. CONCLUSION

The study was aimed at testing moderating effect of employment tenure on employee turnover intention caused by the perceived supervisory support. The results revealed that the tested moderating effect is significant. Employees whose employment tenure is short i.e. less than 6 months tend to be greatly affected by negative perceived supervisory support. Consequently, turnover intention is high among short tenured employees than the long tenured employees. The findings of the study support the

theoretical implication of moderating effect of employment tenure on to the relationship between perceived supervisory support and employee turnover intention. Similarly practical implications suggest employers to take necessary measures for improving the positive perceived supervisory support within the employees especially whose employment tenure is short. It is advisable for supervisors or the leaders to be more supportive to the new comers as they are new to the work setup, organizational procedures and regulations, and to the organizational culture.

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Appendix

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.480 ^a	.230	.212	1.31833

a. Predictors: (Constant), Interaction, SUP_SUP, Tenure

b. Dependent Variable: LTO_sum

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	67.999	3	22.666	13.042	.000 ^b
	Residual	227.677	131	1.738		
	Total	295.676	134			

a. Dependent Variable: LTO_sum

b. Predictors: (Constant), Interaction, SUP_SUP, Tenure

Sri Lankan Beverage Consumers' Purchase Intention

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Abstract

Generally, it is accepted that the consumption of soft drinks is hazardous for human health. There are heavy involvements by some of the health authorities and the government to discourage the consumption of soft drinks specially by student community and encourage them to use indigenous options. Nevertheless, the soft drink market in Sri Lanka is huge and some popular brands have shared considerable market shares among themselves. Since there is a need for influencing the demand and consumption, it is inevitable to understand the behavior patterns of market variables. Accordingly, this study focused the relationship of few variables with ordinary consumer's preference for buying soft drinks. The research model of the study was included four independent variables, education, status, health concerns and experience. The research model was tested in Gampaha District in Sri Lanka where there is the second highest population and largest student population. Data was collected from 300 randomly selected sample of soft drink consumers by using standard, structured measurements. The result of the study confirmed that education level and health concern negatively and perceived social status and buying experience positively related to the Sri Lankan beverage consumers' purchase intention.

Keywords: Purchase Intention, Beverage Consumption, Consumer Preference, Soft Drinks, Sri Lanka

1. INTRODUCTION

Consumer buying behavior refers to the multi-step decision making process people engage in and the actions they take to satisfy their needs and wants in the market place. The buying behavior is results of motives. In buying process various motives may conflict with one another. A

motive is a stimulated need that an individual seeks to satisfy. The decision processes and the final act of the consumer associates with evaluating, buying consuming, and discarding products. Consumer purchase intention is central to the marketing of a product. Moreover, marketers always try to address the consumers' motives, drives by using

promotional strategies including heavy advertising campaigns to influence consumers' behavior favorably towards their products.

The soft drink market in the world is one of the heaviest markets while it is expected a further growth. The existing evidences prove that the soft drinks consumption is increasing worldwide. In comparison with the year 2009, the global soft drinks consumption increased by 4% in 2010 with a per capita consumption of 81 liters. The highest growth trend in market in year 2010 was estimated in Asian countries, including world largest markets, India and China reporting growth rates of 16 % and 14 % respectively News System (2011).

As per Statista 2014, the revenue in the soft drinks segment will amount to US\$667,384m in 2020. Moreover, the market is expected to grow annually by 6.5% (CAGR 2020-2025). (The compound annual growth rate (CAGR) is the annualized average rate of revenue growth between two given years, assuming growth takes place at an exponentially compounded rate). In global comparison, most revenue will be generated in the United States (US\$ 200,290m in 2020). In relation to total population figures, per person revenues of US\$ 89.67 will be generated in 2020. The average per capita consumption will stand at 45.2 L in 2020.

The changing income levels and lifestyles of Sri Lankans are likely to shift their consumption patterns to higher level of consuming soft drinks. Sri Lanka's total soft drink market is worth around US\$ 80 million

(Niroshan et al, 2008). The large scale companies dominate the beverage market in Sri Lanka.

However, almost all of the beverages are sugar-sweetened and include artificial flavours and preservatives. Consumption of such beverages has detrimental effects on the general health of the people. The reviews on the relationship between the use of sugar-sweetened beverages and possibility of weight gain provide positive strong evidences. Particularly sugar-sweetened carbonated drinks well promotes weight gain and obesity among people (Malik, Schulze & Hu, 2006). Moreover, the consumption of sugar-sweetened soft drinks is strongly associated with dental erosion (Levine, Nugent and Rudolf, 2007; Sanhoury and Hashim, 2007). Accordingly, it is obvious now over use of sweetened beverages create poor health among consumers.

1.1 Research Problem

The problem of this study was defined in the perspective of the Sri Lankan beverage consumers' health condition which may likely to endangered due to heavy consumption of sweetened beverages. There are evidences to indicate that soft drink consumption is growing in Asian countries (Taylor, Satija, Khurana, 2011).

In Sri Lanka, suger-sweetned beverage consumption has been growing at significant rate. From 2009 to 2013, annual average per capita GDP growth was 6.5%, while annual average growth rate of

beverage consumption was 7.5% (Euromonitor International, 2014). According to Euromonitor International, 2013, Sri Lankans have consumed about 78 million litres of carbonated beverages in 2012. As estimated average prices, the ratio of total sales over the volume was 124mn LKR for Carbonated beverages within the period of 2014-2017. The forecasted sales volume for 2017 was 94 million liters. Average price increase for beverages in Sri Lankan market is of 12% over the period of 2014- 2017. However, as per the Sri Lanka Department of Census and Statistics, actual average price increase between January 2014 and June 2017 is 17%.

In Sri Lankan context, overweight and obesity of people is at a low 0.5 % in children under 5 years of age. But it increases to 5-6% by the Year 10 in school age. Among Sri Lankan adult males, overweight and obesity is 24.5 % and 34.4 % respectively while adult females report the overweight as 19.6% and obesity 30.4%, in 2010. In addition, diabetes level in the same group remains 9.7%. Both diabetes and cardiovascular diseases, are responsible for significant morbidity and mortality in Sri Lanka. The current health expenditure on all NCDs amounts to Rs 91.6 billion, 35.2 % of the total current health expenditure (Health Economics Cell, 2013-2016).

Although the available statistics show a possibility of a severe health problem among beverage consumers, there is a paucity of the empirical studies for studying the Sri Lankan beverage consumers' attitudes and

buying behavior patterns. Nilantha and Lilani, (2012) studied the soft drink consumption in Sri Lankan adolescents and found that nearly 82 % consumed sugar-sweetened soft drinks once a week and out of those, 2% were consuming daily. However, due to paucity of empirical evidences in the field, the present researchers are in a difficulty to go for testing complex explanatory research models on beverage consumers' attitudes and behavioral patterns and have to conduct the preliminary explorations for accumulating basic information in the field. However, it is obvious that basic explorations which will open more avenues for advanced studies in the field are essential.

1.2 The Conceptualization

Consumer purchasing behavior refers to the behavior of final consumers in purchasing a product (Kotler et al, 2012). Yang, Hung & Feng (2011), studied the influence of demographic variables like age, education, social class, experience and gender on consumer's purchase intention in fashion clothing industry. Paul, Turn & Alan (1996) revealed that the young consumers who have less buying experience, trust and rely more on the branded products than their older counterparts. However, since such primary studies are lacking in the field of beverage consumers' purchase intention, the focus of this study was limited only for finding the relationships between four independent variables and Sri Lankan beverage consumers' purchase intention. Many studies have been conducted on consumers purchase intention instead of studying the real

consumer behavior since researchers indicate that the consumers' purchase intention reflects their real buying behavior. The study selected Education Level, Health Concern, Social Status and Buying Experience as independent variables to investigate their relationships with Sri Lankan beverage consumers' purchase intention

1.3 Research Question

By taking the lack of empirical evidences in the field into consideration and on the basis of the available findings in other fields, the study found the answer for the research question "Does the relationships exist of the educational level, health concern, social status and buying experience of Sri Lankan beverage consumers with their purchase intention of beverages.

1.4 Research Objectives

Based on the conceptualization that may exist in the real beverage market, following research objectives were formulated.

- To investigate the relationship between education level and purchase intention of Sri Lankan beverage consumers' purchase intention.
- To investigate the relationship between health concern of the consumer and purchase intention of Sri Lankan beverage consumers' purchase intention.
- To investigate the relationship social status of the consumer and purchase intention of

Sri Lankan beverage consumers' purchase intention.

- To investigate the relationship between buying experience of consumer and purchase intention of Sri Lankan beverage consumers' purchase intention.

1.5 Hypotheses

To achieve the objectives of the study, statistically testable four hypotheses were formulated. Among hypotheses, education level and health concern were hypothesized negative relationships with purchase intention while positive relationships were hypothesized between social status, buying experience and purchase intention of Sri Lankan beverage consumers.

2. METHODS

A deductive approach was used for the study where the researcher deduced four testable hypotheses from reviewing literature. The study used quantitative positivistic approach while the sample of 300 beverage consumers were randomly selected from the 13 divisional secretariats of Gampaha district in Sri Lanka. The majority of the respondents (65.0%) to the study were female, indicating that more females are consuming soft drinks in Gampaha as compared to males (35.0%). Since the 61 respondents are above 60 years of age represented 30.5%. The majority of soft drink consumers are mainly elder people. By considering educational level of the customers, the majority of the respondents (58) were below ordinary level holders, only (8.0) % of the

respondents are bachelor's degree holders. The data obtained from the questionnaire revealed that majority of the customers (63%) buying soft drinks are married.

The sample was surveyed by self-administering a standard, structured questionnaire for collecting data. The questionnaires were directly distributed to the beverage consumers and data was get collected on the spot. The questionnaire composed of two major sections one for gathering the demographic information of the sample members and other part for collecting data on the independent and dependent variables. The time horizon of the study was cross sectional and the study setting was non-contrive.

2.1 Testing Assumptions

Since the study was correlational, a single multivariate assumption, normality of the variables were tested. As per the values for skewness and kurtosis given in the table 1. Proved that the no variable is deviated from the normality assumption.

Table 1. Test of Normality

Variables	Kurtosis	Skewness
	Statistic	Statistic
Consumer purchase intention	0.24	-0.755
Education	-0.531	0.006
Health concern	-0.734	0.244
Social status	-.581	0.084
Experience	-1.019	1.431

3. RESULTS

To answer the research questions, and achieve the objectives formulated, the Pearson correlation coefficients were estimated for testing four hypotheses.

The Pearson correlation coefficients are presented in the table 2.

Table 2. Results of Correlation Analysis

Factors	Consumers' purchase intention	Sig.
Education level	-0.664	0.000
Health concern	-0.314	0.003
Social status	0.497	0.000
Buying experience	0.561	0.000

As per the table 2., the P-value for educational level reported as 0.000 while the correlation coefficient remains -0.664. It proves that there is a significant negative relationship between educational level and purchase behavior. Similarly, the negative relationship hypothesized in the second hypothesis can also be accepted under 95% of significant level with a P value less than .005. The third hypothesis was formulated as significant positive relationship between social status and purchase intention which denotes .497 correlation coefficient with a P value equals 000 and can be accepted. The last hypothesis proved positive significant relationship between buying experience and purchase

intention with .561 Pearson correlation coefficient and P value is significant at 99%. Accordingly, all the four hypotheses formulated in this study were accepted.

4. CONCLUSION

The results of the study concluded that the education level and health concern significantly and negatively correlated while social status and buying experience positively and significantly correlated with Sri Lankan beverage consumers' purchase intention. The result also implies that the people should be educated and made aware of possible health hazardous of beverage consumption if people are needed to be discouraged from beverage consumption. When the perceived social status getting improved, the usage of beverage consumption goes up. However, it is dubious whether the perceived social status forces the consumers to increase the usage or whether they perceive that the purchasing and using beverages represents the higher social status, since this is not a causal study. More studies are essential for finding the causality between possible independent variables and purchase intention. The higher the buying experience of beverages higher the beverage consumption of Sri Lankan consumers. It implies that the children and school students should be prevented from frequently experiencing the purchase of beverages. It is recommended the non-availability of sweetened beverages in school canteens and in shops nearby the places where children are available. Also as an

optional solution, fresh fruit drinks and other indigenous healthy drinks can make available.

For the future researchers there are more avenues opened for extending into other variable doing causal studies by covering the total beverage market in Sri Lanka.

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Attitudes towards Alcohol Use among University Students in Sri Lanka: Application of the Theory of Planned Behaviour

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Abstract

Alcohol use is regarded as a health issue among university students, which presently has a high occurrence. The objective of this research is to investigate the determinants of intentions toward Alcohol use among university students. Based on the Theory of Planned Behaviour (TPB), it is hypothesized that favourable attitude, subjective norms, and lack of behavioural control will be positively and significantly associated with intention towards alcohol use and alcohol use behaviour among university students in Sri Lanka. A questionnaire was developed based on the TPB domains. Separately, alcohol use behaviour questionnaire was developed. Both were circulated among university students through google forms and social media. It was received a total number of 320 completed questionnaires from students. Coefficients path analyses of study variables, attitude ($b=0.34$), subjective norms ($b=0.28$) indicate a significant effect on the intention to use alcohol at the 1% level (H_1 & H_2). However, PBC does not indicate a significant impact on intention ($b=0.03$) to use alcohol (H_3). Furthermore, Intention towards alcohol use is positively and significantly correlated with alcohol use behaviour ($b=0.31$, H_4). This research validates the possibility of TPB in studying the behavioural intention and actual behaviour in a different social context. These findings will be important policy implications, policy-makers who wish to reduce alcohol use among university students can introduce interventions targeting to reduce positive attitudes towards alcohol use intention and favourable subjective norms towards reducing alcohol use intention. Correspondingly, policy-makers can propose educational awareness programs to increase the PBC among university students relating alcohol use intention and behaviour. The results indicate the effectiveness of diverse approaches to alcohol reduction programs.

Keywords: Alcohol use intention, Attitudes, University Students, Theory of planned behaviour, Sri Lanka

1. INTRODUCTION

Although policies and laws control alcohol use among adolescents, it remains as one of the most common problems among university students.

During the last few decades, university administrations articulated concern about increasing levels of alcohol use by university students (Carey, Scott-Sheldon, Carey, Kelly, & DeMartini, 2007). Drinking alcohol among young people is a universal issue. Alcohol

use is a very vital factor for illness and social, and other damage globally (Beaglehole & Bonita, 2009). Therefore, reducing alcohol use among university students is the main challenge faced by the government's alcohol risk reduction programs. It has been acknowledged that the alcohol use by university students support directly and indirectly in the increase of physical, emotional and social damages (Gutjahr, Gmel, & Rehm, 2001). University students consume more alcohol quantities at a time than their peers (Gill, 2002). Drinking alcohol by university students intensify the risk of social and academic difficulties as well as accidental injury, fighting and death (Wechsler, et al., 2002). Alcohol consumption is the most serious problem in university life worldwide (Davoren, Demant, Shiely, Ivan, & Perry, 2016). The worldwide alcohol use of persons over 15 years old is 6.2 litres of alcohol every year averagely (WHO, Global Status Alcohol Report, 2014). Total alcohol per capita (15 year and above) consumption, drinkers only (in litres of pure alcohol) for male 18.9 litres, for female 6.7 litres, and both sexes 14.9 litres in 2016 (WHO, 2018). The economic cost of excessive alcohol use is considerable worldwide, for instance, in the UK the cost of alcohol-related damage has been assessed as £3 billion per year (Balakrishnan, Allender, & Scarborough, 2009). The predicted current value of present and future financial burden of the alcohol-related problems for Sri Lanka in 2015 was USD 885.86 million, 1.07% of the GDP of that year (Ranaweera, et al., 2018). Alcohol use is correlated with

harmful consequences such as accidents, reduced educational performance (Kuntsche, Kuntsche, Thrul, & Gmel, 2017). The impact of harmful outcomes of alcohol use is not only for drinkers but also for other people include road accidents and life losses, forcefulness, violence, and crime, damage to domestic violence and harm such as mental stress and distress, agony and grief, separation, and divorce, poverty (Kuntsche, Kuntsche, Thrul, & Gmel, 2017; Anderson & Baumberg, 2006).

Being with heavy drinking peers is significantly correlated with the amplified use of alcohol among student (Cheng & Lo, 2015). The multiple disadvantage theory explores how alcohol use is correlated with the setting of disadvantages, such as social-structural factors, aspects of social exclusion and factors related to mental health (Lo, Howell, & Cheng, 2013). The model describes risk factors of alcohol use among students, for example, poor socioeconomic status of students and their maladaptive reactions to persistent stress (Poonawalla, Kendzor, Owen, & Caughy, 2014). To introduce successful alcohol use reduction interventions, it is essential to comprehend the students' present alcohol use, and what would best influence to reduce positive attitudes and intention towards alcohol use (Hasson, 2010). Thus, this research will be important to comprehend the determinants of alcohol use among university students thereby introduce successful alcohol use reduction interventions.

1.1 Alcohol Use among University Students

According to the National alcohol use prevalence survey in Sri Lanka (2014), conducted in 2014 reported that 39.6% males are present alcohol users whereas only 2.4% females are present alcohol user in Sri Lanka (Somatunga, Ratnayake, Wijesin, Yapa, & Cooray, 2014). Prevalence of alcohol use among Sri Lankans is increasing and present alcohol users in urban areas (32.9%) are higher than rural areas (20.8%) in Sri Lanka (De Silva, Samarasinghe, & Gunawardena, 2009). Many types of illicit substances such as, Betel chewing with tobacco (28.48% males and 10.44% females), Barbul, Madana Modaka, and cough syrups were used by schoolchildren (Liyanage, et al., 2015). A noteworthy higher percentage of male population than female population showed positive attitudes toward the alcohol use, male, 27%, and female 7 % (Perera & Mohammad, 2004). The alcohol consumption rates and related consequences suffered among college students are well documented (Oster-Aaland & Neighbors, 2007). University students use alcohol in a different environment (Oster-Aaland & Neighbors, 2007). The freedom that students have to receive alcohol use experience and free access to alcohol for university students is greater than in early periods (Harpin, Brooks-Russell, Ma, James, & Levinson, 2018). Freedom and easy access to alcohol are the main factors for the intention to use alcohol (Warren, Smalley, & Barefoot, 2015). Alcohol use is most common among university students (Oster-Aaland & Neighbors, 2007). According to Yurasek, et al

(2017), extreme level of alcohol use among university students can be a dangerous issue relating to social and behavioural negative impact. University students who engage in alcohol use indicate a greater rate of non-attendance, reduced test results, and nor performing school work well (White & Hingson, 2013). According to Carpenter et al., (2008), University setting itself encourage alcohol use. University students are in a transitional period. This transition leads them to experience the extensive transformation in social activities, leisure time, socialization, and involve in risky behaviours such as alcohol use (Arria, et al., 2010). Alcohol use is a very common behaviour among male and female Sri Lankan graduates. However, it is a highly frequent among male undergraduate (30.5%) than female undergraduates (3.5%) (Perera & Mohammad, 2004). Same study found that third year Sri Lankan university students tend to use more alcohol compared to other years, perhaps it may due to socialization process and stress. Third year students will have to find jobs after their graduation and they may have to consider about job security, future challenges, and uncertainty about their future and may encourage them to use alcohol (Perera & Mohammad, 2004). Sri Lankan cultural norms and values do not encourage alcohol use by adults, specially students. This may have an influence on less prevalence of alcohol use among undergraduates. However, Sri Lankan university students may tend to use alcohol because of adapting to the new university environment, and being away and detached from their families (Perera & Mohammad, 2004).

1.2 The Theory of Planned Behaviour (TPB) and Alcohol Use

The Theory of Planned Behaviour (TPB) (Ajzen, The theory of planned behavior, 1991), has been used to comprehend the health-related conduct in many studies (Fishbein & Ajzen, 2010), drinking intentions and behaviour among young people (Norman, Bennett, & Lewis, 1998; Cooke, Sniehotta, & Schüz, 2007; Zhao, White, Young, & Obst, 2018). The TPB is an extension model of the theory of reasoned action (Ajzen & Fishbein, 1980). TPB predicts that if a person has a solid intention to involve in behaviour, then there is a higher possibility of performing the behaviour. The intention and behaviour are predicted by three components; 1, Attitude, individual's assessment of the behaviour, 2, Subjective Norms (SN), perception of the social pressure to engage in the particular behaviour, and 3, Perceived behavioural control (PBC), their belief about the ability to carry out the particular behaviour. There is consistent evidence that intentions are predicted by attitudes and subjective norms, and then, intentions predict the particular behaviour. According to Ajzen (2011), intention is a person's willingness to accomplish a given behaviour. On the other hand, the pattern of PBC findings are more mixed (Norman & Conner, 2006). For instance, PBC is negatively associated to frequency of alcohol use (Norman *et al.*, 1998; Norman & Conner, 2006), but in other studies, PBC is positively associated to alcohol use (McMillan & Conner, 2003).

Numerous studies of attitude-behaviour relations have demonstrated that people's attitudes are often incongruent with their behaviour (Fishbein & Ajzen, Belief, attitude, intention, and behavior: An introduction to theory and research, 1975). This disparity allows researchers to develop theories that can explain well or more accurately. TPB is one of such greatest theory developed by Ajzen (1991). Social influence on alcohol use is correlated largely with attitudes toward alcohol use and alcohol use behaviour (Perkins, 2002). University students mostly think that their classmates take alcohol more quantities in a time and more regularly than themselves (Baer & Carney, 1993). A comprehensive analysis of non-drinkers discovered that the peers' attitudes toward alcohol consumption considerably forecasted students' drinking behaviour. Those who did not have colleagues that prevented them from alcohol use, they were three-fold more likely to use alcohol at the university than students who had peers with undesirable attitudes toward alcohol use in the university (Lo and Globetti 1993). All the above three dimensions are believed to straightforwardly influence on intention and thereby behaviour.

The TPB has been developed as one of the most powerful and important behavioural involvement models, the model is given as follows;

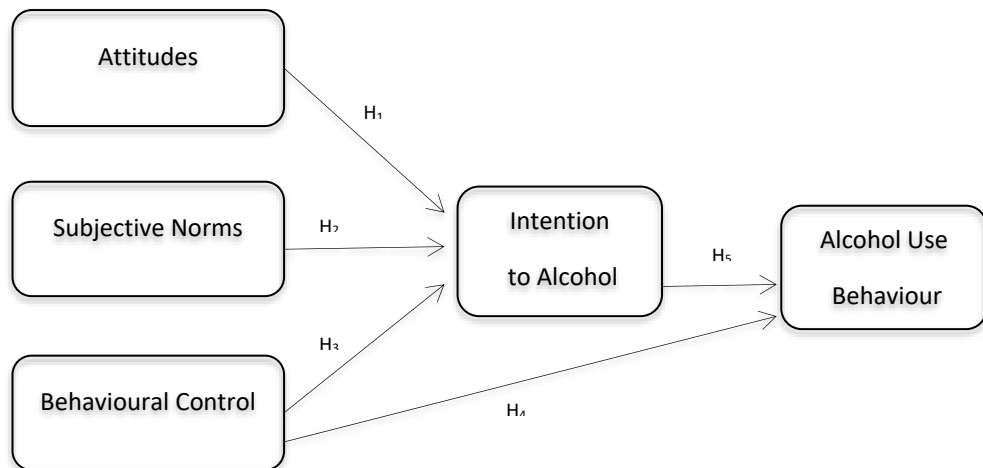


Figure 1. Study Overview based on the TPB (Ajzen, 1991)

The TPB has been fruitfully applied to comprehend main beliefs against different behavioural accomplishments among university undergraduates, including students' alcohol consumption (Cooke, Dahdah, Norman, & French, 2014).

H₅: Intention of alcohol use is positively and significantly related to alcohol use behaviour.

2. METHOD AND MEASURES

2.1 Participants

Google forms and social media survey was carried out with Sri Lankan government university students. The Theory of Planned Behaviour questionnaire and the alcohol use behaviour questionnaire were circulated through google forms and social media based on the above measurements of variables. Data collection was carried out from 15th January to 15th May 2018. It was received a total number of 340 completed questionnaires from both male and female students. However, it was received only 20 completed questionnaires from female students who had never used alcohol.

H₁: Positive Attitude towards alcohol use is positively and significantly related to alcohol use intention.

H₂: Positive Subjective Norm towards alcohol use is positively and significantly related to alcohol use intention.

H₃: Positive Perceived Behavioural Control towards alcohol use is positively and significantly related to alcohol use intention.

H₄: Positive Perceived Behavioural Control towards alcohol use is positively and significantly related to alcohol use behaviour.

Therefore, female students were excluded from the analysis and 320 male students' questionnaires were analysed.

2.2 Background information

Few background questions were included to collect demographic data, such as Sector that they have come from, urban (n=133, 41.5%), rural (n=167, 52.2%) estate (n=20, 6.3%), class year, (First year, second year, third year, and fourth year) Religion (Buddhist, n=278, 86.9%, Hindu n=18, 5.6%, Muslims n=6, 1.9%, Catholic n=10, 3.1%, Christian n=8, 2.5%), and ethnicity (sinhala n=295, 92.2%, tamil n=21, 6.6%, moor n=6, 1.8%). Respondents were asked to mention the age of their first alcohol intake.

2.3 Attitudes

Positive attitudes towards alcohol use were measured based Drinking Motives Questionnaire (DMQ) developed by Cooper (1994). This 20-item DMQ includes three subscales. Subscales and the measurements for each subscale were as; 1) Coping, "to forget your worries"; 2) Enhancement, "Because you like the feeling"; 3) Social, "To be sociable". It was measured based on a 5-point Likert scale.

2.4 Subjective Norms (SN)

Favourable subjective norms towards alcohol use measured using a question based on prior research (Zimmermann & Sieverding, 2010). Acceptance of alcohol use by parents, friends and

important others was measured. The questions included were; 1) How do you think your parents, friends, and important others would react if they knew that you drink alcohol?. It was measured based on a 5-point Likert scale 1 = *disapprove* to 5 = *approve*

2.5 Perceived Behavioural Control (PBC)

PBC was measures based on the Rutgers Alcohol Problem Index (RAPI) developed by White & Labouvie, 1989). This scale deals with the incapability of rejecting alcohol. The RAPI consist of 23 elements. Four elements cover the lack of behavioural control. They were asked following questions to measure PBC; 1) Did you feel that you want more alcohol than you took to have the same effect; 2) Did you attempt to regulate your alcohol intake by controlling to drink only at confident intervals of the day or in confident places; 3) Did you try to reduce or stop drinking; 4) Have you been drinking when you were told by yourself not to drink?. It was measured based on the 5-point Likert scale.

2.6 Drinking intentions

Drinking intention to use alcohol was measured based on two questions in prior research (Zimmermann & Sieverding, 2010). They are; Do you have the intention to be drunken within the next 30 days, and How possibly you are going to be drunk within the next 30 days. It was measured based on a 5-point Likert scale (very unlikely-very likely).

2.7 Drinking behaviour

Two questions were included to measure the real alcohol use behaviour, they are 1) Usually, how many drinks did you take every instance you had alcohol during last 30 days? 2) What is the highest amount of drinks you have taken every instance during the last 30 days?

3. RESULTS

3.1 Statistical Analyses: Reliability and Validity of Scales

Cronbach's Alpha Coefficient was calculated to measure the internal

consistency of the items used in the research, It should be above 0.70 to considered as generally satisfactory level (Taber, 2018).

As given in table 01, all the values of items are above the generally satisfactory level.

Root Mean Square Error of Approximation (RMSEA) value less than 0.05 is good, and between 0.05 and 0.08 is satisfactory level, whereas the value is greater than 0.1 is poor (Fabrigar, MacCallum, & Wegener, 1999), as given in table 01, all items are higher than the acceptable level.

Table 1. Confirmatory Factor Analysis

Variables	Chi-square	RMSEA	GFI	AGFI	CFI	TLI	NFI	AVE	CR
Attitudes	3.321	0.052	0.922	0.853	0.822	0.856	0.845	.49	.82
Subjective norms	3.102	0.081	0.812	0.902	0.965	0.814	0.813	.54	.81
Behavioural Control	3.102	0.054	0.953	0.924	0.971	0.858	0.916	.42	.84
Intention	3.751	0.048	0.941	0.957	0.992	0.812	0.817	.51	.83
Behaviour	3.441	0.053	0.937	0.981	0.943	0.874	0.864	.48	.86

3.2 Descriptive statistics

Out of 320 male students, 233 students (72.8%) reported that they have used alcohol one or two times within last 30 days, and during two to three hours they have taken two to three drinks. Only a few students reported that they

took alcohol more than four times within the last 30 days, and during two to three hours they have taken more than four drinks. It indicates that most students use alcohol, however, it is not problematic drinking as quantity and frequency are below the problematic drinking definition.

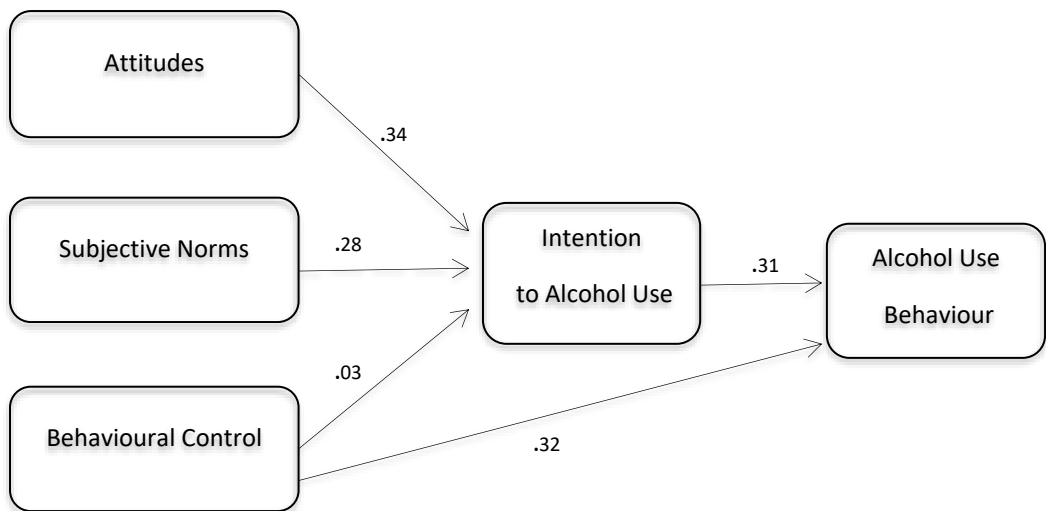
Table 2. Mean, Standard Deviation, Bivariate Correlations of study items

Construct	Mean	SD	1	2	3	4	5	6
1 Alcohol Use	2.95	1.82						
2 Attitudes	3.82	1.76	.38**					
3 Subjective Norms	3.61	1.75	.45**	.45**				
4 Perceived Behaviour Control	3.98	1.59	.35**	.34**	.39**			
5 Intention	3.06	1.87	.43**	.32**	.38**	.31**		
6 Behaviour	4.02	1.35	.34**	.39**	.31**	.39**	4.12**	-

This study determined to conduct Structural Equation Modelling (SEM) to test the hypotheses

Figure 02 displays the coefficients path analyses of study variables. As

figure 02 displays, all the postulated paths were positive and significant, except behavioural control and intention to alcohol use.

**Figure 2. The path analyses of the study variable**

Coefficients path analyses of study variables, attitude ($b=0.34$), subjective norms ($b=0.28$) indicate a significant effect on the intention to

use alcohol at the 1% level (H_1 & H_2). However, PBC does not indicate a significant impact on intention ($b=0.03$) to use alcohol (H_3). Furthermore, Intention towards alcohol use is positively and significantly correlated with alcohol use behaviour ($b=0.31$, H_4).

4. DISCUSSION AND CONCLUSIONS

The objective of this study was to further examine the applicability of the TPB to understand alcohol use among public university students in Sri Lanka. The empirical data analysis backs the TPB domains and previous studies in the field of alcohol use intention and behaviour, indicating that that attitude and subjective norms are significant and positive predictors of alcohol use intention and behaviour. Hypotheses relating to attitudes, and subjective norms to predict intention were significantly and positively supported. These findings are consistent with the previous studies that respondents with a positive attitude towards intention and intention to behaviour, and social norm of alcohol use significantly correlated with alcohol use behaviour (Trafimow, 1996; Wall, Hinson, & McKee, 1998). Equally, respondents with a negative attitude towards alcohol use as well as who do not consider the social norm of alcohol use have lower intentions to use alcohol and do not perform alcohol use

behaviour. Hence, the applicability of the TPB was discovered to be significant predictors of alcohol use behaviour. However, the perceived behavioural control towards alcohol use behaviour was not supported. It was assumed that alcohol use behaviour would be forecasted by intention to alcohol use and behavioural control. Steady with the conclusions of Conner, Warre, & Cnlos (1999), PBC failed to considerably forecast the alcohol use, whereas intention was significant forecaster alcohol use behaviour. The findings of this study indicate that the relatively high degree of risky alcohol use among university male students. Individual attitude and subjective norms subsidise of university students' intention towards alcohol use. However, perceived behavioural control towards alcohol use behaviour was not supported. Hence, interventions for developing positive attitudes, subjective norms, and behavioural control towards non-use of alcohol could be helpful to reduce alcohol use among university students. There are a few limitations to generalize the finding to the entire university students. The first one is the small sample size of respondents ($N=320$). The second limitation is that the online data collection method. Questionnaires were sent through google forms and social media. The third limitation is not including females in the study. Therefore, future studies should be undertaken with large and diverse sample size.

Despite the above limitations, this research validates the possibility of TPB in studying the behavioural intention and actual behaviour in a

different social context. These findings will be important policy implications. For instance, policy-makers who wish to reduce alcohol use among university students can introduce interventions targeting to reduce positive attitudes towards alcohol use intention and favourable subjective norms towards reducing alcohol use intention. Correspondingly, policy-makers can propose educational awareness programs to increase the PBC among university students relating alcohol use intention and behaviour. The results indicate the effectiveness of diverse approaches to alcohol reduction programs. It is needed interventions to reduce the intention to use alcohol among university students.

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