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Journal of Management Matters

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Volume 8 Number 1 September 2021

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Journal of Management Matters

Volume 8 Number 1 September 2021

Contents

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Faculty of Management Studies, Rajarata University of Sri Lanka

A conceptual model for purchase intentions of gem and jewelry industry: A systematic literature review

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Abstract

Sri Lanka's top luxury goods industry, gem and jewelry, contributes economically, financially and socially by value generation. It is important to understand the relationships between consumer behaviour and purchase intention of gem and jewelry. The purpose of this concept paper is to contribute to the existing knowledge by introducing a conceptual model which could be applied by researchers and practitioners to understand and analyze the relationships between identity-based consumer behaviour and purchase intention of gem and jewelry. The methodology of this paper is based on a systematic literature review of previously published literature. The planning stage of the review identifies the objectives. The primary objective is to develop a conceptual model based on the relationships between consumer behaviour and purchase intention of gem and jewelry. Further the study determines four more objectives in order to be supportive for the development of the primary objective. They are, to set the boundaries for the dimensions of the impact of gender on identity-based motivation that moderates the relationship between identity-based consumer behaviour and purchase intention, to establish the theoretical underpinnings of the impacts of gender on identity-based motivation that moderates the relationship between identity-based consumer behaviour and purchase intention, to seek for the empirical evidence of the impacts of gender on identity-based motivation that moderates the relationship between identity-based consumer behaviour and purchase intention and to apprehend the positive conditions proposed by literature as positive for purchase intention of gem and jewelry. At length the conceptual model is developed.

Keywords: *Gem and jewellery, gender, identity-based consumer behaviour, identity-based motivation, purchase intention.*

1. Introduction

The Sri Lankan gem and jewellery industry, which is an ancient trade, has become an export driven industry playing an important role for the national economy by generating a substantial revenue (Ekanayake & Abeysinghe; 2010;Nayeem, 2019; Refai,2019). The Sri Lankan government facilitates fiscal and financial incentives to gem and jewellery companies, those that are investing in manufacturing industry, with an objective to make Sri Lanka *the hub of gem and jewellery* in Asia (www. srilankagemauhto.com). Citing the researcher Nayeem (2019), Daily Mirror Business (2019) argues that there is a visible slow down, tightening of profit margins and of collections with the industry experiencing bad debts and bankruptcies in an unprecedented magnitude. The tendency of gem and jewellery traders to follow a persistent manner of having price cutting sales strategies have posed a serious threat that the trade is conducted in a highly irresponsible manner, which causes the country to lose its international markets and as well the highly sought after rare, natural, luxury product falls into a vicious cycle of commoditization (Daily Mirror Business, 2019). Thus it is crucial for the industry to have a paradigm shift in the business and marketing strategies (Refai, 2019; Wickramasinghe, 2017).

Consumer's feelings, thoughts, experience and external factors are major factors that affect purchase intention because these factors are considered by consumers before making a purchase (Kotler & Amstrong, 2017). Consumers' behaviour, perceptions and attitudes are usually associated with purchase intention (Park & Kim, 2003). Purchase intention (PI) may be changed during the buying process due to external and internal motivational factors, which could be named as awareness, knowledge, interest, preference, persuasion and purchase (Gogoi, 2013). Bakshi (2012) concludes that there are various factors that influence the way people behave in a particular situation because consumers vary tremendously in age, income, education, tastes and other factors. Further this researcher suggests that the behaviour of consumer while engaging in a purchase decision is influenced by these factors. According to Wang, Li, Barnes and Ahn (2012) consumers' demographic factors such as gender, age, profession and education have a relationship with the purchase intention. As per the suggestions of some scholars (Panwar, Anand, Ali, & Singal, 2019; Zeb, Rashid, & Javeed, 2011), these factors process to connect individuals' perception to develop attitudes about social behaviors.

As suggested by Bakshi (2012), gender is one of the major factors that influence consumers' decision making behaviour. Gender refers to the social relationship/ roles and responsibilities of men and women and also the expectations held about the characteristics, likely behaviors and aptitudes of both men and women (masculinity and femininity) that are learned and changed over time. Consumers' gender is congruent with luxury consumption. The gender- image of the consumer and the gender-self are capable of enabling strong congruence in relevance to the product. Consumers prefer goods that match their sense of biological gender as men and women (Bakshi, 2012).Consumers apply gender cues to products as men and women. Blackwell and Mitchel (2003) and Ye and Robertson (2012) propose that the gender identity plays an important role in consumer purchase behaviour, varying from assistance in information.

Salem and Salem (2018) conclude in their empirical research that one builds one's self-identity by choosing products and brands those that could represent and express one's self-image. In explaining self-concept and self-identity, Leary and Tangney (2012) claim that characteristics, social relations and roles and also the social group membership, define the identity of the individual. Identity can be focused on the past, present and on future. What used to be true of one is explained by past whereas what is true of one now is explained by the present. The future explains what the person wishes to become or expects to become or try to become or one may become. Identities make meanings and focuses ones attention on some available immediate context. Furthermore, Leary and Tangney (2012) discuss that identities comprise one's self-concept, inconsistently delineate what comes to mind when one thinks of oneself, one's theory of one's personality and what one believes to be true of one-self. Self-identity or self-concept is considered as a major factor which influences individual behaviour that processes intention formation. Intentions are likely to be based on central or salient role identities which repeat behaviour due to self-increase with time (Oyserman, 2009).

Consumers apply identity-relevant actions to boost their diagnostic utility (Etkin, 2010). These actions bear certain identities they demonstrated by consumers' self-signals, towards an outcome utility (Etkin, 2010). A situational perspective proposes that identities provide a base for meaningful action from an identity-based motivation (IBM) perspective (Oyserman, 2009). Oyserman (2009) claims that personal and social identities play a major role in the IBM perspective. Urminisky, Bartels, Giuiliano, Newman, Puntoni and Rips (2014), divide the *identity* as; Synchronic identity refers to the salient identity of an individual at one point in time which is in relation to different aspects and Diachronic identity refers to a single identity that change in the content and consequences within time. Ye and Robertson (2012) propose that an individual's gender identity is a central part of that person's self-image and the congruency of self and gender strongly affects an individual's choices and product perceptions and this gender-self congruency has a strong impact on the product when it comes to luxury consumption. Gender related consumer behaviors- socially desirable roles for men and women are independently explained by gender-role attitudes. (Ramachandran & Sajjana, 2015; Salem & Salem, 2018; Wang & Griskevicius, 2014; Ye & Robertson, 2012).

It could be noted that extant marketing literature does not provide a model, which paves the way to understand and analyze the relationship, which results from the impact of gender on IBM on the relationship of identity-based consumer behaviour (IBCB) and purchase intention of the gem and jewellery (PIGJ) industry in Sri Lanka. Gem and jewellery industry being the prime luxury goods industry in Sri Lanka it is important for marketing practitioners in the Sri Lankan gem and jewellery trade to understand the basis on which consumers make decisions between available alternatives, as there are some fundamentals in the way, consumer gathers and processes information. Purchasing a luxury product is not only due to the characteristics of the product itself but also due to the distinctive behaviour and characteristics of the consumer. Successful marketing strategies depend upon the harmonization between the product attributes and consumer identities such as life style, social role, characteristics, attitude and value. Therefore it is important for Sri Lankan gem and jewellery industry practitioners to understand how consumer identities affect consumers' purchase intentions. Carder (2015) the managing director of a leading market research company claims that, the Sri Lankan consumers now seem to have willingness to purchase lifestyle products, and show a significance increase in such purchases (www.dailymirror.lk/business).

In exploring the luxury industry of gem and jewellery, the researchers Ekanayake and Abeysinghe (2010) explain that lack of an acceptable standard or codified knowledge to measure the colored gems prevents the achievement of premium value in the market. The albescence of recognition for local gems in the domestic market has made consumers tentative with regard to investing (Ekanayake & Abeysinghe, 2010). Therefore the marketing literature needs to bridge the existing knowledge gap related to the Sri Lankan gem and jewellery industry in order to gain customer loyalty, sales and to enhance the opportunities in the international markets. Thus the researchers who wish to study certain relationships may use this conceptual model to carry out empirical studies in future studies. Hence, this study contributes a conceptual model based on theories and on empirical studies of preceding marketing literature to the existing marketing literature. The proposed conceptual model will pave way for understanding and analyzing the impact of consumers' gender on consumers' IBM on the relationship between IBCB and purchasing intention of gem and jewellery.

The methodology of this paper is structured in three stages as; explanation of the process of carrying out the literature review; presentation of the results of the review; a discussion on the introduction of the conceptual model which has been developed and provision of a methodology for the model to be tested empirically. At length the conclusions are outlined.

2. Literature review

2.1. Stage 1: Explanation of the review process

This study follows a systematic literature review as per Transfield, Denyer and Smart (2003). Previously published conceptual and empirical researches on gender, IBM, IBCB and purchase intention on luxury were referred in the process of reviewing. As per Transfield et al. (2003) a systematic literature review provides the best and easy apprehensive illuminating policy and practice not only in management but in any discipline. Their argument is based on the fact that a systematic literature review facilitates future research endeavors to have evidence based decision making. According to Transfield et al. (2003) a systematic literature review should acquire the following qualities:

The review should be able to support the production of a sense of collective endeavor, indicating the importance and the state of being direct between the research studies to restrain frequent occurrence of unproductive effort. Thus it should enhance the coherence of the research to the inquiries and outflows that has been structured and proposed by prior research. Further the review should be able to demonstrate a progress towards the attempts that are used to construct and combine former practical evidence. Therefore, depending on the prior research of Transfield et al. (2003), this paper followed a systematic literature review, comprised of three phases.

Phase I - Process of the review is designed.

Phase II –Conduction of the review.

Phase III – Comprehensive review research results are reported.

2.1.1. Phase 1: Process of the review is designed

In this phase the review process is designed and the objectives of the research are outlined. The primary objective of the review is to develop the conceptual model and further four more objectives are designed, which are supposed to support the primary objective. The objectives of this study are:

To set the boundaries for the dimensions of the impact of gender on IBM that moderates the relationship between IBCB and PI.

To establish the theoretical underpinnings of the impacts of gender on IBM that moderates the relationship between IBCB and PIGJ.

To seek for the empirical evidence of the impacts of gender on IBM that moderates the relationship between IBCB and PIGJ. To apprehend the positive conditions proposed by literature as positive for PIGJ.

Finalizing the objectives lead to the development of the research experiment for the review. The research design involves identifying the sphere of activity and suitable requirements for the review. The literature review focus on the impacts of gender on consumers' IBM which moderates the relationship between IBCB and PIGJ. The review apprehends the requirements suggested in literature as those relevant to IBCB, which is moderated by IBM further impacted by consumers' gender. Exploring the conceptual and empirical domains is very necessary for this research.

The suitable requirements suggested in the research are:

Requirement 1: The research was carried out by searching articles in relation to the impact of gender in relation to purchase intention IBM and IBCB, purchase intention in gem and jewellery.

Requirement 2: Considering the option *Article* from the document type option prior peer reviewed journal articles were primarily opted. Secondly published different document types such as reports, trade publications, books, conference proceedings were also considered.

Requirement 3: The articles and documents published from 1990-2019 on internet databases such as aomonline (http://www.aomonline.org); Elsevier (http://elsevier.com/copyright);

science direct (www.sciencedirect.com) were selected for the review. Also academic journals, business information and other suitable articles were received by the databases such as JSTOR (https://wwwjstor.org); Sage (https://journals.sagepub.com); Springer link (https://link.springer.com); Taylor and Francis Online (https://tandfonline.com). Textbooks, newspaper articles, conference proceedings and other suitable literature from 1990-2019 were selected.

Requirement 4: The opted articles and other documents were published only in English.

Requirement 5: Acceptableness of the articles and documents were verified by selecting the articles /documents that contained the selected the keywords and phrases: gender, purchase intention, IBM, IBCB, PIGJ, across the documents.

Requirement 6: The final elements of relevance were verified by regarding the rest of the article with respect to the adjustment in line with the objectives of the review.

2.1.2. Phase 2-Conduction of the review

Transfield et al. (2003), suggested that conduction of the review process as the second phase of the review. This process involved receiving articles from aforementioned sources and this review processed in three stages.

Stage I: The selected key phrases, gender, purchase intention, IBM, IBCB, purchase intention of luxury, gems and jewellery were entered into the selected academic databases.

Stage II: As the second stage an analysis of the title and the abstract was conducted on these extracted articles. 60 articles which have been published from 1990 to 2019 were selected for further scanning.

Stage III: Scanning was carried out for conceptual and empirical studies through the selection highlighted under the procedure.

2.1.3. Phase 3-Comprehensive review research results are reported

The objectives of the review were outlined while considering the primary objective of the review. There are four objectives outlined in the phase 1-the designing stage of literature review. They are: to set the boundaries for the dimensions of the impact of gender on IBM of the consumer with IBCB and PI; to establish the theoretical underpinnings of the impacts of gender on IBM on IBCB and PIGJ; to seek for empirical evidence on the impacts of gender on IBM on IBCB and PIGJ; to apprehend the positive conditions suggested by literature as positive for PIGJ.

These four objectives are outlined to uphold the development of the primary objective of the study: to develop a conceptual model that brings about understanding and analyzing the results that occur from the impact of gender on IBM on IBCB and PIGJ. Thus the literature review is carried out to have a support with operationalization of the concepts (constructs).

The concepts are proposed by the study as follows: the independent variable is IBCB; the dependent variable is purchase intention. As the literature explains that the relationship between IBCB and purchase intention of gem and jewellery may vary due to the motivation, thus the moderating variable IBM is introduced. Furthermore the literature postulate that gender being a major factor that influences consumers' motivation to make a purchase decision, the categorical exogenous variable gender is also introduced as a moderating variable on consumers' IBM. Therefore, the results of the literature review are presented as results fewer than four broad headings in line with the objectives those are outlined in line with the review.

2.1.3.1 The dimensions of IBM, IBCB, gender and PIGJ

The first objective of the study, in line with the literature review: to set the boundaries for the dimensions of the impact of gender on IBM of the consumer with IBCB and PI. Oyserman (2014) and Reed, Foreand, Puntoni, and Warlop (2012) clarify IBM and IBM relationship on which consumers' IBM was tested. These were based on IBM theory, IBCB theory and on identity principles. The dimensions are so identified: actual self, social self, ideal self, ideal social self (Oyseman, 2009; Schiffman & Kanuk, 2000; Sirgy et al., 1997; Urminisky et al., 2014) self- image, ethnic identity, cultural identity, religious identity, personal traits, personal characteristics and personal role (Gao et al., 2008; Kulsiri, 2012; Oyserman, 2009; Reed et al., 2012; White et al., 2012).

Discussion of Gender identity and its role in impacting the purchase motivation of luxury products and brands has been brought to the limelight by a few researchers (Ramachandran & Sajjana, 2015; Wang & Griskevicius, 2014; Ye & Robertson, 2012). These researchers explain that consumers' gender, which has a relationship with the social roles, relationships and responsibilities of men and women - as femininity and masculinity or as males or females acts as a major factor that influence consumer's decision making.

IBCB and purchase intention of gem and jewellery relationship has been discussed by many researchers' across the globe (Amelia & Hudrasyah, 2016; Asha & Christoper, 2014 ; Agro et al., 2005; Balaji & Maheshwari, 2014; Chaisuriyathavikum & Punnakitikashem, 2016; Jalaham & Pangemanan, 2014; Jothi & Nagarajan, 2014; Kumar & Punithavathi, 2014; Kumar & Thiviya, 2014; Mendis, 2016; Pongeela, 2012; Sanguanpiyapana & Jasper, 2009; Tian & MaKenzie, 2001) have presented the dimensions as materialism, uniqueness and need for acceptance, hedonic and utilitarian values, social recognition, reference groups, expression of personal feelings, economic situations, human traditions, investment, beauty and satisfaction are used in this current study or understanding the IBCB and PIGJ.

2.1.3.2. Establishing the theoretical underpinnings of the impacts of gender on IBM on the relationship between IBCB and PIGJ

In accordance with Baron and Kenny (1986), Nima, Rosenberg, Archer, and Gracia (2013), the underpinning theories explain the social context of the study. These theories explain "how" and "why" the predictor IBCB and the criterion PIGJ are related. Further the theories explain "when" the predictor IBCB and the criterion are related due to the influence of the moderating variable. Therefore the theoretical notions provided the foundation for the architecture of the model. The relationship between independent variable IBCB, dependent variable PIGJ and the impacts of moderating variables IBM and the exogenous variable Gender were developed depending on the theories in line with literature.

Identity Principal Theory: Reed et al. (2012) propose that identity principle theory acknowledges that when a salient identity in a person's self-concept is increased there is a probability that the identity will have a succeeding influence an individual's attitude and behaviour. IBCB Theory: Consumers perform identity-relevant actions to self-signal certain identities that they hold and boost their diagnostic utility (Etkin, 2010). IBM Theory: IBM theory (Oyserman, 2014) discusses that consumers think and act. In a relevant situation the identity that comes to their mind influence their judgment, choice and behaviour .Theory of Planned Behaviour: Conner and Armitage (1998) suggest that the theory of planned behaviour depicts, behaviour as function where the consumer perceives the action as 'easy' or 'difficult' and people have a tendency to engage in intended behaviors. Behavioral Theory: Pham (in press) argues that forces from the outside, such as social influence, social roles, group membership, cultural norms, religious beliefs, shape the decision making of consumers. Gender Schema Theory: In explaining gender schema theory Ye and Robertson (2012) claim that an individual's psychological gender identity is not necessarily to be in consistent with the biological sex or masculinity and femininity. Feminine and masculine psychological traits vary with individuals. Luxury product choice could get affected by both psychological gender and biological gender including masculinity and femininity.

2.1.3.3. Empirical evidence for the impact of gender on IBM on IBCB and PIGJ

Explaining the empirical evidence available on the impacts of gender on IBM on IBCB and purchase intention is the third objective. The findings of Ramachandran and Sajjana (2015), Wang and Griskevicius (2014), Ye and Robertson (2012) note that the self-product image congruency involves with masculine and feminine gender identities. The findings of Habib, Aziz and Ramachandran (2017), reported that purchase intention is moderately influenced by social factors and personal identity of the consumer. The findings of Urminisky et al. (2014) reveal that consumer's synchronic identity and diachronic identity influence the consumer's purchase intention.

2.1.3.4. Apprehension of suggested positive conditions in literature for PIGJ

To apprehend the positive conditions suggested in literature for PIGJ, was the final objective. These factors are categorized as factors those that motivate for the development of PIGJ. Materialism, uniqueness and need for acceptance (Amelia & Hudrasyah, 2016; Tian & MaKenzie, 2001) satisfaction, beauty (Jalaham & Pangemanan, 2014; Joythi & Nagarajan, 2014; Pongeela, 2012), investment (Asha & Christopher, 2014; Balaji & Maheshwari, 2014; Kumar & Thiviya,2014), economic situations, human traditions (Mendis,2016; Kumar & Punithavathi,2014), expression of personal feelings, reference groups, social recognition, hedonic and utilitarian values (Agro et al, 2005; Chaisuriyathavikum & Punnakitikashem, 2016; Sanguanpiyapana & Jasper, 2009).

3. Discussion

Although there are many theoretical explanations, the empirical evidence provided by previous researchers claim that the PIGJ is a kind of decision making resolved by the consumer and it could be expressed by gender identity, cultural, social, personal and psychological factors that impact this decision making or the purchase intention of the consumer, those that play a major part in gem and jewellery consumption. During the buying process these social and psychological aspects are in relation to the consumers' behaviour and attitudes which are affected by internal (private) or external (social) motivations. The internal or the private aspect refers to one's self- identity value.

The centrality of the consumer behaviour theory has widely and repeatedly emphasized in the channel of consumer behaviour literature that in a self-image or product- image congruity model, the purchasing behaviour is affected by self-concept. IBCB is based on psychological characteristic or conceptions of synchronic identity; consumers' actual self and the diachronic identity; the ideal self or whom the consumer wants to be. Considering in line with previous literature, it could be proposed that, previous researchers have confirmed that there is a significant impact of self-congruity on luxury product purchase (Goa et al., 2008). Also previous researchers confirm that consumers purchase luxury products in consistency with their self- image and according to the previous researchers, gender identity is the most central part of self-image, and this gender-self congruency has strong motivational effects in relevance to individuals' choices and product perceptions (Goa et al. 2008; Ye & Robertson, 2012).

In pursing previous marketing literature in consumer behaviour theory, it is accepted that the relationship between one's self- image and one's image of a product or service is moderated by the self- identity congruence (Oyserman, 2009; Salem & Salem, 2018). Therefore according to the previously extant literature, IBM is based on the social and personal identities. Social identity is built on gender, race -ethnicity and cultural differences. Personal identity is built on personal traits, characteristics and roles (Oyserman, 2009; Salem & Salem, 2018).The social identity and personal identity (Salem & Salem, 2018) impact the relationship between the IBCB and PIGJ.

The collected data of the review paves a way with solid evidence for the architecture of the proposed conceptual model. This scientific evidence obtained from prior empirical research solidifies the impacts of gender, moderates IBM. And IBM further moderates the result that can occur from the relationship between consumers' IBCB and purchase intention of gem and jewellery, which is Sri Lanka's top luxury goods industry. Based on these aforementioned impacts, relationships and constructs which have been supported by the literature review a conceptual model is constructed that could be useful to future researchers to understand and analyze the impacts and relationships of consumers' gender on consumers' IBM on consumers' IBCB and PIGJ.

Identity-based behaviour that has a relationship with the purchase intention can be operationalized along synchronic identity and diachronic identity: actual self, social self, ideal self, ideal social self (Schffman & Kanuk, 2000; Urminisky et al., 2014). The purchase intention of gem and jewellery can be operationalized as, satisfaction, beauty (Jalaham & Pangemanan, 2014; Joythi & Nagarajan, 2014; Pongeela, 2012), investment (Ashan & Christopher, 2014; Balaji & Maheswari, 2014; Kumar & Thiviya, 2014), economic situations (Mendis, 2016), human traditions (Kumar & Punithavathi, 2014; Mendis, 2016), expression of personal feelings, reference groups, social recognition, hedonic and utilitarian values (Agro et al., 2005; Chaisuriyathavikum & Punnakitikashem, 2016; Sanguanpiyapana & Jasper, 2009), uniqueness and need for acceptance and materialism (Amelia & Hudrasyah, 2016; Tian & MaKenzie, 2001). The variables that have a moderating impact on the results are suggested in extant literature are as follows: personal image, self- image, ethnic identity, cultural identity, religious heritage, personal traits, personal characteristics and personal role. The variables which moderate the moderation impact on the relationship are identified as the gender; male and female. Thus the overall conceptual model is compiled as depicted in Figure 1 along with a proposed methodology.

4. A technique for empirical testing

The afore depicted conceptual model, which is supported by the foundation laid in line with literature could be used in future empirical research that intend to study the impact of gender on IBM on IBCB and PIGJ. A researcher, who wishes to apply this model in future research, has the option of adopting a quantitative methodology (Sekaran & Bougie, 2011). A questionnaire could be constructed along with the different dimensions of the variables so that an interval scale could be applied thus the responses could be measured. To analyze data - the association between IBCB and PIGJ, Bivariate Regression Analysis (Malhotra & Dash, 2012) and to analyze moderating impacts between IBM on IBCB and PIGJ and also to analyze the impact of gender on IBM, Hierarchical Multiple Regression could be applied (Malhotra & Dash, 2012).

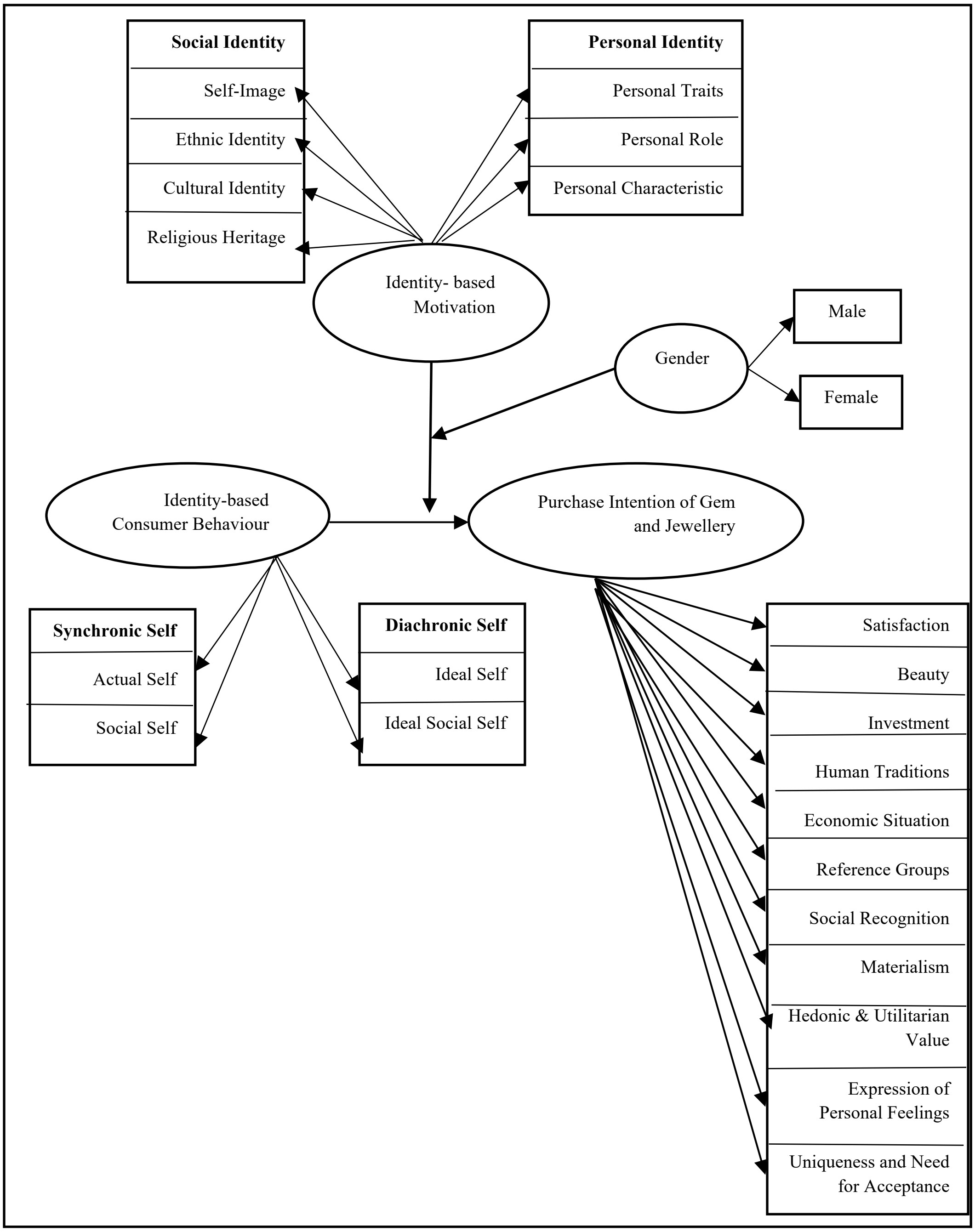

Figure 1 Conceptual framework of the study
Source: Developed by researcher (2020).

5. Conclusion

As per the empirical evidence and models depicted by previous researchers (Baron & Kenny 1986; Malhotra & Dash, 2012; Nima et al., 2013; Salem & Salem, 2018) it could be proposed that the relationship between the IBCB and PIGJ is moderately impacted by the moderating variable IBM. This finding is similar with some prior scholars' findings (Malhotra & Dash, 2012; Salem & Salem, 2018), MV (Oyserman, 2009). It further moderately impacted by the exogenous variable (Baron & Kenny, 1986; Malhotra & Dash, 2012; Nima et al., 2013), gender (Bakshi, 2012; Ye & Robertson, 2012) and MV of the consumer. Social identity and personal identity are moderately impacted by gender can be developed along, self-image, ethnic identity, cultural identity, religious identity, personal traits, personal characteristics and personal roles. Therefore, it is important to the seller to come to know these relationships to build up marketing and sales strategies towards the growth of the sales volume and profit. Since the existing literature does not propose a conceptual model to analyze the impact of gender on IBM on IBCB and PIGJ relationship, this study contributes to the existing marketing literature by introducing a conceptual model which could be applied by researchers and practitioners to understand and analyze the relationships of impact of gender on IBM, which impacts the IBCB and PIGJ.

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Impact of social media driven mind wandering on cognitive psychology of state university students in Sri Lanka

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Abstract

Individuals started to treat social media as a vital part of their outstanding personality. After introducing the smart phone, social media usage is accelerated. As a negative result of that; unintentionally, people are disconnected even if they are physically available to each other. The social media is continually affecting to the cognitive psychology of the human being. The general objective of this study was to find the impact of social media driven mind wandering on cognitive psychology of state university students in Sri Lanka. An online structured questionnaire was used by selecting 250 undergraduates from state universities in Sri Lanka. Correlation analysis and regression analysis were applied to analyze data by employing SPSS 21.0. The results of the correlation analysis showed significant negative relationship between the independent and dependent variables while regression analysis results confirmed it. The research findings convey that, if students spend more time on social media, it will be a reason for high level of social media driven mind wandering and if the students fail to control it, their working memory functions will be damaged and, high level of social media driven mind wandering will curse damages to the memory retention, reading comprehension and decision making abilities.

Keywords: *Cognitive psychology, mind wandering, social media.*

1. Introduction

Social media is a technological platform that mainly based on the computers and it facilitates the sharing of ideas, thoughts, and information through the formation of virtual links and communities (Jain, 2018). By design, social media is online based and gives users rapid electronic communication of content. Content may include personal information, documents, videos, and images. Social media comes in many forms including blogs, forums, business networks, photo-sharing platforms, social gaming, microblogs, chat apps, and social networks. Users interact with social media through computers, tablets, or smartphones via web-based software or applications. While social media is pervasive in America and Europe, Asian countries like India, China and Indonesia lead the list of social media usage. The power of social networking is such that the number of social sites users around the world is expected to reach 3.02 billion monthly active social media users by 2021, it is around a third of the population of the world, and an estimated 750 million of these users are expected to be from China itself by 2022 and approximately a third of a billion from India (Statista Research Department, 2017).

At present, most social media users access social media sites via their smartphones or tablets. While this makes it very convenient to keep updated, it also means that social media is widely accessible through the day. Social media platforms are intended to trap users' attention, keep them online, and have they frequently checking their screen for updates. It is how the big social media companies like Facebook or YouTube make money (Alsaif, 2016). But, much like a gambling compulsion or an addiction to nicotine, alcohol, or drugs, social media can create psychological inconsistencies (Kuppuswamy & Narayan, 2010). When people receive a like, a share, or a favorable reaction to a post, it can trigger the release of dopamine in the brain, the same "reward" chemical that follows winning on a slot machine, taking a bite of chocolate, or lighting up a cigarette. The more people are rewarded, the more time they want to spend on social media, even if it becomes unfavorable to other aspects of their lives (Kuppuswamy & Narayan, 2010). Regarding social media, people are already experiencing impairment similar to substance dependencies. With every like, they get a shot of that feel good chemical, dopamine. Therefore, People check likes and they post as many as they can on social sites to feel good. People are anxious if they do not have access. That does not sound like every drug we have ever heard of. However, when that grows, when their social media use goes un-confronted over time, that is when we see the rising levels of social media driven mind wandering (MW) (Graham, 2014). This round-the-clock, hyper connectivity can trigger impulse control problems, the constant alerts and notifications affecting peoples' concentration and focus, disturbing their sleep, and making themselves to their phone or tablet (Parnell, 2017).

The main objective of this study was to find the impact of social media driven MW on cognitive psychology of state university students in Sri Lanka. The quality of the students' cognitive psychology is represented by four factors, namely working memory (WM), memory retention (MR), reading comprehension (RC) and decision making (DM). The finding revealed that high level of social media driven MW of the students will cause damages to their WM, MR, RC and DM abilities. Thus, it can be concluded that uncontrolled high level of social media driven MW has a negative impact on cognitive psychology. The results of the study will be beneficial to share the knowledge about what is stressing people out every day in social media, what it is doing to cognitive psychology, and how people can craft a better experience for their selves online in social media to avoid the occurrence of social media driven MW.

2. Literature

The term social media address a wide range of internet-based and mobile services that allow users to participate in online exchanges, contribute user-created content or join online communities (Dewing & Canada, 2012). There are several internet services that commonly associated with social media. They are namely as; blogs, wikis, social bookmarking, social network sites, status up-date services, virtual world content, and media sharing sites. Those categories usually overlap to some degree. Social media has gained wider area of the society at large and is also becoming the most important and effective method of communication among people especially among the high school students and undergraduates by filling the gap in existing communication systems. Within the social media sites; Facebook, Twitter and Instagram are now gaining more power over other sites or applications. However, most impotently social media has the potentials of influencing DM in a very short time regardless the distance (Al-Rahmi & Othman, 2013). According to Australian Communications Consumer Action Network ([ACCAN], 2017) Social media websites are not necessarily about meeting new people online. Instead, they are primarily about connecting with friends, family and associates they already have. These websites allow users to share photos, videos and information, organized events, chat, and play online games.

Just like other technology, for example Smartphone, social media is a very effective tool for connecting with people (Jain, 2018). Friends will be able to see their friends profile pages and the information that they share. They will also be able to leave comments or share information with friends' profile page. ACCAN, 2017 reported that the whole point of joining social media is to be in touch with friends and family. Friends in the framework of social media and especially in Facebook, has a specific meaning. For example, a user to interact online with a friend, family member or colleague either one of them must first send a friend request to the other and that request should be accepted. Once the friend request is accepted, the technology recognizes both parties as friends and they are permitted to interact with each other online, so they can view the other person's profile page, see their pictures, and send them messages (Graham, 2014).

MW is an ordinary, everyday occurrence in which attention becomes separated from the current external situation and focused on internal chain of thoughts or on the other hand as a result of MW attention is drowning away by some other task unrelated internal or external factor (Schooler, et al., 2014). Peoples' minds sometimes wander from ongoing activities. Although these experiences can be pleasant and useful, they are often unplanned and swift mistakes (McVay & Kane, 2012). On the other hand, sometimes people must focus attention on what they are doing, yet, despite their efforts to concentrate, their thoughts slip away. Such accidental task-unrelated thoughts (TUTs) may lead to costly performance errors and even psychological sorrow (Schooler, Baird, Mrazek, Franklin, Phillip, 2013; Schupak & Rosenthal, 2009). These uncontrolled MW can provide theorists of executive functioning with a unique window into aspects of the mind's cognitive-control mechanisms, including how, when, and for whom they tend to fail (McVay & Kane, 2012). Our wading into the stream of thought was motivated by individual differences research on WM capacity. Psychologists are interested in WM capacity because it is a strong, domain-general predictor of important intellectual abilities, such as learning, reasoning, and comprehending (Kane, Conway, Miura, & Colflesh, 2007). Some people are better readers than others, and this variation in comprehension ability is predicted by measures of WM capacity. Reading is fundamental to education and job training and is a part of most people's daily life. Yet individual differences in RC are vast. Comprehension of written material is thus an important ability to explore for cognitive psychologists, in general, and for individual differences researchers, specifically (McVay & Kane, 2012). Reports suggest that people spend more than half of their waking time MW (Killingsworth & Gilbert, 2010). While it is known that MW also affects task performance, there are very few studies that examine MW experimentally, and models of this cognitive process are even scarcer. In fact, most studies consider these distraction processes as some form of mental noise (Marieke, Niels, Jerome, & Mikael, 2015). However, it is likely that MW is not an isolated process but is a collection of different processes.

Social media driven MW is however the experience of thoughts not remaining on a single topic for a long period of time as a result of social media stress, particularly when people are engaged with an attention demanding task (Graham, 2014). When it comes to MW as a result of an addiction to the social media, there are mainly four (4) facts that lead a person toward the task unrelated thoughts (Parnell, 2017). They are, highlight reel, social currency, fear of missing out (FOMO) and online harassment. People are very much interested about the notifications they get through social sites, may be a person simply cannot force, because the notifications are going off the handle and he or she needs to check them and that need, eventually become addiction (Parnell, 2017). Regarding social media people are already experiencing some dependencies. With every like they get, they have that feel good chemical inside their mind (Beck, 2011). They are getting more of that social currency. So what they do to feel good? They check likes, just one more time. They post, just one more time (Graham, 2014). People are anxious if they do not have the access to internet. It does not sound like any drug we can ever hare of. So when that grows when social media usage goes uncomforted over time; that is where we can see the rising anxiety and depression (Szpunar, Moulton, & Schacter 2013). The Canadian association of mental health in 2017, found that it is youngest grades 7-12 students who spend over 2 hours per day on social media reported higher depression, anxiety and suicidal thoughts. When it comes to Sri Lanka, it is estimated that on average they spend about 34 minutes a day on social media (Weerasundera, 2014). Likewise, so many reasons are there to drag peoples' attention to other task unrelated thoughts. Among those many reasons, social media has now become number one (Jain, 2018).

MW often leads to performance and accuracy errors during activities that are demanding and require concentration (Malone, 2009). Students are often asked to concentrate on demanding tasks in their studies, and by the nature of this principle, off-task thinking would inherently be prohibitive to their success (Hollis & Christopher, 2016). Further, the distracting nature of social media and technology may greatly increase the likelihood of MW when students are engaged in online learning (Hollis & Christopher, 2016). MW is a shift from an ongoing activity to task unrelated thoughts. These drifting thoughts are quite common; normally MW 30 percent – 50 percent of the time on our daily lives (Levinson, Smallwood, & Davidson, 2012; McVay & Kane, 2012). And this common MW experience can result in deficits. When tasks require concentration or are cognitively demanding, wandering to task unrelated thoughts (TUTs) often leads to performance and accuracy errors on the primary activity (McVay & Kane, 2012; Unsworth & McMillan, 2013).

The term "cognition" refers to all processes by which the sensory input is transformed, reduced, elaborated, stored, recovered, and used. It is concerned with these processes even when they operate in the absence of relevant stimulation, as in images and hallucinations (Zhu, Zhang, & Jiang, 2014). Cognition is involved in everything a human being might possibly do; that every psychological phenomenon is a cognitive phenomenon. But although cognitive psychology is concerned with all human activity rather than some fraction of it, the concern is from a particular point of view (Neisser, 1967). Cognitive psychology engages with the study of interior mental processes which all of the stuffs that running on inside the human brain, including perception, judgment, memory, attention, language, DM, and learning (Cherry, 2018). The years 1956 and 1957 were important points in the development of cognitive psychology as several important papers/theories emerged, including: Chomsky's theory of language, Miller's concept of seven plus or minus two chunks in short term memory, Newell and Simon's general problem solving model, Bruner et al.'s ideas on concept formation and Artificial intelligence (Brown, 2007).

When it comes to cognitive psychology of a student, it can be measured by using four dimensions – WM, MR, RC and DM (Braisby & Gellatly, 2005). MR, reading and DM are the most essential cognitive psychologies that required for better education settings (Braisby & Gellatly, 2005). A good student whose academic performances are high, associated with a high level of memory, retention, RC and a good DM abilities. MW often leads to performance and accuracy errors during activities that are demanding and require concentration (Malone, 2009). Students are often asked to concentrate on demanding tasks in their studies, and by the nature of this principle, off-task thinking would inherently be prohibitive to their success (Hollis & Christopher, 2016).

3. Methodology

3.1. Conceptual framework

The conceptual framework (Figure 1) of the study was formulated based on well-established literature specially the studies done by Braisby and Gellatly (2005), Parnell (2017), Ellis (2015), Goel and Hultén (2018) and Graham (2014) examined the impact of the social media driven MW on WM, MR, RC and DM which determine the quality of the cognitive psychology.

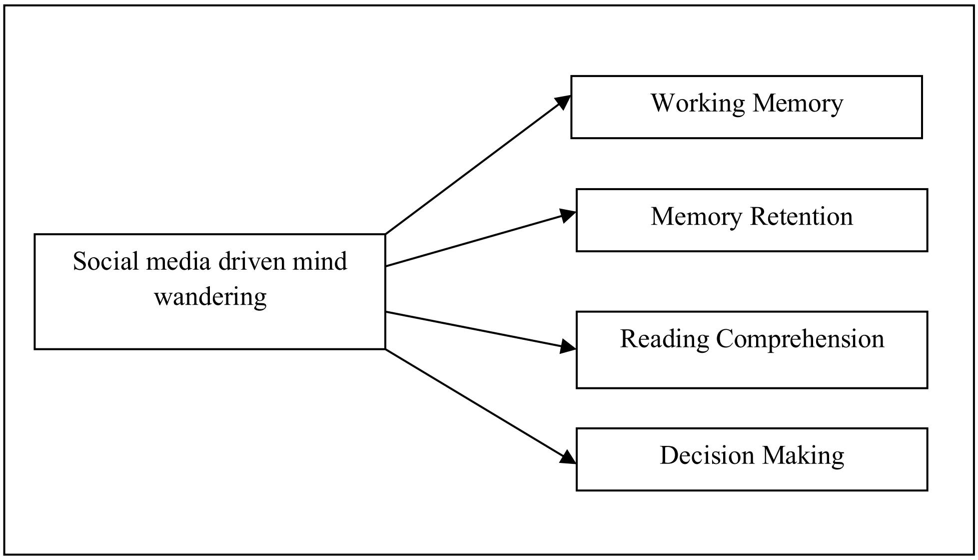

Figure 1 Conceptual framework of the study

Source: Developed by researchers.

To measure the WM and the MR, the researchers used duration, capacity, and encoding and order effect as dimensions. Similarly, phonemic awareness, understandability, fluency and vocabulary considered as the dimensions of RC (Ellis, 2015) and motivation, thinking and analyzing, adapting and changing and bias and preference were taken as the dimensions of the DM factor (Goel & Hultén, 2018).

3.2. Population and sample

The population of this study was all the students who were studying in state universities of Sri Lanka. By 2019, there were 15 universities governed under the University Grant Commission (UGC). They were University of Colombo, University of Peradeniya, University of Sri Jayewardenepura, University of Kelaniya, University of Moratuwa, University of Jaffna, University of Ruhuna, The Open University of Sri Lanka, Eastern University-Sri Lanka, South Eastern University of Sri Lanka, Rajarata University of Sri Lanka, Sabaragamuwa University of Sri Lanka, Wayamba University of Sri Lanka, Uva Wellassa University and University of the Visual & Performing Arts. According to the details obtained from Sri Lanka University statistics reprt published in 2019 by the UGC of Sri Lanka, 112,999 undergraduates were studying in the above-mentioned state universities by the end of 2018. The sample size was determined as 250 students from the aforementioned 15 Universities. The sample size is calculated by using the following formula (Formula 1).

$$Samplesize = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1+(\frac{z^2 \times p(1-p)}{e^2 N})}$$ Formula 1 Sample Size calculation

Where,
N = population size,
e = Margin of error (percentage in decimal form),
z = z-score

The margin of error was considered as 6.2 percent and the z-score value was taken relent to 95 percent of confidence level. That is 1.96. To select the sample, the random sampling method was employed. A self-administrated online questionnaire was distributed using electronic communication channels to collect data from the selected sample. The questionnaire was included the questions items to obtain information about the respondents' demographic factors and measure their level of MW and cognitive psychological state. The preliminary questions were directed to obtain demographic details and Likert scale questions with five levels, ranging from strongly disagree (1) to strongly agree (5) were used to measure the students' MW level and cognitive psychological state. 127 from the total 250 respondents were female and it is 51% from the total. Remain 123 were male and that is 49% from the total respondents.

3.3. Validity and reliability

A reliability test is used to examine the internal consistency of the constructs that were used to measure key independent and dependent variables of the statistics while validity states that tests having the same or similar constructs should be highly correlated. Table 1 shows the summary of reliability and validity statistics for the independent variable (Social media driven MW) and the dependent variables (WM, MR, RC, and DM).

Table 1
Test of validity and reliability

	Convergence Validity			Reliability
Variables	KMO Statistics	Bartlett's test stat. (P value)	AVE to be > 0.5	Alpha
Social Media Driven MW	0.826	588.087 (<0.001)	0.60888	0.861
WM	0.783	352.813 (<0.001)	0.64915	0.819
MR	0.774	236.200 (<0.001)	0.58648	0.761
RC	0.793	311.108 (<0.001)	0.63447	0.807
DM	0.737	183.883 (<0.001)	0.54251	0.716

Source: Survey Data.

According to Table 1, the Cronbach's alpha values of all variables were ranged from 0.716 to 0.861, which fulfills the relevant accepted level of reliability. The KMO statics represented that this sample is adequate. In fact, all the cases of this value are higher than 0.5 and it concluded that the sample adequacy of each variable. Bartlett's test value examined P value of the survey data to measure the validity of sample. Same as in KMO here in all the cases it ensures the validity of sample. Eventually to measure the validity of questionnaire AVE has been used and this value should be more than 0.50 and it also ensure the validity.

4. Result and discussion

Based on the descriptive analysis results, it appears that the respondents are experiencing a relatively high social media driven MW (M = 3.16, SD = 0.63). But, when considering the skewness, it is -0.006, which means it's negatively skewed. The WM of the respondents is relatively low with a mean of 2.96 and a standard deviation of 0.82. It is positively skewed (0.590). Respondent's MR is also relatively low (M = 2.80, SD = 0.84). When considering the skewness, it is 0.60. That means it is positively skewed. Respondents' RC is generally low (M = 2.93, SD = 0.83) and it is also positively skewed (0.36). Respondent's DM is also relatively low with a mean of 2.82 and a standard deviation of 0.68 and it is positively skewed (0.58). The mean values of the variables are range from 2.79 to 3.16 and the standard deviation values are range from 0.63 to 0.84. The highest mean value is 3.16 and the lowest men value is 2.80.

Table 2
Results of descriptive statistics

	Mean	Std. Deviation	Skewness (Std. Error)
Social media driven MW	3.155	0.630	-0.006 (0.154)
WM	2.960	0.817	0.590 (0.154)
MR	2.797	0.839	0.596 (0.154)
RC	2.928	0.830	0.360 (0.154)
DM	2.821	0.681	0.579 (0.154)

Source: Survey Data.

Table 3

Results of correlation matrix analysis

		MW	WM	MR	RC	DM
MW	Pearson correlation	1.000				
	Sig. (1-tailed)					
WM	Pearson correlation	-0.680**	1.000			
	Sig. (1-tailed)	0.000				
MR	Pearson correlation	-0.621**	0.647**	1.000		
	Sig. (1-tailed)	0.000	0.000			
RC	Pearson correlation	-0.660**	0.738**	0.650**	1.000	
	Sig. (1-tailed)	0.000	0.000	0.000		
DM	Pearson correlation	-0.650**	0.682**	0.612**	0.673**	1.000
	Sig. (1-tailed)	0.000	0.000	0.000	0.000	

*Note: N = 250, **. Correlation is significant at the 0.01 level (1-tailed).*
Source: Survey Data.

According to Table 3, the Pearson correlation value for social media driven MW and WM is -0.680 and it implies that there is a negative relationship between the above variables. Moreover, the significant value is 0.000 ($P<0.05$) hence both variables are significant at 0.05 level. Therefore, it can be statistically said that there is a significant and negative relationship between Social media driven MW and the WM of the state university students in Sri Lanka. The Pearson correlation value for social media driven MW and MR is -0.621 and it is also a negative relationship between the above variables. According to that table, the significant value is 0.000 ($P<0.05$) hence both variables are significant at 0.05 level. Therefore, it can be statistically said that there is a significant and negative relationship between social media driven MW and MR of the state University students in Sri Lanka. Table 3 shows that the Pearson correlation value for social media driven MW and RC is -0.660 and it was the negative relationship between the above variables. Its significant value is 0.000 ($P<0.05$) hence both variables are significant at 0.05 level. Therefore, it can be statistically elaborated that there is a significant and negative relationship between social media driven MW and RC of the state university students in Sri Lanka.

Regression analysis (see Table 4) is used to explain the contribution of the independent variable in the manipulation of the dependent variables as well as regression analysis is used to indicate the overall fit of the model. The researchers applied simple regression analysis to test the hypothesis and R2 to measure the overall fit of the model and the following tables show the results for each of the four variables.

Table 4
Result of regression analysis

Path	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
MW→WM	0.680	0.463	0.461	0.600	1.855
MW→MR	0.621	0.386	0.384	0.659	1.783
MW→RC	0.660	0.436	0.434	0.625	2.003
MW→DM	0.650	0.422	0.420	0.519	2.146

Source: Survey Data.

In table 4, the R2 value indicates how much of the total variation in the dependent variable can be explained by the independent variable. According to the obtained results, the R2 values for the WM, MR, RC and DM are 0.46, 0.39, 0.44, and 0.42 respectively and they imply that the 46 percent of the WM of the respondents is affected by social media driven MW and the rest 54 percent of students WM is decided by other factors which are explicit to the study. Similarly, 39 percent of the MR, 44 percent of the reading comprehension, and 42 percent of the DM of the respondents are affected by social media driven MW.

5. Conclusion and recommendation

The general objective of this study was to find the impact of social media driven MW on cognitive psychology of state university students in Sri Lanka. By considering the research findings; the researchers can convey that, if students spend more time on social media, it will be a reason for a high level of social media driven MW and if the students fail to control it, their WM functions will be damaged and high level of social media driven MW will also curse damages to the MR, RC and DM abilities of the undergraduates. While highlight reel, social currency, FOMO, online harassments and addiction were identified as the main courses of social media driven MW, the ultimate conclusion was that uncontrolled high level social media driven MW harms the cognitive psychology of state university students in Sri Lanka.

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Researching the attractiveness of employer branding: A review

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Abstract

Unprecedentedly, owing to globalization and technological evolution, a firm's ability to attract and retain talent is of greater concern in reaping competitive advantage. Under this view, firms are in the quest for robust techniques to attract and retain talent. Intriguingly, the concept of "Employer branding" has gained significant popularity among managers and researchers as a strategic tool to acquire and retain talent. The resource-based view of the firm signifies that employer branding is predicated on the understanding that human resources carry dramatic worth to the firm, and the management of human talent can prompt a reinforced competitive advantage. Notwithstanding, employer branding research has formed into a divided field with heterogeneous understandings of the employer branding idea furthermore, its extension, which has hindered further theoretical and empirical progression. To reinforce the establishment for future work, this article aims to review the extant literature to add insights from the human resource management perspective and to derive future research avenues. Bibliomatirc and citation analysis was performed to identify the most influential research articles in the domain of employer branding and to find out the notable research topics, themes, and clusters that have been studied to date. Based on the analysis, it is found that there are nine compelling clusters in the domain of employer branding that portrays the employer branding effectiveness viz, innovation, human resource development, corporate social responsibility, employee value proposition, social media, brand equity, strategic brand management, talent management and Psychological contract. Eventually, the research agenda on employer branding is provided.

Keywords: *Competitive advantage, employer branding, globalization, human resources.*

1. Introduction

Today, owing to the limitless, innovation-driven, swiftly transforming business climate, one of the major corporate troubles is to satisfy the expanding need for executive talent. The survival of firms relies on the nature of their labour force who can confront the above challenges. The test with the corporate lies in identification and fascination of talent and such labour force is limited in the present competitive climate (Chhabra & Sharma, 2014). Consequently, it is pivotal for firms to develop sufficient and pertinent strategies to captivate the best candidate pool and to nurture and hold the present employees. As indicated by Kotler (1994) the tasks of effectively recruiting, training and motivating capable individuals to serve the client is characterized as internal marketing. One segment of internal marketing that is as yet immature as 'employer branding' and explicitly employer attractiveness' (Berthon, Ewing, & Hah, 2005). Employer branding focused on a long-term plan to oversee mindfulness and view of employees, potential employees and related interested parties concerning a specific firm (Sokro, 2012). The employer brand assembles an image affirming the firm as a good residence to work. Today, a compelling employer brand is fundamental for competitive advantage. Additionally, employer branding has become a new strategy for acquiring an edge in the competitive world. It alludes to the way toward recognizing and making an organization brand message, applying customary promoting standards to accomplishing the status of the employer of choice (Sutherland, Torricelli, & Karg, 2002). Barrow and Mosley (2011) delineate employer branding is utilized not exclusively to transmit the message of the character of an organization as an employer of choice; however, it likewise has been utilized to adapt the tools and procedures generally used to inspire and engage employees. Essentially, for improving the brand image of these firms, employer branding not exclusively would upgrade and solidify corporate goodwill for fairness, inclusion and opportunity for all, yet in addition empower more motivations and productivities in work (Dawn & Biswas, 2010; Biswas & Suar, 2016). Employer branding intently depends on marketing concepts for featuring the positioning of an organization as an ideal employer. The customer here is the existing or potential employee, further attracting new customers while holding the current ones. Just like a consumer brand, the employer brand features the emotional and rational advantages that the business gives to the workers.

The popularity of employer branding among practitioners and the lack of academic research on the topic raises interesting questions for management scholars (Backhaus & Tikoo, 2004; Berthon et al., 2005). Further, employer branding has got a lot of attention in practitioner venues, nonetheless not so much in academic settings; the theoretical foundation for it has not been thoroughly explored. Even though the employer branding practice acquired critical distinction, the academic literature about it is still scant (Backhaus & Tikoo, 2004). Additionally, it has been 20 years since the employer brand concept was introduced, and we still have much to learn about the purpose and practices of employer branding (Backhaus, 2016). Edwards (2010) discovered a gap in research in human resource (HR) and organizational behaviour fields, and the current literature is somewhat descriptive and focused on experts. Most of the branding research focuses on consumers, and little research has investigated the job it plays in attracting workers (Wilden, Gudergan, & Lings, 2010). In the course of recent many years, academic interest in employer branding has firmly expanded. Nonetheless, employer branding research has formed into a divided field with heterogeneous understandings of the employer branding idea furthermore, its scope, which has hindered further theoretical and empirical progression (Theurer, Tumasjan, & Welpe, 2018). Despite the employer branding is generally utilized by organizations across Sri Lanka, it has been under-explored and not very much recorded in scholarly pursuits. In contrast to the organizations across the developed nations, the organizations working in Sri Lanka will, in general, attract and retain the most versatile individuals for a long time. It is of specific significance in Sri Lanka because of the states of its post-war economy, an absence of graduates in various areas, and the migration of exceptionally talented labourers as there are generally accessible open positions abroad, particularly in the Middle East on account of high wages (Aldousari, Robertson, & Yajid, 2017).

It has been a long time since the employer branding thought was introduced, yet answers concerning the purpose and practices of employer branding remains obscure. Thus, the present study primarily focuses on the review of the previous research literature published in reputed journals. First, researchers define the concept of employer branding by providing a theoretical foundation. Second, provide a synopsis of the most influential papers through citation analysis. Third, discover the research clusters that have been studied to date through bibliometric analysis. Finally, present a research agenda for researching and establishing employer branding as an effective practice for human resource management.

2. Research methodology

This study specifically employs evidence-informed management reviews by (Tranfield, Denyer, & Smart, 2003), how to conduct a literature review systematically by using an archival method with three-step processes. Stage-1: planning the review; the underlying phases of systematic reviews might be an iterative process of definition, explanation, and improvement. Inside management, it will be important to lead scoping studies to evaluate the significance and size of the literature and to restrict the subject area or theme. Stage-2: conducting the review; Systematic review has been contended to give the most effective and first-class technique for distinguishing and assessing broad literature (Mulrow, 1994). A systematic search starts with the distinguishing proof of keywords and search terms, which are developed from the scoping study, the literature and conversations inside the review team. The commentator should then settle on the pursuit strings that are generally proper for the examination. Stage-3: reporting and dissemination; A good systematic review should make it simpler for the professional to comprehend the exploration by orchestrating broad primary research papers from which it was inferred.

3. Theoretical underpinning

American Marketing Association defines a brand as a name, term, logo, symbol, or design, or a blend thereof aimed to identify the goods and services of one seller or group of sellers and to separate them from competitors (Schneider, 2003). Brands are among a company's most important resources and therefore, brand management is a vital concept in many organizations. The term branding was initially utilized to separate between physical products, but over the years it has been harnessed to distinguish between people, places and organizations (Backhaus & Tikoo, 2004). The idea of the employer brand arose in the 1990s. Indeed, being conscious of it or not, all firms having employees simultaneously also have the employer brand. Nevertheless, the idea of the 'employer brand' was instituted in 1996. Over the long haul, the employer brand brings extra advantages, as it likewise upgrades the product brand (Backhaus, 2016). The essential driver behind the rise of this concept is the need to attract and hold the best and the most skilled human resources. Employer brand indicates the difference between the qualities of firms as employers and those of their competitors. Employer branding portrays identical elements of the firm's employment offerings or environment. Ambler and Barrow (1996) delineate employer branding as a bundle of functional, economic, and psychological paybacks given by the job, and steady with the employing firm. Identically, employer brand establishes the identity of the firm as an employer. Potential outcomes of effective employer branding incorporate diminished turnover, expanded employee satisfaction and performance, enhanced service quality, and a higher level of customer retention (Miles & Mangold, 2004).

Notwithstanding, the omnipresence of employer branding among professionals and the lack of scholarly research on the theme brings up intriguing questions for management researchers. What theories can assist us with understanding employer branding? How might employer branding be researched and validated as a pertinent practice for human resource management? (Backhaus & Tikoo, 2004). Firms now seem to be allocated significant resources on employer branding campaigns, showing that they are discovering the value in practice. As indicated by the conference board report on employer branding (Backhaus, 2016) firms have tracked down that compelling employer branding prompts competitive advantage, assists individuals to internalize firm values and helps in employee retention. Regardless of the evolving prevalence of the employer branding practice, academic research on the topic is restricted to a couple of articles in the marketing literature.

The resource-based view (RBV) of the firm recommends that attributes of a firm's resources can add to persistent competitive advantage (Barney, 1991). Early interest in employer branding existed transcendently in the HR practitioner domain, with an assortment of white papers and magazine articles portraying ways that marketing concepts could be and where employer branding large adequately applied to the HR field. Even though organizations typically focus their branding efforts toward creating product and corporate brands, branding can also be utilized in the domain of HRM (Backhaus & Tikoo, 2004). Increasingly, firms are utilizing employer branding to captivate recruits and ensure that current employees are occupied with the way of life and the methodology of the firm. Employer branding is characterized as a targeted, long-term technique to deal with the mindfulness and perceptions of employees, potential employees, and related stakeholders concerning a specific firm (Sullivan, 2004). Further, employer branding is a long-term strategy to deal with the mindfulness and view of employees, potential employees, and related partners concerning a specific firm. The employer brand advances an image showing the firm as a good place to work (Biswas & Suar, 2013). Employer branding is a distinguishing and pertinent opportunity for an organization to separate itself from the competitors making its branded elements for employee satisfaction and employee happiness resulting in retention, productivity, and efficiency. Backhaus and Tikoo (2004) posit that employer branding generally includes the company's value system, policies also, practices toward the destinations of attracting, motivating, and retaining the firms' present and possible employees.

These definitions demonstrate that employer branding includes promoting, both inside and outside the firm, a transparent perspective on what makes a firm extraordinary and alluring as a business. They characterize employer branding as the way toward building a recognizable and special employer personality, and the business brand as an idea of the firm that separates it from its rivals (Figurska & Matuska, 2013). The management researchers can utilize employer branding to coordinate a wide range of however related constructs that have been examined in the recruiting, selection, and retention literature under one umbrella (Sokro, 2012). Sullivan (2004) claimed that in HRM literature employer branding encapsulates three-stage progress. First, a firm formulated the 'value proposition', which should be ingrained in the brand. Harnessing information regarding the firm's culture, management posture, present employee's qualities, present employment image, and attractions of product or service quality managers create a concept of their firm's specific value to its staff. The value proposition generates the focal message that the brand transmits.

Miles and Mangold (2004) claimed that the key to ideal employer branding was sympathetic to the link among a firm and its members. To define this link and to portray its status in the context of employer branding, they turned to the theory of psychological contracts. Notwithstanding, the new pattern toward downsizing, outsourcing, and flexibility on some portion of the business has forced another type of psychological contract, in which employers give labourers marketable skills through training and development in return for effort and adaptability (Baruch, 2004). Despite negative perceptions of this new business reality, firms use employer branding to promote their advantages, including training, career opportunities, personal growth, and development. As cited in Berthon et al. (2005) HR specialists Hewitt Associates indicates that there are five stages to fostering a solid employer brand: (i) comprehend your firm, (ii) make a 'convincing brand promise for employees that reflects the brand promise for clients, (iii) foster guidelines to quantify the fulfilment of the brand promise, (iv) 'ruthlessly align' all individuals practices to support the brand promise, and (v) execute and measure. Also, it is theorized that organizations with solid employer brands can decrease the expense of recruitment, improve employee relations, increment employee retention and surprisingly offer lower pay rates for equivalent staff to firms with more fragile employer brands (Ritson, 2002). Berthon et al. (2005) posit that a system of five dimensions of employer brand that are valid to employees are, interest value, social value, economic value, development value, and application value. Interest value is because of the perception that a firm conveys an encouraging and enthusiastic workplace, inventive company policies and procedures, and uses the creativity of its employees to develop prestigious products and services. On the other hand, the social value indicates the extent to which the firm provides the employees with a friendly, pleasant working climate and promotes collegiality and teamwork culture. Further, economic value is based on the perception that the organization provides its employees above-average remuneration, job security and prospects. Development value entails the extent to which an employer admits his employees' actions and gives career-enhancing experiences that act as a commencement for future employment. Eventually, application value is in light of the perception that the employer provides employees with the opportunities to apply their knowledge and skills at work and teach others through training, coaching and mentoring opportunities.

Referring to the environment of the firm, critical for the development of the concept of employer branding are demographic changes, changes in the design of HR's abilities and changes in perspectives towards work (Figurska & Matuska, 2013). Diminishing the working-age populace, various views of the role of work in human life by youthful age and going on for quite a long-time battle for talents make the challenges in selecting and retaining the correct employees in firms (Sokro, 2012). Another factor that decides the requirement for making moves in the area of employer branding is globalization. Above all else, organizations increasingly more often and again understand their organizations on the transnational level. Furthermore, advanced information and communication advances imply that it is difficult to assemble an employer brand in one market or a chosen district. The next determinant of employer branding is competitiveness. These days, an ever-increasing number of employers append incredible significance to talent management, given the assumption that it is essential for building a competitive organization in the long term. Specifically, this applies to those firms for which attracting and retaining talented employees can't be simple. Thusly, numerous employer branding strategies to get long-term needs of talented employees (Schneider, 2003).

4. Result and discussion

In enriching a specific line of research, synthesizing the past research findings is of greater important task (Zupic & Čater, 2015). Researchers have usually harnessed two methods to understand earlier research findings: the qualitative structured literature review and the quantitative method of meta-analysis. The bibliometric research methods are of gaining popularity to map the structure and growth of scientific fields and disciplines. Zupic & Čater (2015) delineated that bibliometric methods use a quantitative approach to describe, evaluate, and monitor published research in a particular domain delineated that bibliometric methods use a quantitative approach for the description, evaluation, and monitoring of published research in a particular domain. Bibliometric analysis was performed to identify the research clusters in employer branding. The bibliometric analysis depends on the principle that citations are an effective and dependable proxy for surveying the impact of different publications or authors on a domain of research. Although citation behaviour can be prejudiced by components like the openness of a specific report or negative citations, citation counts alone can give a target proportion of the practicality of a publication. Citation analysis objectively distinguishes compelling articles in a domain and investigates the connection between citing and cited articles and the publications containing the citations (Gundolf & Filser, 2013). The frequency of citation signifies the meaning of a record, and subsequently, an oftentimes cited report conveys prominent discoveries and significant contributions to the research discipline (Yue & Wilson, 2004). Citation analysis assists with analyzing development in citations after a while and recognize when key articles were composed and subsequently track their prevalence.

Table 1
The synopsis of the most influential research article on employer branding

Authors	Topic	Citation	Purpose	Findings
Edwards (2005)	An integrative review of employer branding and OB theory	793	To review the existing literature linked to the emerging field of employer branding, to add insight from the perspective of the management of HR.	Research and theory from a range of fields can help add to one's knowledge of employer branding; these include areas of research that investigate organizational attractiveness to potential recruits, research and writing linked to the psychological contract literature.
Aggerholm and Andersen (2011)	Conceptualizing employer branding in sustainable organizations	290	To reconceptualize employer branding in sustainable organizations at the intersection of branding, strategic HRM and CSR.	When firms adopt strategies for sustainable development (including CSR), it affects how to approach stakeholder relations and organizational processes.
Backhaus and Tikoo (2004)	Conceptualizing and researching employer branding	2318	Explore the link between employer branding and organizational career management. Finally, it outlines research issues that need to be addressed to develop employer branding as a useful organizing framework for strategic HRM	Employer branding is a relatively new approach toward recruiting and retaining the best possible human talent within an employment environment that is becoming increasingly competitive.
Chhabra and Sharma (2014)	Employer branding: strategy for improving employer attractiveness	279	Aims to study the already adopted employer branding strategies and the preferred channel through which organizations should promote employer attractiveness.	Among the students, the most preferred organizational attributes were organizational culture, brand name and compensation. Students rated the job portal to be the preferred channel for employer attractiveness.
Mouton and Bussin (2019)	Effectiveness of employer branding on staff retention and compensation expectations	25	This study investigated the effects of employee branding on staff retention and compensation expectations.	Increased perceptions of employer branding relate to staff with greater reports of retention and lower levels of compensation expectations. Demographic factors were not significant in the analysis.
Ahmad and Daud (2016)	Engaging people with employer branding	94	To determine the relationship between employer branding and turnover intention among employees in Malaysia's SME-ICT industry.	The development value in employer branding influenced the employee's turnover intention. The resulting framework is useful in providing a better understanding of how to develop a successful HRM from a managerial perspective.
Backhaus (2016)	Employer branding revisited	156	Provides an overview of the work that has been	Firms must unite their change management function with

			done on employer branding, highlights recent developments in the research, and suggests future research directions.	their employer-branding efforts. Each time an organization undergoes a strategic change, a change in ownership, an acquisition, or a merger, it is essential that the internal and external employer brand messaging is current and realistic.
Berthon et al. (2005)	Captivating company: dimensions of attractiveness in employer branding	1650	Identify and operationalize the components of employer attractiveness from the perspective of potential Employees.	Objective centres on developing and validating a scale to assess employer attractiveness
Biswas and Suar (2016)	Antecedents and consequences of employer branding	240	Reviewing and analyzing the phenomenon of employer branding.	Realistic job previews, perceived organizational support, equity in reward administration, perceived organizational prestige, organizational trust, the leadership of top management, psychological contract obligations, and corporate social responsibility influence employer branding.
Theurer et al. (2018)	Employer branding: a brand equity-based literature review and research agenda	222	Takes a brand equity perspective to review the extant literature and create an integrative model of employer branding.	The authors develop an employer branding value chain model and derive future research avenues as well as practical implications.
Aldousari et al. (2017)	Impact of employer branding on organization's performance	34	Explores employer brand by employing branding that examines the interrelation between the elements and the branding process' outcomes.	Firms with an advanced employer branding strategy have greater productivity than those organizations that lack or have partially developed strategy.
Miles and Mangold (2004)	A conceptualization of the employee branding process	509	Propose a conceptual model of the employee branding process in which the employee brand image is driven by the messages employees receive and the mechanisms within employees' psyches that enable them to make sense of those messages.	The model identifies various sources through which messages are delivered and describes the contributions of those sources to the employee branding process. The psychological contract is identified as a perceptual mechanism central to the employee branding process.
Moroko and Uncles (2008)	Characteristics of successful employer brands	656	Examine the perceptions of industry experts of the characteristics of employer branding success.	There are two key dimensions of success for an employer brand: attractiveness and accuracy. As with customer-centric brands, attractiveness is underpinned by awareness, differentiation and relevance. For employer brands, however, the accuracy with which the employer brand is portrayed is also critical to success.

Source: Developed by the researchers based on literature (2021).

There is no question that employer branding aims to introduce a positive and alluring image to current and future employees. Employer branding is one of the numerous reputational factors that add to competitive advantage. Figure 1 shows the research terms and concepts studied in the area of employer branding to date viz., recruitment efficiency, brand perception, employer brand leadership, psychological contract, organizational attractiveness, employer branding strategy, employer brand image, talent management and talent retention, organizational culture, human resource branding, brand value proposition, employer brand loyalty, employer brand promise, corporate reputation management, employer branding segmentation, digital employer branding and communication.

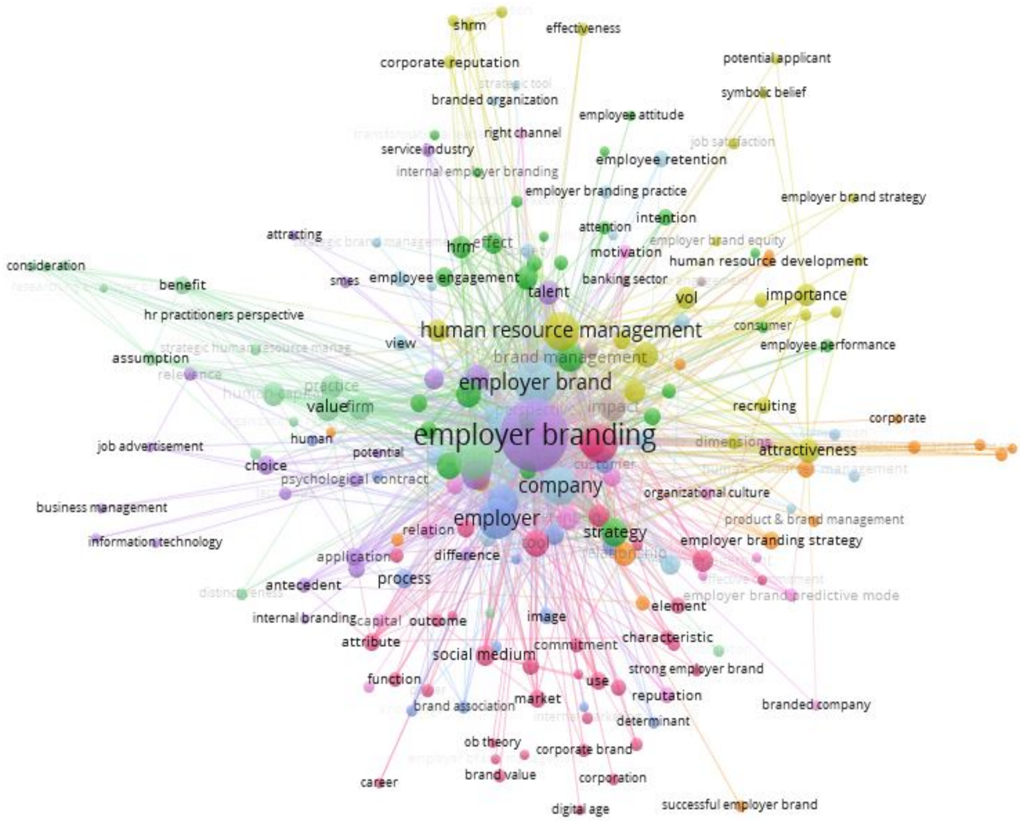

Figure 1 Co-occurrence of words
Source: Bibliometric analysis.

The bibliometric analysis result shows (Figure 2) several clusters in employer branding viz, cluster one depicts innovation which is linked to employer branding and employer brand image. Cluster two shows human resource development practices such as training and development and career development. Cluster three is identified as a corporate social responsibility program that evokes employer branding effectiveness. Cluster four is the employee value proposition that is linked to employee engagement and employer brand image. Cluster five shows social media and social media branding both inside and outside the firm. Cluster six brand equity. Cluster seven was identified as strategic brand management. Cluster eight is recognized as talent management. Cluster nine represents the Psychological contract.

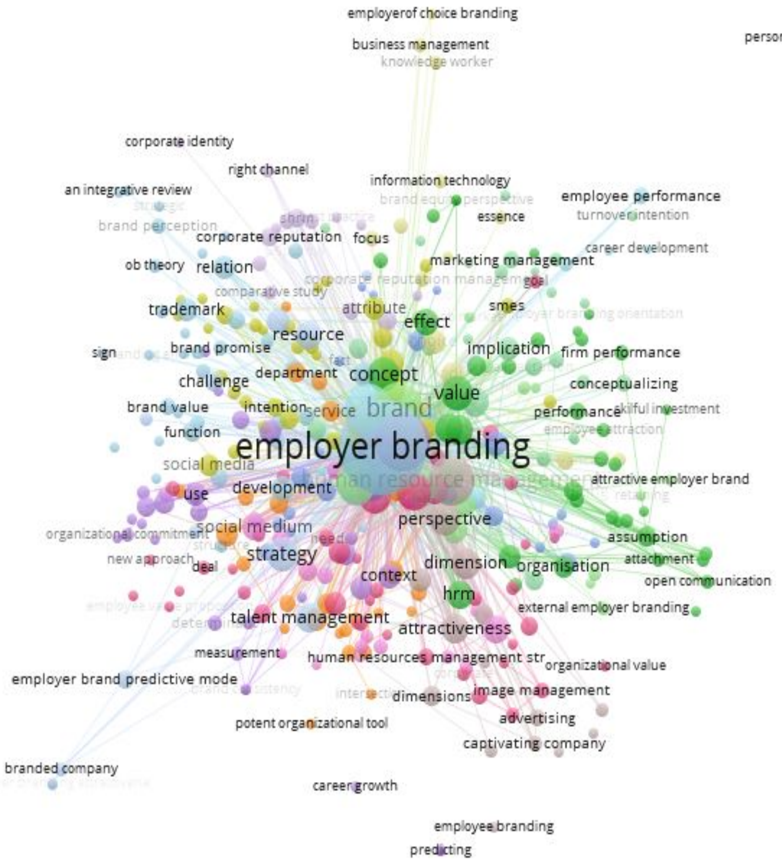

Figure 2 Clusters in employer branding

Source: Bibliometric analysis.

4. Discussion

There is no doubt that the reason for employer branding is to present a positive and captivating image to current and anticipated employees. Employer branding is one of the various reputational factors that add to competitive advantage. Over the long haul, there has been definitional coast in the employer branding literature. At its initiation, employer branding didn't propose the hankering of a firm to be the employer of choice. One target of the employer branding process is a division of the employer in the employment marketplace, while an ensuing goal is to keep up worker obligation to the firm through a sensation of solidarity with the brand. The employer branding idea can be particularly important in the quest for an organizing framework for strategic human resource management. Employer brands are created to be reliable with the company's product and corporate brand (Foster, Punjaisri, and Cheng, 2010). There are a few similitudes between the employer brands and the product and corporate brand; however, there are likewise two key contrasts. One, the employer brand is employment specific, describing the firm’s way of life as a business. Two, it is aimed at both internal and external audiences through product and corporate branding endeavours are essentially aimed at an outside audience (Foster, et al., 2010). Firms will embrace branding techniques to distinguish themselves from competitors in either product or corporate branding and employer branding arenas. Employer branding thus, focuses on constructing a unique image in the minds of the prospective employment market that that firm, over all others, is an ideal place to work. Ambler and Barrow (1996) saw the chance to attract employees to firms utilizing brand marketing strategies, yet their vision for employer branding went further. They proposed that internal marketing of the brand would likewise assist with building more noteworthy degrees of employee inspiration and improved client results (cited in Backhaus, 2016). Organizations with a stronger employer brand image can habitually offer less remuneration than organizations without a created employer brand to employees with equivalent capabilities and abilities. The explanation is that graduates try to work in an organization that addresses specific values (Edwards, 2005). In a contemporary business setting, it is challenging to attract and hold steadfast and competitive workers, because a solid employer brand fills in as a factor to organizations with employer brand system to situate themselves immovably in the cutthroat work market (Berthon et al., 2005; Grace & Iacono, 2015).

5. Research agenda

In the section above, we have given a theoretical underpinning for employer branding. In this part, we lay out a research agenda for developing and validating employer branding as a valuable practice for human resource management.

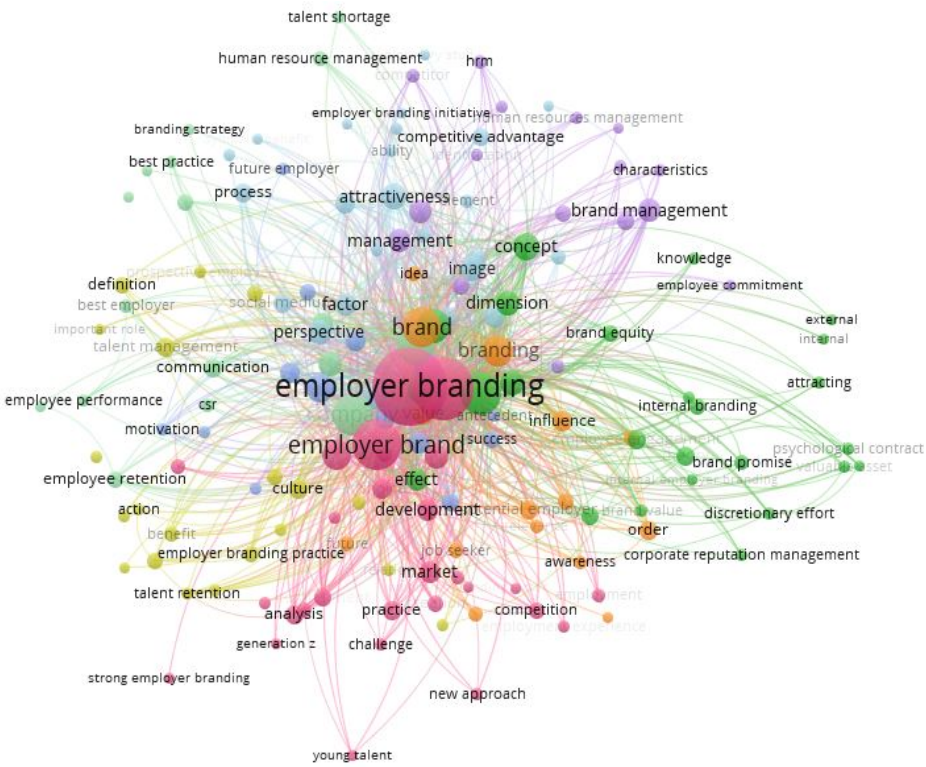

Figure 3 Employer branding research domains (topics, abstracts, keywords)
Source:Bibliometric analysis.

Above all else, research should be directed into how firms should create and execute successful employer branding. In particular, what process should be utilized to foster the fundamental value proposition of the employer brand? What techniques and strategies should be utilized for the internal and external marketing of the employer brand? What are the hindrances to keeping up consistency between the outside and inward showcasing of the brand? How could these obstructions be overseen? (Backhaus & Tikoo, 2004).

Sustainability is a great concern for firms today owing to environmental pressures. Every firm should be mindful in their production and business operations, which significantly affect nature's well-being. Green environmental practices should also be taken into account in terms of their interaction with employer branding. The concept of *sustainability* has advanced into almost every part of the management, with the attention typically set on dealing with the present resources in a way that guarantees their accessibility for the further (Backhaus, 2016). Firms concern about the triple bottom line of people, profit, and planet, to gauge the financial, social, and natural performance of the organization. Sustainability with regards to employer branding can be portrayed as the capacity of the brand to follow through on its promises in a positive manner, over time, to expand employee outcomes. Further, firms are now focusing on innovation as a branding strategy. Today, many firms are utilizing innovative strategies to brand themselves and differentiate themselves from those of their competitors. Despite the fact, while formulating employer branding strategy, firms should integrate their innovation strategy as a mechanism to elevate their success.

The assemblage of employer branding research over time led to date has tried the links of the fundamental paradigms. Research has imitated and reevaluated efforts done in the spaces of firm attractiveness and firm identity. The more troublesome task is yet to be done. What is the value of an employer brand? Does employer brand equity exist and how much does it drive the firm's outcome? Does it contribute to worker loyalty? Is there a quantifiable contrast between an organization with a solid employer brand also, an organization without one? To put it, does a solid employer brand contribute to employee productivity in apparent and quantifiable ways? (Backhaus, 2016). As cited by Backhaus and Tikoo (2004) if employer branding is in progress, it should be cautiously overseen for it to be successful. This requires measuring the resources made by employer branding and the effect of employer branding on firm performance. Employer branding makes two primary resources-employer brand associations furthermore, employer brand loyalty. The marketing literature gives instructions to examining brand associations and brand loyalty. Usually, branding has been the area of the marketing function. Therefore, future researchers can also focus on the accompanying research questions. What role, if any, should marketing play in employer branding? If the marketing has a role to play, how should the human resource-marketing interface be managed (Ewing & Caruana, 1999)? Employer branding is a relatively new approach toward recruiting and retaining the ideal human talent inside an employment environment that is turning out to be progressively competitive. Employer branding can be an important idea for both managers and researchers. Managers can utilize employer branding as an umbrella under which they can channel various employee recruitment and retention activities into an organized human resource strategy. Incorporating recruitment, staffing, training, and development and career management activities under one umbrella will have a significantly unexpected impact than each of the processes would have alone.

The most intriguing research question is regardless of whether employer branding assists a firm in accomplishing ideal performance. This is a confounded research question. It is particularly hard to explore an immediate relationship between human resource management programs and firm performance. It is simpler to decide the degree to which the program has made an influence on firm resources, like human resources or the behaviour of the individuals. On the other hand, it would be important to recognize the mediators between employer branding and the firm's net revenue or profit development. To have a superior comprehension of employer branding practice, research must be led to contrasting discernments of the employer brand image and the firm's overall reputation. Specialists may investigate the role of the employer brand in impacting the psychological contract of labourers. How much do labourers utilize the employer branding message as a groundwork of their psychological contract?

5. Conclusion

This paper explored a detailed literature review on employer branding through bibliometric and citation analysis. Nine compelling clusters were identified that are significant in employer branding. The cluster encapsulates, innovation, human resource development, corporate social responsibility, employee value proposition, social media, brand equity, strategic brand management, and talent management and Psychological contract. Further, firms ought to comprehend the components contributing to employer attractiveness. Just when firms run after incorporating these elements into the employer brand can effectively contend around the world in captivating new talents. Additionally, numerous lacunae still exist concerning the employer branding that ought to be fulfilled through additional research. Such lacuna incorporates matters of the brand identity's sources, the components of the brand image, the employer branding process, the connection among the employer brand and other firm's brands and identities, and its capacity to bring about sure results. The information and knowledge in regards to these issues should be explored inside a specific socio-economic setting. Interestingly, firms will utilize branding strategies to separate themselves from rivals in both the product/corporate branding also, employer branding fields. Social media will be the primary stage for outer employer branding, putting serious strain and control brand messaging across every social media channel. Organizations have to make and share their special brand message; they should control the ways by which enlisted people and individuals collaborate with the brand on social media and the impressions that outcome. Further, firms ought to bring together their change management practices with their employer branding efforts.

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Target needs of English language for employment concern for undergraduates of management discipline

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Abstract

The concern for English language of the private sector for employing graduates is high in esteem that specific English language competencies are expected by them. Employers are concerned with the English language competencies that the prospective graduate recruits should possess. However, most of the graduates of national universities who pass out from universities do not get selected at job interviews due to low standard of English language competencies despite access to university English Language Teaching programmes during their undergraduate study periods. The aim and the objective of this paper was to identify the most important competency-based performance indictors in English language particularly relevant to Business contexts with the aim of incorporating such indicators in future revisions of English Language Teaching programmes. The respondents included a total of 112 randomly selected stakeholders belonging to business sectors; banking, insurance, leasing, IT and telecommunication, construction, shipping, travel and tourism, agriculture and food production, and apparel industry. The sample that occupied more than 22 percent of graduate employees was selected randomly covering all the nine provinces of Sri Lanka. The collection of data was done through a questionnaire administered via e-mail. According to the results, giving descriptions, introducing oneself and company, following instructions given by superiors, listening to and comprehending customer communications, customer care, dealing with sales matters, advanced telephone skills, comprehending business communication, business related vocabulary, written business communication were of prime importance with average need identification mean value of 4 or above. Hence, the findings indicate that the English Language Teaching syllabi of English programmes in the management and business-related faculties need to be bent on English for specific purposes nature catering particularly for the business sector.

Keywords: *Curriculum development, employment, English language skills, management graduates, target needs.*

1. Introduction

English language competencies possessed by the undergraduates of universities have acquired much significance as it ensures the undergraduates of universities to secure prospective employability (Rameez, 2019). The concern for English language is very much stressed in the private sector business ventures, compared to the public sectors as the business transactions are carried out mostly using English language communication by the respective business ventures. The need to possess an attractive English competency is significant to undergraduates of Management discipline given the fact that most of the avenues for employment is available in the private sector. During the past decade, the development projects funded by the World Bank aimed at enhancing the higher education sector in Sri Lanka and a fair amount of funds has been allocated for projects to enhance English language competencies of the undergraduates. In the Sri Lankan university sector, the purpose of establishment of English Language Teaching Units (ELTUs) by the University Grants Commission in the year 1983 was to cater to the low standard of English language of the university undergraduates. As for now, these ELTUs established in each and every university have been elevated to departments in order to promote the quality of English Language Teaching (ELT) programmes offered with a view to improving the English language competency of the undergraduates.

In any educational programmes, the main hub of the academic domain is the curriculum through which the study programmes are implemented. Since universities offer diversified study programmes, the English language programmes need to align their curricula with subject specific alignment of English language teaching. English for specific purposes (ESP) discipline in second language teaching emerged to facilitate subject specific teaching of English language. As highlighted by Dudley-Evans and Johns (1991), there is a unique demand for ESP programmes as it is an approach to language teaching in which all decisions concerning the content of the syllabus and materials of teaching are based on learners' reasons for learning. Further, ESP programmes help to maintain the bridge between learners' basic English proficiency and their mainstream courses while helping students to develop language study and research skills appropriate for particular academic or professional discipline.

English language teaching programmes, particularly at university level include different disciplines such as ESP, English for academic purposes (EAP), and General English (GE). Since curriculum is the major determinant factor of study programmes, areas associated with curriculum development is vital for consideration. A number of scholars such as Hutchinson and Waters (1987), Berwick (1989), Richards (2001), and Brown (2009) have placed due emphasis on needs analysis (NA) which is a significant domain of development and revision of study programmes.

In NA, two main types of needs are to be considered for curriculum planning and syllabus design. They can be identified as target needs and learning needs. Target needs refer to what learners need to do or possess in order to be able to communicate effectively while learning needs involve how students are able to move from existing starting points (lacks) to what is expected to be done as final destination (necessities). In this study, the scope of NA is limited to identification of target needs of the prospective private sector business stakeholders where university graduates of management discipline are expected to be employed.

The existing objective of the study is to identify the English language performance indicators based on skills that the prospective business ventures expect from graduate employees once they are employed. The performance indicators in respect of major language areas of speaking, listening, interacting, reading, and writing are surveyed for the purpose of identification in the order of importance. It is expected that identification of such important competencies would facilitate proper ELT curriculum and syllabus development or revision of the curricula of universities and higher educational institutes. Further, incorporation of such indicators would facilitate to improve the English language competencies required by the undergraduates which would result in graduates being selected at prospective job interviews.

2. Literature review

Curriculum and the syllabus of study programmes function as the guide to pedagogical and learning environment and should necessarily help to bridge the gap of the target needs and the learning needs. It is widely accepted that one of the important considerations in curriculum development is the identification of needs and evaluation of such needs when and where necessary. The development of the effective curricula depends to a greater extent on NA which is a powerful tool that helps to identify and validate true needs (Akyel & Ozek, 2010). One of the pertinent functions of the NA is the provision to identify communication needs targeted in curriculum development. Byram and Hua (2013) accentuate the importance of NA for the development of language curriculum. Further, as Ulum (2015) points out that the results of the NA help to support teachers to define students' professional needs in terms of language skills as well as deficiencies in English language skills. Therefore, NA is the base that helps to identify ground content, teaching materials, and methods of teaching in the overall curriculum and programme design. However, it has been revealed that a small number of research has been reported in literature on the use of NA in curriculum development (Akyel & Ozek, 2010).

The identification of needs is more predominant in ESP courses. In second language teaching, ESP functions as a subset of English taught as a second or foreign language and it involves teaching English language to students or employed people with reference to subject dominated vocabulary, language skills and specific competencies they need. Hutchinson and Waters (1987) note that two key historical periods breathed life into ESP. First, the end of the second world war in 1945 brought with it an age of new perspectives in scientific, technical and economic activity on an international scale. The expansion of technology and commerce generated a demand for an international language. Due to the economic power and the activities of the United States in the post – war world, the demand for an international language was taken over by English. Second, the oil crisis of the early 1970s resulted in western money and knowledge flowing into the oil – rich countries. As a result, English suddenly became a big business and commercial pressures began to exert an influence. The other reason that had a tremendous impact on the emergence of ESP was a revolution in linguistics. There was a growing demand for English courses tailored to specific needs. The traditional concept of describing the rules of English usage shifted to discovering the ways in which language is actually used in real communication (Widdowson, 1978). One of the important features of ESP curriculum design is the identification of needs in a broader context which is identified as NA. Hence, ESP is remarkably associated with NA as ESP identifies NA as one of the typical characteristics (Li, 2014).

2.1. Needs analysis and curriculum development

NA is a process of gathering information that will serve as the basis for developing curricua that will guide the foundation of the entire learning environment of a particular group of learners. The outcome of the NA serves as the basis for the major three components of the curriculum; learning, teaching, and assessment in which designing of tests, compiling of teaching materials, designing of pedagogical activities and evaluating strategies are involved. Johns (1991) has shown that NA is the first step in curriculum design, for it can provide validity and relevancy for all the follow- up of curriculum design activities. NA is a defining characteristic of Language for specific purposes (LSP) courses (Dudley-Evans & Johns, 1991; Kim, 2006). Hence, the concept can be widely applicable to ESP, EAP, Business English, and other subject specific English courses. The importance of NA is applicable for both curriculum development and revision of courses as a key concept for the fact that course developers find it easy to investigate what specific areas that the learners ought to know or be able to do in the target situation where the language concerned is used. Tajino, James and Kijima (2005) have developmental changes that underwent in the discipline of NA in language courses. Since the scope of NA has become broader that the concept of NA applied in curriculum development has become increasingly sophisticated over time. By now, the scope of NA has become so broader though it was once seen as a relatively simple pre-course procedure to analyse target situation which some scholars' term it as target needs.

2.2. Target needs and learning needs

In the model of NA, Hutchinson and Waters (1987) discuss two concepts; target needs and learning needs. In their model, target needs refer to the knowledge and skills that the learners are required to master in the prospective working positions and target needs are divided into three sections identified as 'necessities', 'lacks', and 'wants. 'Necessities' refer to what the learner ought to know with the aim of functioning effectively in the target situation. 'Lacks' refer to the gap of knowledge between existing proficiency of learners and the target proficiency required by the working situation. 'Wants' are the subjective perception of learners that they want to learn from the language courses being followed. Learning needs on the other hand, are the required knowledge and skills that the learners need to master to meet the 'necessities, from the language programme (Hutchinson & Waters, 1987).

A similar framework of NA has been presented by Dickinson (1991). In his framework of NA, Dickinson (1991) refers to three domains known as 'needs', 'wants', and 'lacks' which are very much similar to what Hutchinson and Waters (1987) have proposed. According to Dickinson (1991),'needs' are those skills which a learner perceives as being relevant; 'wants' are a subset of 'needs' where the learner puts at a high esteem given the available time; and 'lacks' are the difference a learner processes between his present competence in a particular skill and the competence the learner wishes to achieve. Given the usual time constraints in general English teaching courses, it is essential that time is used effectively in teaching LSP and thus instruction is focused only on the areas of language and skills of direct relevance. Further, it is feasible to organize LSP instruction around needs because the learners have shared needs, since they are all currently studying or working in, or hoping to gain entry to a particular field or discipline. Therefore, there is a clear possibility to identify a set of common needs to a greater extent in an LSP situation than it would be in a general language teaching situation (Helen, 2013).

2.3. Empirical research done on needs analysis

Among the limited studies done on NA, much of the studies available are based on identification of target needs of students. In a study done by Kazar and Mede (2015) on ESP students, it has been revealed what ESP programmes ought to focus. The study done using a questionnaire and semi-structured interviews, included major areas of language skills; listening, speaking, reading, and writing with sub-skills belonging to the four major skills. According to the study, the priority areas were identified as presentation skills, learning key terms, writing e mail messages and reading academic tests. An empirical study done by Yan (2012) on NA of college business English course aimed at target situation needs, learning situation needs, and present situation needs which included micro business English skills has revealed that the college Business English course should mainly focus on enhancing listening and speaking of learners.

A case study by Alsamadani (2017) done on the ESP context of Saudi engineering students revealed that writing and reading along with speaking skills were needed more than other skills. In the Sri Lankan context, a NA on the required language skills by the industry from vocational graduates, targeting the perceptions of the kind of English that the vocational graduates need to use in the workplace revealed the importance of knowledge of ESP with a foundation in English for general purposes and the importance of technical English that could be used in specific situations (Ranasuriya & Herath, 2020). Form the studies found in the literature, it is apparent that diversity of perceptions with reference to English language skills and sub-skills have been reported. Hence, it is not justifiable to identify particular English language skills and sub-skills which indicate frequent and specific needs unless programme specific NA is done. What is evident is that the needs may vary from the context of environment form programme to programme.

3. Methodology

Based on the objectives, the study was carried out as a descriptive study for which survey method of research has been adopted. Hence, the study is a survey of identification of target needs of the prospective employment providers in the business sector. Survey studies can be defined as collection of information from a sample of individuals through their responses (Check & Schutt, 2012). Also, Singleton and Straits (2009) are of the view that surveys are used in social and psychological research and they facilitate both qualitative and quantitative research. The selection of the sample was done using the simple random sampling method from the major business categories in the business sector. The simple random sampling method was used as it helped to reduce any bias involved in the selection. Hence, the respondents of the study included a total of 112 stakeholders belonging to business sectors; banking, insurance, leasing, IT and telecommunication, construction, shipping, travel and tourism, agriculture and food production, and apparel industry. The sample was selected randomly covering all the nine provinces of Sri Lanka who occupy more than 22 percent of graduate employees.

The collection of data was done through a questionnaire administered online via e-mail to the selected respondents. Since the audience were spread across the country, correspondence of the questionnaire through e-mail to reach the sample was convenient. Further, through e-mail reminders, it was able to increase the response rate. The questionnaire was administered to the chief executive officers (CEOs), heads of human resource management (HRM) divisions, and senior managers mostly via e mail. In certain cases, the questionnaire was directly sent to the business organizations. The respondents were asked to indicate the importance of the performance indicators using a five-point Likert scale.

The data analysis was done quantitatively using Statistical Package for Social Sciences (SPSS) software. Descriptive statistics were used to analyze data. The study used five-point Likert scale to measure variables ranging from Strongly Disagree to Strongly Agree; Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), and Strongly Agree (5) and analysed the mean values for respective areas. For the purpose of interpretation of data, the five-point mean values were condensed to three levels and assigned vales. Hence, mean values from 1 to 2.33 were interpreted as “Low”, values from 2.34 to 3.67 were considered as “Moderate”, and mean values from 3.68 to 5 were interpreted as “High”. In order to analyse data, descriptive statistic method was used and obtained the mean values and standard deviations of the responses.

4. Results and discussion

The analysis of results contains the importance of performance indicators in respect of the skills; speaking, listening, interacting, reading, and writing. The results of the analysis of data obtained from the questionnaire administered to business stakeholders to identify the required performance indicators of the important English language skills are presented in this section. As discussed in the literature review, the identification of performance indicators would help to modify or develop English language teaching curricula to be used in the university ELT programmes.

The analysis of results shown in Table 1 indicates the importance oral skills; listening, speaking, and interacting. The number of business stakeholder respondents in the study included 112 respondents. In respect of performance indicators of speaking, the questionnaire included eight items. According to the perception of business stakeholders, giving formal presentations (sales etc.), giving descriptions of products/services, introducing oneself/company, and describing trends/performance at sales/ other meeting have been indicated with high mean values of 3.93, 4.09, 4.24, 3.73 respectively. The indicators of giving formal presentations, explaining situations to superiors/ customers/ colleagues, and reporting problems have been rated as moderate importance with referent mean values of 3.11, 3.04, and 3.07. Describing incidents (fire, clash, strike, accident) and giving advice have been rated as important with low mean values of 2.17 and 2.31 respectively. The standard deviation (SD) values indicated for all the indicators stand below one (1) which indicate that SD is reliable.

As indicated in the Table 1, in the performance indicators of listening, the business stakeholders have indicated mean values of high importance in; following instructions given by superiors (m= 4.22), following presentations/ lecturers/ talks (m= 3.87), and listening to and comprehending customer communications (m= 4.09). The performance indicators of following training sessions, comprehending interviews, and listening and comprehending stock market/ other reports have been rated as moderate with respective mean values of 3.04, 2.44, and 2.98 in the order of appearance. The only listening performance indicator with an indication of low value was ability to understand different English-speaking accents with a mean value of 2.21. The SD values of listening below one and the values support the validity of the mean values.

Table 1
Importance of oral skills

	Mean	Std. Deviation
Importance of performance indicators of Speaking		
Giving formal presentations (sales etc.)	3.93	0.904
Giving informal presentations	3.11	0.727
Giving descriptions of products/ services	4.09	0.865
Introducing (oneself/company)	4.24	0.705
Explaining situations to superiors/ customers/ colleagues	3.04	0.710
Reporting problems	3.07	0.952
Describing trends/performance at sales/ other meeting	3.73	0.980
Describing incidents (fire, clash, strike, accident)	2.17	0.683
Giving advice	2.31	0.769
Importance of performance indicators of Listening		
Following training sessions	3.04	0.842
Following instructions given by superiors	4.22	0.664
Comprehending interviews	2.44	0.785
Following presentations/ lecturers/ talks	3.87	0.833
Listening to and comprehending customer communications	4.09	0.725
Listening and comprehending stock market/ other reports	2.98	0.906
Ability to understand different English-speaking accents	2.21	0.729
Importance of performance indicators of Interacting		
Basic skills in telephone (Answering/ Taking a call)	3.04	0.959
Customer care (negotiating/ inquiring/ assurance/ refusal)	4.15	0.729
Participating in discussions at business meetings	3.11	0.938
Visiting a company or receiving visitors	3.15	0.810
Dealing with sales matters (sale/ marketing/ bargaining/ offering/ obtaining discounts)	4.20	0.934
Socializing in situations related to business matters	2.11	0.823
Advanced telephone skills (changing an appointment, making an appointment, dealing with problematic situations)	4.24	0.736

Source: Survey administered to business stakeholders

There were seven variables of performance indicators of interacting. The three indicators namely; customer care (negotiating/ inquiring/ assurance/ refusal), dealing with sales matters (sale/ marketing/ bargaining/ offering/ obtaining discounts), and advanced telephone skills (changing an appointment, making an appointment, dealing with problematic situations) had been indicated with high mean values of importance having mean values of 4.15, 4.20, and 4.24 respectively. The performance indicators that had moderate values were; basic skills in telephone (answering/ taking a call), participating in discussions at business meetings, and visiting a company or receiving visitors. The respective mean values of moderate indicators were 3.04, 3.11, and 3.15 in the respective order. Socializing in situations related to business matters (m= 2.11) was the only indicator with a low value.

The next data analysis was based on the reading skill in which there were 13 performance indicators. The results in Table 2 show that there were four indicators that the business ventures had indicated high mean values of importance. They were; comprehension and identification of information given in business letters, faxes, e-mails, memos, short reports, looking for specific points in a text / letter / fax etc., understanding information given in tender notices, tender documents, and knowledge of vocabulary related to business field. The respective mean values in the order of appearance were; 4.26, 3.87, 3.98, and 4.26. In comparison to indicators with high mean values, there were seven indicators that the respondents had considered moderate with respect to satisfaction. They include; comprehension of information given in average texts such as articles of newspapers / magazines (m= 3.28), reading and comprehension of Memorandum of Understanding (MOU) (m=3.30), reading and understanding information in a form / graph, in an application in order to fill (m=3.28), ability to understand information given in a circular letter/ text related to business (m=3.30), reading and understanding of notices, advertisements (m=3.31), surfing the web for information (m= 3.15), and identifying information given in graphic mode such as pie chart, table, bar graphs etc. (m= 3.13).

For the performance indicators of reading and comprehension of legal documents, and ability to summarize information given in a text, the respondents had indicated requirements with low values. Hence, the data analysis showed that the mean values were 2.17 and 2.11 respectively. In all the indicators of reading, the SD values were less than one and this is an indication of the reasonable deviation from the respective mean values.

Table 2:
Importance of reading

Importance of performance indicators of Reading	Mean	Std. Deviation
Comprehension of information given in average texts such as articles of newspapers / magazines	3.28	0.834
Reading and comprehension of MOUs	3.30	0.963
Reading and comprehension of legal documents	2.17	0.973
Comprehension and identification of information given in business letters, faxes, e – mails, memos, short reports	4.26	0.855
Reading and understanding information in a form / graph, in an application in order to fill	3.28	0.958
Looking for specific points in a text / letter / fax etc.	3.87	0.996
Ability to understand information given in a circular letter/ text related to business	3.30	0.628
Understanding information given in tender notices, tender documents	3.98	0.882
Ability to summarize information given in a text	2.11	0.716
Reading and understanding of notices, advertisements	3.31	0.891
Surfing the web for information	3.15	0.942
Identifying information given in graphic mode such as pie chart, table, bar graphs etc.	3.13	0.646
Knowledge of vocabulary related to business field	4.26	0.865

Source: Survey administered to business stakeholders

Table 3 depicts the results of data analysis involving 112 respondents with regard to the importance of writing. Out of the nine performance indicators, there were three indicators in each of the value indicators, i.e., high, moderate, and low. Writing e-mails, faxes, memos, notices and business letters, writing reports (market research, incidents, business / sales progress), and dealing with customer complaints showed high importance with mean values, 4.46, 4.15, and 4.17 respectively. The writing performance indicators that had moderate mean values were; writing a profile about a company (m= 3.46), filling in forms / applications / telephone massage pads (m= 3.48), and writing the agenda / minutes of a business meeting (m= 3.20) with the mean values indicated. The writing performance indicators that had low profile of importance were; describing a process / procedure, writing long reports, and writing the agenda / minutes of a business meeting with respective low mean values of 2.02, 2.24, and 2.11. Similar to the other indicators, the SD values in writing too were reliable with SD values indicating in Table 3.

Table 3
Importance of writing

Importance of performance indicators of Writing	Mean	Std. Deviation
Writing e-mails, faxes, memos, notices and business letters	4.46	0.887
Describing a process / procedure	2.02	0.931
Writing Reports (market research, incidents, business / sales progress)	4.15	0.894
Writing long reports	2.24	0.737
Writing articles for professional journals	2.11	0.859
Writing a profile about a company	3.46	0.887
Filling in forms / applications / telephone massage pads	3.48	0.937
Writing the agenda / minutes of a business meeting	3.20	0.667
Dealing with customer complaints	4.17	0.825

Source: Survey administered to business stakeholders

Since the present study was focused particularly on the major English language skills with respective micro skills, the diversified indications of the studies discussed in the literature review such as Kazar and Mede (2015), Yan (2012), Alsamadani (2017), and Ranasuriya and Herath (2020) cannot be directly compared with the findings as the respective objectives of studies differ in that they mostly bent on students' needs. However, most of the studies have followed the theoretical bases such as NA, target needs, and learning needs discussed by well-known scholars such as Hutchinson and Waters (1987) and Dickinson (1991) and the theories discussed can be applied depending on the purpose.

5. Conclusion

This study investigated the priority-based English language competency performance indicators (target needs) of the oral, reading, and writing skills of the business stakeholders who would employ university graduates belonging to faculties of management discipline. For the purpose of the descriptive study, the oral skills included; listening, speaking, and interactive skills. Reading and writing skills were the other two skills included in the study. According to the results, competency indicators such as; ability to introduce oneself and company, giving formal presentations, ability to describe products and services, and describing trends of sales and performance of respective departments are of prime importance in the area of speaking. Similarly, for listening, ability to understand; instructions given by superiors, customer complaints, presentations and lectures in the training sessions are the most important competencies that the business ventures expect from the graduate employees. In business communication contexts, ability to interact in situations where employees have to possess necessary skills such as customer care, sales matters, and telephone skills have been shown to be highly required.

Further, as shown in data analysis, reading and comprehension competencies involving letters and faxes, documents related to tender notices and specific vocabulary in the business context have been shown to be extremely useful. Further, business ventures expect their employees to be able to engage and possess competencies in written communication, i.e., business letters and e-mails, memos, faxes, reports of business, and to deal with customer complaints in written form. In English language programme and curriculum development, the performance indicators discussed above be placed in high esteem. However, the competencies with moderate values mentioned in the results and discussion section could also be accommodated depending on the duration and the time available for the ELT programme.

From the discussions of the results of the present study and based on the previous studies, it is implied that NA in curriculum design is a useful domain particularly for ESP programmes and both target needs and learning needs are to be considered in NA. The study comprised only 112 sample stakeholders and given the magnitude of the number of business stakeholders in the country, this is a limitation. From the results of the study, it is proposed that further studies that include comparative analysis could be carried out to identify the difference of target needs based on the nature of the business sector.

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The impact of firm and market performance on foreign portfolio investments in Sri Lanka

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Abstract

This study investigates the impact of foreign portfolio investments on market and firm performance in the Colombo Stock Exchange. For this purpose, the companies listed in Colombo Stock Exchange from 2011 to 2019 financial years have been selected. To conduct the analysis, the study employed panel data regression using E Views. The study used foreign purchases, sales, and net investments to measure the study's dependent variable, foreign portfolio investments. Return on asset return on equity, return on sales, market value added, and All Share Price Index return were taken as the study's independent variables. The study's findings evidenced that firm performance has a significant positive impact on foreign purchases and net foreign portfolio investments. Market performance in terms of market value added has a significant positive effect on foreign purchases and sales, whereas market performance in terms of ASPI return negatively impacts net foreign portfolio investments. The findings of the study contribute to identify the effect of firm and market performance on foreign portfolio investments. The results are significant for stakeholders, especially the investors, for their cross-border portfolio investment decisions.

Keywords: *Firm performance, foreign portfolio investments, market performance, Sri Lanka.*

1. Introduction

Holding financial assets from another country, such as equities, bonds, mutual funds, and traded funds, is known as foreign portfolio investment (FPI). There have been a lot of studies on foreign direct investments, but here have dearth of studies on foreign portfolio investments (Borin & Mancini, 2015; Gurbuz & Aybars, 2010). Furthermore, those studies focused mostly on market performance and foreign portfolio investments (Zahirullah & Shah, 2019; Haider, Khan, Saddique, & Hashmi, 2017), and the combination of market and firm performance is an issue that needs to be looked at further. Because foreigners may be more interested in the performance of a company rather than the performance of the market. Even in Sri Lanka, it appears that few studies have been performed to investigate the impact of market performance on FPI (Kumara & Dayaratne, 2015). As a result, the current research focuses on the impact of firm and market performance on foreign portfolio investment. According to the Colombo Stock Exchange's (CSE) FPI statistics, the study divided FPI into three categories: foreign purchases, foreign sales, and net foreign investments, which is the difference between foreign sales and foreign purchases.

Firm performance is the outcome of a firm's operations, and it does not depend only on the firm's efficiency. Measurement of a firm's performance can be done using different proxies. In this study, aligning with a few prior scholars (Hong, 2017; Aydin, Sayim & Yalama, 2007; Jusoh, 2016; Shrivastav & Kalsie, 2017), performance was measured by using four proxies namely return on assets (ROA), return on equity (ROE), return on sales (ROS), market value added (MVA). Earnings is the summary of the performance of an entity, and it is an essential factor that investors consider for their economic decisions (Abeysekera & Guthrie, 2005; Amr et al., 2019; Ball & Brown, 1968). Furthermore, the importance of earnings for the investors and the creditors is highlighted in the Conceptual Frameworks of the International Accounting Standard Board (IASB, 2018). Therefore, foreign investors may also interest on the performance of an entity before making their investment decision. Numerous studies are available to investigate this impact worldwide with different outcomes (Zahirullah & Shah, 2019; Haider et al., 2017; Al-Smadi, 2018; Ojong, Anthony & Arikpo, 2017; Nguyen, 2017). For examples, Haija and Alrabba (2017) and Mihai (2012) concluded that there is no significant relationship between foreign ownership and firm performance.

Moreover, while some studies revealed a negative relationship (Hong, 2017), other studies concluded with a significant and positive impact from foreign ownership on ROA and ROE (Azzam, Fouadb & Ghoshc, 2013). At the same time, there are limited studies in the Sri Lankan context in this area (Kumara & Dayaratne, 2015; Ariyarathna & Wijesinghe, 2014). For example, Ariyarathna and Wijesinghe (2014) examined only the impact of foreign institutional and individual investment on stock market performance. Therefore, it is evidenced that to the best of our knowledge, and prior studies have not combined the firm performance and market performance variables to investigate the impact on FPI.

With this backdrop, the main objective of this study is to investigate whether the firm and market performance have any significant impact on FPI on listed manufacturing companies at CSE. Hence, the current study incorporated two main research objectives. Firstly, to examine the impact of firm performance on FPI in manufacturing companies listed at CSE and secondly to investigate the impact of market performance on FPI in manufacturing companies listed on CSE. This study provides an essential contribution to the practice by examining the unfilled gap existing in the context of Sri Lanka. More specifically, the study contributes to identifying both the firm and market performance impact on FPI. Also, this study helps to enhance the quality of the investment decision-makers. Further, the study identified FPI as foreign purchase, foreign sales, and net foreign investment.

The rest of the paper is outlined as follows. The following section discusses the previous studies on the area, while section three outlines the study's methodology. After that, the results and discussion is presented in the fourth section. Finally, the conclusion of the study along with the limitations and directions for future studies are presented. Hence, the next section looks at the review of prior studies with the study's theoretical background.

2. Literature review

FPI is a type of investment that holds financial assets in another country in the expectation of a future return but does not transfer firm ownership to foreign investors directly (Goldstein & Razin, 2005). The FPI was defined by Haider, Khan, and Abdulahi (2016) as the capital inflow or foreign investment into the country. As a result, the FPI is given indirect ownership of the company's financial assets by the investors. As a result, the investor can use FPI to look for opportunities in other countries. FPI is more liquid than foreign direct investments because it is traded on a stock exchange, and it is a shorter-term investment than foreign direct investments (Haider et al., 2016). The current study used a few theories. According to Standard Neoclassical Theory, when it comes to the theoretical basis, capital flows are determined by differences in return among countries. That is, if the returns are high, the market will attract more investors. The development of hypotheses is also aided by agency theory and resource-based theories. Stephen Ross and Barry Mitnick's work expressly states that a theory of agency was developed in 1973 (Mitnick & Barry, 2019). Then, to address the disagreement between the principle (manager) and the agent, I used the agency theory (owner). The fundamental rationale for this agency theory is the asymmetry of information between the principal and the agent. The agency theory assumes that the manager's and owner's interests are always not aligned.

Before investing foreigners in a company, they may examine whether the firm has lucrative performance in their investment period. Between stock owners and managers having low conflict, it may lead to an increase in the firm performance. Therefore, foreign investment can be increased when the firm has better performance. Further, the high conflict between stock owners and managers may lead to lower firm performance, creating a decreased foreign investment of the company. Markowitz introduced the portfolio investment diversification theory in 1952. The portfolio investment diversification theory included the idea that investors make decisions based on two factors: risk and return. Investors, according to this notion, diversify their risk and optimize their rewards. When the prices of securities move in lockstep, investors diversify their portfolios. The All Share Price Index (ASPI) is a daily indicator of market performance. Investors can compare other countries' stock market indexes to the Sri Lankan ASPI to understand the market's risk and return. According to the theory, the investor chooses the low-risk, high-return investing market. As a result, ASPI was used in the present research to measure market performance. Another critical theory that can be identified is the capital asset pricing model (CAPM). When securities from different countries show low levels of correlations, investing in foreign assets improves the efficiency of a portfolio by reducing its overall variance (Bonizzi, 2013). Furthermore, the efficient market hypothesis (EMH) developed by Fama (1970) also can be considered. Because, as per the EMH, the investors act quickly to new information to buy, sell, or hold securities of that market where new performance information serves as the new information. With this theoretical backdrop, the empirical studies on the relations are discussed below.

The relationship between FPI and stock market indicators has been investigated in several countries. For example, Zahirullah and Shah (2019) have investigated in the context of Pakistan. The study incorporated net foreign portfolio investment (NFPI) as the dependent variable while using five independent variables: stock market capitalization, market returns, market turnover, market risk, and market indices. The study concluded that market returns, market turnover, and market indices positively impact NFPI while market risk has a negative and significant impact on NFPI. In China, Haider et al. (2017) examined the impact of stock market performance and inflation on FPI. They employed the Autoregressive distributed lag model, and the results revealed a significant positive impact of stock market performance on the FPI. At the same time, inflation has been significantly negatively associated with the FPI. Al-Smadi (2018) conducted research on determinants of FPI in Jordan and found out the variables that can affect FPI. This study used eight independent variables: aggregate economic activity, inflation, interest rate differentiation, stock market performance, risk diversification, country creditworthiness, governance, and corruption. The study revealed that stock market performance is not significant to the overall model. Furthermore, Ojong et al. (2017) researched the impact of the capital market on FPI in the Nigerian context. They found that there is a significant relationship between all share index and FPI in Nigeria. Moreover, it is evidenced that exchange rates, uncertainties of interest rates, and stock market returns have a significant positive impact on FPI (Nguyen, 2017).

Since it is evidenced different findings in several countries, Singhania and Saini (2017) examined the determinants of FPI in developed and developing countries. Interest rate, trade openness, and stock market performance were selected as the independent variables in developed countries, and freedom index, interest rate, trade openness, and stock market performance were considered independent of developing countries. However, the study found that stock market performance significantly impacts FPI in both developed and developing counties. Henceforth, it appears that there is contradictory evidence for the determinants of FPI in different countries. In the Sri Lankan context, studies have mainly considered the ownership structure and financial performance. For example, Balagobei and Velnampy (2017) studied the impact of ownership structure on the financial performance of listed Beverage Food and Tobacco companies. However, limited studies are available to investigate the FPI (Ariyarathna and Wijesinghe, 2014; Kumara & Dayaratne, 2015). For example, Kumara and Dayaratne (2015) examined the determinants of FPI in Sri Lanka, and Ariyarathna and Wijesinghe (2014) examined the impact of foreign institutional and individual investment on the stock market performance. The findings of their study concluded that NFPI has a causal effect on the CSE.

While many scholars research the relationship between foreign ownership and firm performance, Haija and Alrabba (2017) and Mihai (2012) concluded an insignificant relationship between foreign ownership and firm performance. Similarly, Hong (2017) also reported a negative relationship between foreign ownership firm performance, and Azzam, Fouad, and Ghosh (2013) concluded that foreign ownership has a highly significant and positive effect on ROA and ROE. Most of the studies examined the relationship between foreign ownership and firm performance (Haija & Alrabba, 2017; Hong, 2017) and revealed that foreign ownership has a positive relationship (Azzam et al., 2013) with firm performance. On the one hand, some studies showed that there is negative relationship and on the other hand, some studies concluded there is no any relationship between foreign ownership and firm performance (Mihai, 2012). As a result, those research findings cannot be directly applicable to the Sri Lankan situation. Based on this, it can be found that the majority of the studies examined the impact of market performance on FPI. But, it is not accessible to identify research about the effect on firm performance on foreign portfolio investment. Based on the literature survey conducted, it is found that no studies examined the impact of firm and market performance on FPI, especially in the Sri Lankan context.

In summary, it appeared that different studies had used different performance variables and have given different conclusions for various countries. For example, Zahirullah and Shah (2019) and Haider et al. (2017) conducted research and found that market indices positively impact NFPI in Pakistan and China, respectively. These studies provide more information and can be used to identify the linkage between FPI and firm performance. However, it is difficult to identify the studies that investigated the impact of firm and market performance on FPI as one study. Some studies concluded a positive effect of market indices on FPI (Zahirullah & Shah, 2019), while others concluded that stock market indices were insignificant to FPI (Al-Smadi, 2018).In the next section, the methodological concerns of the study are discussed.

3. Research methodology

The research design, population and sample selection, data collection methods, theoretical background, hypotheses, the definition of variables, conceptual framework, and model formulation are all covered in this section.

3.1 Sample, data and data collection

The present study is quantitative, and secondary data was gathered from annual reports and the CSE by the researchers. For nine years, from 2011 to 2019, the study used annual data to assess the influence of firm and market performance on foreign portfolio investments in listed manufacturing companies. As of January 20, 2020, the CSE had 290 businesses spanning 20 business sectors, with a market valuation of Rs.2748.10 billion. The second-largest companies, according to the CSE company category, are in the manufacturing industry. Furthermore, manufacturing enterprises have received the fourth greatest foreign investments in the last nine years. As a result, the focus of this research is on the manufacturing industry. Prior researchers have also underlined the importance of investigating industrial companies. Mihai (2012), for example, measured foreign-owned enterprises and firm performance using manufacturing companies in his research. FPI is the study's dependent variable. Foreign purchases, foreign sales, and net foreign investments have all been used to calculate the FPI. Firm performance and market performance are the study's independent variables. Financial performance indicators and a market performance indicator were used to assess firm's performance. The study used ASPI to measure market performance, which was used to measure the performance of the entire stock market. Table 01 shows the operationalization of the independent variables.

Table 1
Operationalization of independent variables

Variable	Measurement	References
Firm performance		
Financial performance indicators	ROA ROE ROS	Azzam et al. (2013); Mihai (2012); Hong and Loan (2017); Mihai (2012)
Market performance indicators	MVA	Hong and Loan (2017)
Market performance (entire share market)	ASPI	Kumara and Dayaratne (2015); Ariyarathna and Wijesinghe (2014)

3.2 Development of hypotheses

According to the agency theory, which was developed by Stephen Ross and Barry Mitnick in 1973, low agency conflict leads to higher performance, attracting foreign investors to invest in the company. Thereby, a positive relationship can be expected. In the same vein, hypotheses formulated in this study are based on the Neoclassical theory, Markowitz's portfolio investment diversification theory, and the EMH. The details of these theories were discussed in the literature review. Accordingly, the following hypotheses can be outlined with the theories identified above and the previous studies (Bonizzi, 2013; Fama, 1970; Markowitz, 1952).

H1: There is an impact of firm and market performance on foreign purchase

H2: There is an impact of firm and market performance on foreign sales

H3: There is an impact of firm and market performance on net foreign investment

Researchers identified the following conceptual framework to find out the impact of firm and market performance on foreign investments.

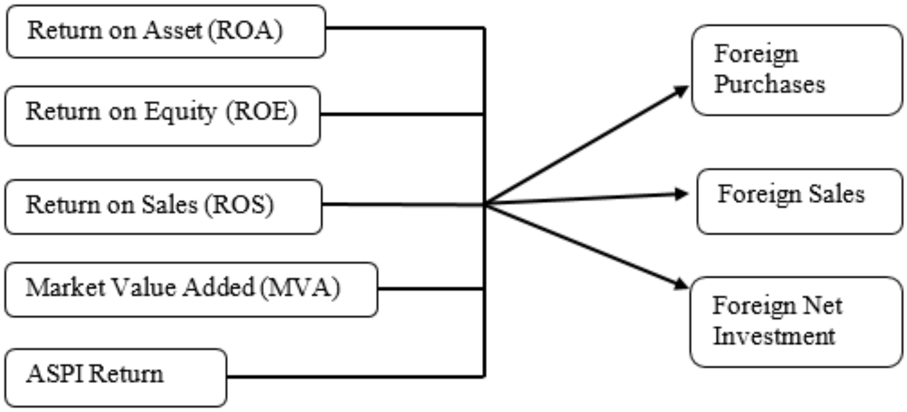

Figure 1 Conceptual framework of the study

Source: Developed by researchers.

According to the conceptual framework drawn in Figure 1, all the independent variables are taken at once and run the model with one dependent variable. The independent variables are ROA, ROE, ROS, MVA, and ASPI return, and foreign purchases, foreign sales, and net foreign investments are the dependent variables. Different statistical models are used to examine the impact of firm and market performance on FPI, and the study employed the following regression equations.

$$FP = \boldsymbol{\beta_0} + \boldsymbol{\beta}_1 ROA + \boldsymbol{\beta}_2 ROE + \boldsymbol{\beta}_3 ROS + \boldsymbol{\beta}_4 MVA + \boldsymbol{\beta}_5 ASPI + \boldsymbol{\varepsilon}_{it} \ldots\ldots\ldots\ldots 1$$

$$FS = \boldsymbol{\beta_0} + \boldsymbol{\beta}_1 ROA + \boldsymbol{\beta}_2 ROE + \boldsymbol{\beta}_3 ROS + \boldsymbol{\beta}_4 MVA + \boldsymbol{\beta}_5 ASPI + \boldsymbol{\varepsilon}_{it} \ldots\ldots\ldots\ldots 2$$

$$NFI = \boldsymbol{\beta_0} + \boldsymbol{\beta}_1 ROA + \boldsymbol{\beta}_2 ROE + \boldsymbol{\beta}_3 ROS + \boldsymbol{\beta}_4 MVA + \boldsymbol{\beta}_5 ASPI + \boldsymbol{\varepsilon}_{it} \ldots\ldots\ldots 3$$

Where,

FP	= Foreign purchase
FS	= Foreign sales
NFI	= Net foreign investments
$\boldsymbol{\beta_0}$	= Constant variable
$\boldsymbol{\beta}_1$	= Coefficient of constant term
ROA	= Return on asset
ROE	= Return on equity
ROS	= Return on sales
MVA	= Market value added
ASPI	= All share price index
$\boldsymbol{\varepsilon}_{it}$	= Error term

The study used Eviews software to run the regression models. As indicated above, three regression models were employed to test the hypotheses of the study as follows.

Model 01 – Foreign purchase and firm and market performance

Model 02 – Foreign sales and firm and market performance

Model 03 – Foreign net investments and firm and market performance

The descriptive statistics and correlation analysis were completed prior to performing the regression analysis. After that, all diagnostic tests were done, including stationary, multicollinearity, and autocorrelation. Furthermore, the Hausman test was utilized to determine which regression model should be used to evaluate the panel data. The results of these tests, as well as their implications, are presented in the next section.

4. Data analysis, results and discussion

According to the descriptive statistic (Please see Table 2) calculated with raw data, NFP is negatively skewed, and all other variables are positively skewed, while except ROA and ROS, other variables are highly positively skewed because their values are greater than 1. Kurtosis is the measurement of peakness or flatness of the distribution of the series. According to the descriptive statistic, all the variables have Leptokurtic distribution due to positive kurtosis; the value is greater than 3. Once converting variables into log values, the descriptive statistics have dramatically changed, which supports the analysis of the study.

Table 2
Results of the descriptive statistics

	LOGFP	LOGFS	LOGNET	LOGMVA	LOGASPI	LOGROA	LOGROE	LOGROS
Mean	15.702	16.017	15.405	13.166	0.963	-2.806	-2.281	-2.067
Median	15.895	16.252	15.558	13.293	0.254	-2.601	-2.066	-2.125
Maximum	22.276	22.240	20.933	16.452	3.154	-0.330	0.554	1.003
Minimum	7.659	8.0640	7.2602	5.7064	-0.186	-6.725	-6.437	-6.377
Std. Dev.	2.663	2.3608	2.5929	1.5727	1.011	1.039	1.018	1.164
Skewness	-0.623	-0.5607	-0.3137	-1.0926	0.551	-1.022	-1.192	-0.308
Kurtosis	3.464	3.7611	2.9023	5.4682	1.980	4.577	5.504	4.621
Jarque-Bera	18.283	18.981	4.1663	112.29	23.323	68.958	123.598	31.105
Probability	0.000	0.000	0.1245	0.000	0.000	0.000	0.000	0.000

Source: Analysis data.

Since the study deal with panel data, the economic theory requires that variables be stationary before applying standard econometric techniques to the model. That means the data should be stationary or have no unit root before for run the regression model. Stationarity implies that the mean, variance and autocorrelation of a variable do not change with time. The unit root can be tested using Levin, Lin and Chu, Im, Pesaran and Shin, augmented Dickey-Fuller (ADF) and Fisher PP tests. The probability value of the test is less than 5%, which means that the data set is stationary, and if not, the data set is non-stationary, or the data set has a unit root. According to the results, foreign purchases, foreign sales, ROS, ROE, and ASPI were stationary at level (Appendixes 01) while NFPI, ROA, MVA were stationary at the first difference (Appendixes 02).

The study used the variance inflation factor (VIF) to examine for collinearity between independent variables and discovered that ROA and ROE have collinearity, suggesting a multicollinearity problem. Appendix 03 provides the multicollinearity results. Furthermore, based on the results of correlation analysis, it shows a 92% correlation between ROA and ROE offers 92%. This also confirms the problem of multicollinearity between ROA and ROE. Therefore, a researcher may have to drop one variable and conduct further analysis. Accordingly, the study excluded the ROE and executed the model with ROA to overcome the multicollinearity effect.

The correlation analysis depicts the correlation between the independent variables of the study. As per the results (Please refer to Appendix 04), there is a significant positive correlation between ROA and ROE. Further, there is a 63% significant moderate level positive correlation between ROS and ROE. The correlation analysis also indicates that there is a 55% significant positive relationship between ROS and ROE. The correlation between MVA and ROA and MVA and ROS show a significant weak relationship.

Subsequently, the study checked the autocorrelation. The term autocorrelation refers to a link between the present value of a data set and its previous value. The Durbin Watson value can be used to determine whether or not a series has autocorrelation. The Durbin Watson value for the model with foreign purchases as dependent variables and other independent factors is 0.77. When foreign sales took as the dependent variable and run with the independent variable, the Durbin Watson value was 0.99. When s NFPI took as the dependent variable and ran the model, the Durbin Watson value was 1.3. The calculated Durbin Watson values were higher than their standard ranges. Therefore, to ensure the models are free from autocorrelation errors, the study tested the autoregressive model with the lag values of foreign purchases, foreign sales and NFPI as the independent variables.

The study consists of panel data which comprise both time series and cross-sectional data. Before running the regression model, the researcher should test the most appropriate model for running the regression. The Hausman was used to test whether the model uses the Fixed effect model or the Random effect model. The probability of the chi-square value being less than 5% significant level cannot reject the null hypothesis and reject the alternative hypothesis, which means the fixed effect model is appropriate. Hence, the fixed-effect model is appropriate to run those three models. The results of the Hausman test is attached with Appendix 05. Additionally, the study converted variables into log values before executing the regression analysis.

According to Table 3, model one presents the impact of firm and market performance on foreign purchases. According to the above results, only MVA and ROA are significant. The goodness of fitness of the model can be measured in R- squared value. According to the results, the adjusted R- square value is 13%. This emphasizes that the explanatory power of model one is 13%. The F statistic of the model is 5.12, and it is significant at 1% level. As per model one, a one percent increase in MVA will increase 33% of foreign purchases, whereas a one percent increase in ROA will increase 48%. Model two considered foreign sales as the dependent variable and ran the regression model.

Table 3
Results of the panel regression analysis

	Model 01		Model 02		Model 03	
	Coefficient	P value	Coefficient	P value	Coefficient	P value
Intercept	12.515	0.000	12.668	0.000	11.520	0.000
LOGMVA	0.3342	0.004	0.294	0.003	0.434	0.000
LOGROA	0.4877	0.039	0.340	0.094	0.434	0.046
LOGROS	-0.2683	0.198	-0.240	0.151	-0.102	0.575
LOGASPI	-0.1251	0.109	-0.071	0.660	-0.404	0.023
Adjusted R squared	0.130		0.118		0.1507	
F statistic	5.12		3.72		4.54	
Probability(F)	0.0000		0.0000		0.0000	

Note: All three models are based on Fixed effects model
Source: Analysis data.

As per results, only ROA is significant, and other independent variables are not significant. Adjusted R- Squared of the model is 11.8%. Therefore, it can be identified that the foreign sales are explained 11.8% by the independent variables. The F statistic is 3.72, and the probability value of the F statistic is 0.0000, which reveals the model is significant at a 1% level. Model three presented the results of the impact of net foreign investments. As per the results, MVA, ASPI, and ROA are individually significant to the model. The adjusted R square of the model is 15.07%, and it denotes that net foreign investment is explained in 15.07% by the changes in selected independent variables. More importantly, model three reveals a negative impact from ASPI to the NFPI. When ASPI return increases by one percent, the NFPI will decrease by 40% and vice versa. This is significant at a 5% confidence level. The overall model is significant at a 1% level. Based on the above results, the status of the developed hypotheses are presented in Table 4.

Table 4
Summary of hypotheses testing

Hypotheses	Status
There is an impact of firm and market performance on foreign purchase	Supported
There is an impact of firm and market performance on foreign sales	Supported
There is an impact of firm and market performance on foreign net investment	Supported

Based on the above results, when considering firm performance, ROA is significant to the model, but ROS is not significant. Therefore, this indicated that the majority of the selected variables of firm performance do not impact foreign purchases of the manufacturing sector companies. Further, when considering market performance, MVA is the only significant variable to model one and two, which can be concluded that market performance impacts foreign purchases of the manufacturing sector companies. Interestingly, model three indicates that there is a negative impact on the NFPI from ASPI return. Therefore, the study can reject the null hypothesis and accept the alternative hypothesis. This means that both firm and market performance significantly impact foreign purchases in listed manufacturing sector companies CSE. When considering firm performance factors, ROS is not significant to the model. However, MVA and ROA are significant to the model. Therefore, the majority of results presented that firm performance impacts foreign sales of the manufacturing companies. ASPI return is also significant to model three. Hence it can be concluded that market performance has an impact on the NFPI of manufacturing sector companies. Finally, the researchers identified that firm and market performance significantly impacts CSE foreign sales of the listed manufacturing companies.

Therefore, it can be rejected the null hypothesis and accepted alternative hypothesis. According to output, ROS is not significant to the model. But, MVA and ROA are significant to models one and two. The ASPI return is significant to model three. Hence, it can be concluded that firm performance has an impact on NFPI on manufacturing sector companies. MVA and ASPI return used to test market performance is also significant to the models and can be concluded that market performance has a significant impact on net foreign investment. Hence, the study rejects the null hypothesis and accepts the alternative hypothesis. Most of the studies were conducted in developed countries (Haider et al., 2017). However, it is challenging to find studies about the impact of firm performance on foreign investment. Further, to the best of our knowledge, it cannot identify studies conducted with both the firm and market performance to examine the impact on foreign investment. This study fulfilled this main gap and provided a conclusion in the Sri Lankan context.

Zahirullah and Shah (2019) used stock market indices and examined any impact of market performance on foreign net investment on Pakistan. Haider et al. (2017) researched the impact of stock market performance on FPI in China. When considering previous literature (Zahirullah & Shah, 2019; Haider et al., 2017) there is a significant positive impact of market performance on foreign investment. However, Al-Smadi (2018) revealed that stock market indices have no any significant impact on foreign investment. When considering the Sri Lankan context, it is evidence that ASPI has statistically significant and long-run positive effect on foreign purchases (Kumara & Dayaratne, 2015). Further, the findings of this study are in line with the conclusions of Singhania and Saini (2017). In summary, the results revealed that MVA and ROA have a significant positive impact to foreign purchases and foreign sales whereas MVA, ROA and ASPI return significantly impact to the NFPI in the manufacturing sector companies from 2011 to 2019.

5. Conclusion

Researchers examined the impact of firm and market performance on foreign portfolio investments in the CSE from 2011 to 2019. For this purpose, we employed a panel data regression model using E views. The study used three models as three dependent variables: foreign purchases, foreign sales, and net foreign investments. Each of the dependent variables is tested by all independent variables at once. To measure the firm performance ROA, ROS were used, and to measure the market performance MVA and ASPI was used. The findings of the study evidenced that the firm performance has a significant positive impact on foreign purchases, sales, and NFPI. The market performance also has a significant positive impact on foreign purchases, sales, and NFPI. The findings have implications for the stakeholders, especially the investors, to take their cross-border investment decisions. The finding also will be benefited to the regulators to take their policy decisions. Hence, the results contribute to identifying the impact of firm and market performance on foreign portfolio investment. Besides that, these findings help especially for investors for their cross-border investment decisions.

The study has few limitations. The study considered only the listed manufacturing companies for 9 years from 2011 to 2019. Further, study used annual data, and the study is not investigating the impact of qualitative factors that may have an impact on foreign portfolio investments on listed manufacturing companies. Henceforth, the study suggests future researchers to extend the same for other sectors and to increase the time span. Moreover, future studies can be done using qualitative factors such as political stability, infrastructure as dummy variables which may affect the findings.

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Annexures

Appendix 01: Stationary at Level

Variable	Levin, Lin & Chu t*	Im, Pesaran and Shin W-stat	ADF - Fisher Chi-square	PP - Fisher Chi-square
FP	0.000	0.000	0.000	0.000
FS	0.000	0.000	0.000	0.000
ROE	0.000	0.033	0.003	0.000
ASPI	0.000	0.012	0.000	0.000
ROS	00000	0.013	0.008	0.000

Variable	Levin, Lin & Chu t*	Im, Pesaran and Shin W-stat	ADF - Fisher Chi-square	PP - Fisher Chi-square
D (NFPI)	0.000	0.000	0.000	0.000
D(ROA)	0.000	0.020	0.011	0.000
D(MVA)	0.000	0.027	0.018	0.000

Appendix 02: Stationary results

Appendix 03: Multicollinearity test

	Collinearity Statistics	
	Tolerance	VIF
LOGASPI	.995	1.005
LOGMVA	.944	1.059
LOGROA	.139	7.200
LOGROE	.159	6.291
LOGROS	.598	1.672

Appendix 04: Result of Correlation Analysis

Correlation Probability	LOGMVA	LOGROA	LOGROS	LOGASPI	LOGROE
LOGMVA	1				

LOGROA	0.229	1			
	0.0002	-----			
LOGROS	0.141	0.630	1		
	0.024	0.000	-----		
LOGASPI	0.007	-0.015	-0.045	1	
	0.901	0.809	0.473	-----	
LOGROE	0.227	0.916	0.559	-0.027	1
	0.000	0.000	0.000	0.664	-----

Appendix 05: Model selection (Hausman Test)

	FP	FS	FIN
Chi-Sq. Statistic	16.3	11.94	12.21
Chi-Square	4	4	4
Probability	0.002	0.0177	0.015

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The impact of information and communication technology usage on psychological well-being among undergraduates

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Abstract

Globalization has undoubtedly changed human lives during the era of Information and Communication Technology (ICT). ICT has become a substantial source of innovation across the globe. Though there are positive social and educational benefits of ICT use, scholars are currently attempting to identify whether ICT usage is destructive since it is related to the psychological aspects. When reviewing each research paper and other data source individually, there is a dearth of the extensive literature in pertinence with this research area in the Sri Lankan context. Therefore, this study primarily focuses on examining how the factors: smartphone usage, social media usage, Internet usage, device usage, video gaming, and television viewing influence undergraduates' psychological well-being. To achieve the proposed research objective, the quantitative research method was adopted. Primary data were gathered through self-administered structured questionnaires from the undergraduates in a state university of Sri Lanka. The SPSS package was used to analyze the collected data. Basic descriptive statistics, and stepwise regression tests were performed to determine the answer to the research questions. Consequently, the key findings revealed that social media usage, internet usage, and television viewing have a positive significant impact and video gaming has a negative significant impact on psychological well-being. However, smartphone usage and device usage have no significant impact on psychological well-being. Moreover, internet usage is the most influential factor of ICT usage which has the strongest predicting power on psychological well-being. The findings of the study would be beneficial to the university students, parents, academic and non-academic staff, social media developers, mobile applications developers, and television providers to properly respond to this emergent phenomenon.

Keywords: *ICT usage, psychological well-being, undergraduates.*

1. Introduction

Globalization has transformed human lives from the era of ICT and become an important source of innovation across the globe with involves the use of computers, the internet, emails, software, and mobile communication devices of the computer for the store, process, convert, protect, send and receive data and information (Meenakshi, 2013). ICT is developing faster and it is become a most important part of humans especially children and adolescents day to day life and technology has always been associated with them (Perbawaningsih, 2013). Young people use computers for studying, playing games, find information on the Internet and they communicate via mobile phone. ICT is a broad concept with referring communication devices, broadcast media, intelligent building management systems, and applications such as radio, television, cell phones, computers, internet, hardware, software, and more applications (Cotten, 2008).

The nature of education has changed over the last few decades and in European countries, the use of ICT has become a major part of education in the last decades (Khan et al., Khan, Din, Ismail, Khattak, & Rahimullah, 2015). Rose and Kadvekar (2015) state that the ICT adoption model is really specific to higher education academics who seek to learn, they try to make relationships with their peers to exchange new ideas and news, ask for some information, share their documents and ask for help for classroom activities. Well-being is a broad term and well-being is the experience of health, happiness, and prosperity. That content good mental health, the satisfaction of life and sense of meaning. Simply author defines well-being as humans' feeling well with better health, good connection with social life (Davis, 2019). Well-being can be defined as how a human feels and how they functioning in both personal and social life and especially how humans evaluate their lives as a whole. Well-being is not the same as happiness, it is broader than happiness. Well-being includes happiness but not only happiness (Michaelson, Mahony, & Schifferes, 2012).

Davis (2019) stated that there are main five types of well-being as emotional well-being, social well-being, workplace well-being, societal well-being, and physical well-being. Emotional well-being mean manages people stress and try to lead to good feeling. To develop these emotional skills people should have to improve their positive thinking, emotional regulations, and mindfulness. Defining social well-being is developing their communication with other people and try to alleviate human loneliness through the development of social skills such as gratitude, kindness, and communication. Third well-being is workplace well-being that is the ability to follow humans' interests and values to gain happiness in their profession. Societal well-being means that participating in community, culture, and environment actively with building skills that make people feel interconnected with all things. The fifth well-being defines by Davis (2019) is physical well-being. Physical well-being is the ability to improve the functioning of the body with healthy. To develop this well-being everyone should eat healthy food.

Turashvili and Japaridze (2012) stated that well-being is a dynamic concept with including subjective, social, and psychological dimensions and the tested relationship between psychological well-being and academic performance of students in Georgia. The result of this survey showed that lots of students who are in the middle level of well-being, not have depression and average self-evaluated academic performance. The same result showed that the students who have a medium and high level of academic performance, have a high level of well-being, the purpose of life, and personal growth. Psychological well-being depends on people controlling their feels and their day today activities. Psychological well-being problems have been increasing commonly in human life, especially among older people and Youngers. Nowadays university students have more issues related to this matter with their academic environment.

ICT helps the students to improve their performance with knowledge skills and learning skills (Wasif, Munir, & Shad, 2011). However, this occurs with a small number of undergraduates, and others use the Internet in their daily lives but not for academic purposes (Oulmaati, Ezzahri, & Samadi, 2017). Undergraduates do not use the Internet for academic purposes alone (Basri, Alandejani, & Almadani, 2018). They use the Internet for general purposes, like communication and entertainment (Mahmood, 2009). Undergraduates are not always able to take advantage of ICT and the Internet. While there are positive social and education benefits of ICT use, there is some concern about whether usage is also harmful (Berkowsky, 2012; Borzekowski 2006; Plowman, McPake, & Stephen, 2010), particularly as it related to psychology. Weerasendera (2014) mentioned that usage of ICT especially Internet made a negative impact on the mental health of the young generation in Sri Lanka and several suicides were reported due to usage of social media.

There is recently investigated research to find out the social impacts of mobile phones (Goswami & Singh, 2016) and social networks (Daffalla & Dimetry, 2014) separately. As an example, Goswami and Singh (2016) researched to examine the impact of mobile phones on younger's life and as a result, they founded that there is a negative impact of mobile phones on younger's mental and physical health. Sarwar and Soomro (2013) conducted research to investigate the impact of smartphone's on society and the researchers founded that there is a negative impact on smartphone's business, education, health, human psychology, and social life.

A key limitation of research on ICT usage on psychological well-being is the lack of published studies in this area. Although the variety of studies examine the use of different types of technologies among individuals across the life course and most of the research on the impact of ICTs on well-being has focused on the relationship between Internet usage and depressive symptomatology in young and older adults (Berkowsky, 2012). Shaw and Gant (2002), conducted research to investigate the beneficial impact of Internet usage on users. In this study, they measure depression, loneliness. Self-esteem and social support with changing their scores were tracked over time. DeRushia (2010) conducted a study to investigate the impact of internet usage on depression, social anxiety, and social engagement among college students. And found out time spent on the internet was not predictive of depression, social anxiety, or social engagement.

When going through each research paper related to this study area, founded that most of the researchers focused on different fields such as workers, drivers (O' Driscoll, Brough, Timms, & Sawang, 2010; Ndubisi & Kahraman, 2005), children (Cotton, 2008; Plowman et al., 2010) and old people (Berkowsky, 2012). There is, however, little evidence focusing on university students.When studying each research paper and other data sources separately related to this research area, the researchers found that most of the studies were done by the researchers at the international level (Cotton, 2008; O' Driscoll, et al., 2010). Therefore, it is clear now in the Sri Lankan context, there is a research gap in relevance with this research area. Therefore, to fill these gaps, this study is to examine how ICT usage influences the undergraduate's psychological well-being.

2. Literature review

New technologies have been the most important part of human life with changing and modifying people communications, works, and how to spend human's free time. ICT refers to these technologies providing access to information through telecommunications. ICT is related to Information Technology (IT), but focusing on communication technologies with including the internet, wireless networks, cell phones, and more communication devices (Christensson, 2019). The list of ICT components is exhaustive and it is growing every day with existing components, like computers, television, telephones, and new entries, such as smartphones, digital TVs, robots, and more. Software, hardware, transactions, communications technology, data, internet access, and cloud computing are components of ICT.

Kumara (2014) was surveyed to investigate the level of ICT usage by 338 new coming undergraduates to the University of Moratuwa. Selected basic computer usage, computer application, Internet/E-mail use, and use of technologies for research or academic were the ICT related activities that were used in this research. Results from this study showed that most of the new enters use computer applications such as more than 90% of the respondents have used word processing, 85.7% used spreadsheets, and 87.6% presentation package. Under Internet and email usage, more than 90% used Internet browsers such as Explorer and Mozilla, 92.9% used blogs and video websites and more than 90% used ICTs for social networking, emails, and searching information from the web. When considering skill levels of ICTs the largest percentage has rated that they are skillful in using social networking.

In 2019, gathering 102 arts undergraduates' questionnaires using the convenience sampling method, this study investigated the purpose of using ICT. From results of this study showed that 93.1% of the participants can start, use, and shut down the computer, 59.4% indicated that they can use Microsoft Word, 70.3% of respondents can create a presentation using PowerPoint and 71.3% can use either laptop, tablets, or smartphones. And 70% of the survey participants indicated they can use smartphones, laptops, or desktop computers with 76% mentioned that they use the Internet to collect information and 63% used the Internet for social networking purposes, and around half of the respondents use the internet for developing their English knowledge through internet. In this survey, they mentioned that students' use of ICT based on this evidence with 90% of students have their email accounts and 77.5% of students have their own Facebook accounts. Most of the students spend with their computers an average of 4 to 6 hours per week and close to 50% used computers in an average of 1 to 3 hours and 30% of students use their computers for 3 to 9 hours per week (Ambogama, 2019). According to the media and technology usage and attitude scale (MTUAS), independent variable ICT usage measuring includes smartphone, social media, internet, devices, video gaming, and television activities (Rosen, Whaling, Carrier, Cheever, & Rokkum, 2013).

When considering the relationship between psychological well-being and the use of smartphones among students, according to Kumcağiz and Yü (2016), there is a significant relationship between smartphone usage and psychological well-being. According to Costa, Goncalves, Pereira, and Hitipeuw (2019), there are two types of impacts because of smartphones such as positive and negative psychological well-being. As the positive impacts undergraduates can make contacts and chat with their relatives and friends through smartphones. Further, they can develop their human resources and their skills by studying using smartphones. The negative impact was the frequencies of using the smartphone for their day to day activities such as play games. This will be impacted on medical healthy of student's eyes and ears. Other negative impacts are smartphone addiction, reduce social interaction, and wasting time and money. Thus, this study proposes the following hypothesis:

H_1: Smartphone usage has a significant impact on undergraduate’s psychological well-being

Social media is a platform that helps humans to discuss their problems and their opinions and it can be defined as computer tools for share and exchange human information, ideas, photographs, videos, and so on (Lee, Ng, & Bogomolova, 2020). At present, Social media became the most important part of people day to day life activities and it changed people's lifestyles also. They use social media as a shopping tool, as an education tool, and as a business tool to promote their business by conducting marketing and advertising activities (Alalwan, 2018). People engaged with the most popular social media platforms such as Facebook, Google +, Snapchat, YouTube, and Twitter (Alalwan, 2018) for making contact with their relatives, families, and organizations easily (Siddiqui & Singh, 2016). According to Choi and Noh (2020), there are relationships between psychological well-being, social isolation, and social media usage. Social media usage is positively linked with psychological well-being and it was related to a negative attitude toward suicide. Further according to Gerson, Plagnol, and Corr (2016), there is a positive association between most famous social media, Facebook intensity, and life satisfaction and eudemonic well-being. Upadhayay (2018) researched to examine the relationships between social media usage and various aspects of psychological well-being such as anxiety, depression, self-control, positive well-being, and general health. According to the findings of this study, there are negative relationships between self-control and social media usage, as well as positive well-being. Other aspects of psychological well-being, such as anxiety, depression, and general health, have no statistically significant relationships with social media use. Thus, this study proposes another hypothesis:

H_2: Social media usage has a significant impact on undergraduate’s psychological well-being

Over the last decades, internet usage has been increased globally and it is known that more than half of the global population uses the internet for daily activities. At the end of 2019, around 4,574,150,134 internet users are available in the world and the highest presentation from that showed in Asian countries with 55.1% of the global population. 10.7% of internet users in European countries. In the Sri Lankan context, there are only nearly 120,000 internet users in 2000 and now it increased up to nearly more than a million internet users (Internet World Stats, 2020). According to DeRushia (2010) internet helps people to interact with their friends and family members but decreasing the social interaction with others in the world. Further, the researcher mentioned that time spending on the internet was not predictive of depression, social anxiety, or social engagement and indicated that there is no correlation between the type of activities related to the internet and well-being. Further, Omar, Fadzil, and Bolong (2019) conducted a research study to examine the relationship between internet usage and well-being among young people in Malaysia. It was founded that internet usage is positively impacted psychological well-being and frequency of internet usage can lead to undergraduate subjective well-being. On the other hand, Kitazawa et al. (2019) showed that there is a significant negative correlation between young people's happiness and Internet usage. They founded the low happiness group of youngers' internet usage frequency is high than the high happiness group of youngers. Based on the aforementioned statement, the following hypothesis is proposed:

H_3: Internet usage has a significant impact on undergraduate’s psychological well-being

In general, a device can be defined as a machine or a unit of hardware or equipment that is designed for a specific purpose and a computer can be considered as a device (Bauer et al., 2005). According to Rosen et al. (2013), media usage or media sharing means activities performed on devices or media especially computers. These devices have become an important part of human life in recent years, making our day-to-day tasks easier. However, computer-related activities can have negative consequences, such as human behavioral issues. Based on six published articles in this field, Reinecke and Eden (2017) address the special issue of device usage and well-being. These papers indicated that usage of devices in both positive and negative effects on well-being. As positive effects, they showed that media can role as a tool for coping with stress and help to make communication using social sharing. Risk of media exposure for well-being, social pressure, and digital stress are negative effects of media usage. Finally, Reinecke and Eden (2017) concluded that there was a significant relationship between media use and well-being and the effect of media use on well-being receive attention from disciplines such as social-psychological. Based on the aforementioned statement, the following hypothesis is proposed:

H_4: Media usage has a significant impact on undergraduate’s psychological well-being

Video gaming was correlated with psychological well-being specially absorption, depression, anxiety, and stress in men. Considering women, there is a weak correlation between anxiety and depression. The finding of the study indicated that quality of life was unrelated to video game playing in both men and women (Tolchinsky, 2013). According to Bonab (2021), video game addiction was related to psychological well-being specially depression. Heiden, Braun, Müller, and Egloff (2019) discovered recently that there is a negative correlation between video gaming and psychological functions such as psychological symptoms, affectivity, coping, and self-esteem. The results showed that there is a medium size relationship between video gameplay and poor psychological functioning, and McLean and Griffiths (2013) suggested that to examine the impact of video game usage and psychological well-being. Thus, the following hypothesis is proposed:

H_5: Internet usage has a significant impact on undergraduate's psychological well-being

Further, television viewing has been associated with young children's behavioral problems, poor attention, social isolation, sleep problems, reduced cognitive performance, and same as psychological distress. Conducting a study with 1,486 young children's parents showed that, they were spent at least three hours per day for watch television and this television viewing time is independently associated with psychological distress in this sample. A high level of television viewing interacts to increase psychological distress (Hamer, Stamatakis, & Mishra, 2009). On the other hand, Wheeler (2015) investigated to show the relationship between television viewing behavior, television affinity and relationship attachment, loneliness, depression, and psychological well-being. The investigated result indicated three opinions such as depression was significantly positively related to television viewing, loneliness had a significant positive relationship with television viewing and finally, in this study, they were not founded that any significant relationship between television viewing and psychological well-being. Thus, the following hypothesis is proposed:

H_6: Television viewing has a significant impact on undergraduate's psychological well-being

Psychological well-being is important for every university student. Surveyed to examine this matter with founded the factors that impact for it. In this survey, 131 students participated and the result of this study indicated, gender, age, support students received from their family and friends and financial well-being were the most important factors are impacted for psychological well-being (Ludban, 2015) and conducting a survey with 280 students between the age of 19 and 22 of eight private and government schools showed that gender, educational levels of parents, family income, occupation of parents and family relationships are the factors that can be impacts to the psychological well-being of students (Daraei, 2013). In other, Ismail and Shujaat (2018) conducted a study survey to examine the factors affecting the Mental Well-Being of undergraduates in Karachi using online questionnaires from 208 undergraduate students as a sample and these participants were aged between 16 and 26 years. The result of this survey showed that social support and demands of families influencing students' mental well-being and students who participated from higher socioeconomic groups and non-mainstream educational backgrounds have higher scores on stress and depression.

To measure the psychological well-being of undergraduates there are several well-being scales. Ryff (1995) is one of the previously mentioned scales for measure psychological well-being with six dimensions such as self-acceptance, positive relations with other people, autonomy, environmental mastery, purpose in life, and personal growth (Berkowsky, 2012). There are other indicators for psychological well-being that used by previous studies such as stress (Safara, Seifi, Salmabadi, & Gooshki 2020; Cotten, 2008), loneliness (Cotten 2008; Sims, Reed, & Carr, 2017), social support (Cotten 2008; DeRushia, 2010), self-esteem (Cotten 2008; Neal, Timothy, & Shelia 2015), psychological distress (Cotten, 2008), depression (Safara et al., 2020; DeRushia 2010; Neal et al., 2015), life satisfaction (Sims et al., 2017) and hopelessness (Neal et al., 2015). In this research, the researchers provide a clear and more realistic picture of the impact of ICT usage on psychological well-being among undergraduates. Well-being can be described as a state of physical, psychological, and social health as well. Psychological well-being can define by domains such as emotional experiences, cognitive evaluation, personality characteristics, identity, life experience, and human healthy (Udhayakumar & Illango, 2018). Basically, can define psychological well-being same as positive mental states such as happiness or human satisfaction (Johson, Robertson, & Cooper, 2018) and this refers to the extent people feel to control their life and their day to day activities. Psychological well-being can be measured through four dimensions such as relationship, self-esteem, purpose, and meaning of life, and optimism (Diener et al., 2010).

3. Methodology

3.1 Conceptual framework

A conceptual framework has been developed based on the literature survey for the study on the impact of ICT on psychological well-being, which is illustrated in Figure 1.

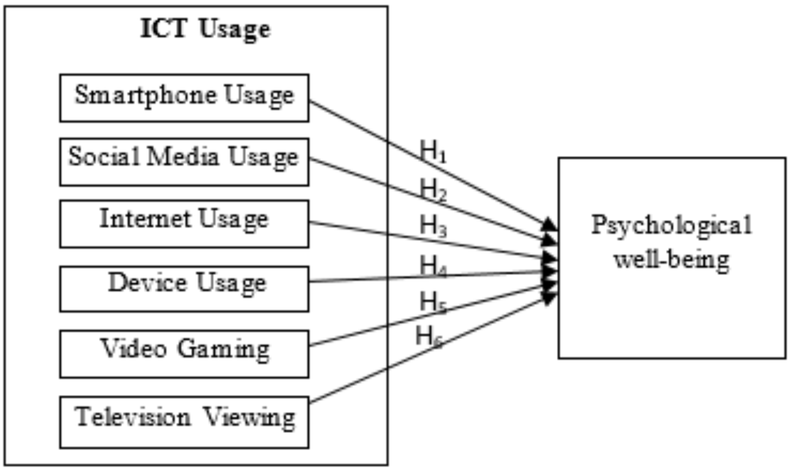

Figure 1 Conceptual framework on ICT usage and psychological well-being
Source: Developed by researchers (2020).

3.2 Research design

This study was conducted to find out the impact of ICT usage on undergraduate's psychological well-being. Accordingly, the study becomes applied research with an explanatory nature. This study has applied a quantitative research approach to meet the research objectives with a larger sample, numerical measurements which lead to quantifiable results, and collected data from individual undergraduate, online using Google form without controlling any extraneous factors affecting students' psychological well-being.

The current study investigated the impact of ICT usage on psychological well-being with special reference to a selected state university in Sri Lanka. Accordingly, the population of the study was all undergraduates who have been studied at the Rajarata University of Sri Lanka.

Table 1
Population of the study

Faculty	Students		
	Male	Female	Total
Faculty of Agriculture	148	337	485
Faculty of Applied Science	227	481	758
Faculty of Management Studies	794	1,060	1,854
Faculty of Medicine & Applied Sciences	448	815	1,263
Faculty of Social Sciences and Humanities	231	1,437	1,668
Faculty of Technology	290	224	514
Total	2,188	4,354	6,542

Source: Students' Registration Department of Rajarata University (2019).

The study used a probability sampling design, hence every student in the target population has a known probability of being selected as a respondent of the study. To represent these all groups and to reduce random sampling errors, stratified sampling techniques were used for the study in which academic year represent stratums. At a 95% confidence level based on a 5% margin of error, a population of 6,500 requires 363 samples. Therefore, a total of 400 questionnaires was distributed to the target respondents since the population is comprised of 6,542 students.

The primary surveys were conducted to obtain the needed data from the respondents and were collected physically and the first part of the questionnaire was included to collect eight demographics information of the students: gender, faculty, and year of study. The second part of the questionnaire was created to measure Smartphone usage, Social media usage, internet usage, device usage, television usage, and psychological well-being. A five-point Likert scale ranging from 1 as never to 5 as almost always is used for the measurement.

SPSS tools were used for the analysis of the primary data by using descriptive, validity, reliability analysis, and stepwise regression.

Convergent validity was tested based on the indicators since some variables in this study; video gaming and television viewing, do not comprise dimensions, but only with indicators. Therefore, the convergent validity of the indicators was tested and the component extracted value of each item was greater than 0.550 which is at an acceptable level according to Hair, Black, Babin, and Anderson (1998) and the component extracted value of buying products online (0.431) is very low showing less convergent among other indicators of the particular variable. Therefore, the study decided to remove the aforementioned indicators from future analysis. KMO values of each indicator were more than 0.5 which implies the sample was adequate to validate the test result. The study retested the convergent validity of the data set removing Buying products online.

After removing the aforesaid indicator, the component extracted value of each indicator was greater than 0.550 which is still at the accepted level according to Hair et al. (1998). KMO was greater than the value of 0.5 indicating the sample was adequate to validate the test (Hair et al., 1998). The study examined the reliability and identified that all eight variables were internally consistent. Hence, none was removed from the scale. According to the Cronbach Alpha value of each variable; smartphone usage (0.928), social media usage (0.907), Internet usage (0.912), device usage (0.770), video gaming (0.897), Television viewing (0.886), and Psychological well-being (0.934) was greater than 0.7 which indicates that the internal consistency of variables is at a good level (Sekaran & Bougie, 2019).

In the data, refining process study applied graphical methods proposed by (Osborne, 2010) to test the normality of the data set. However, graphical methods were preferred because it visualizes the distributions of random variables and is easy to interpret (Osborne, 2010). The study identifies the normality of residual and this assumption ensures that the distribution of disturbance terms will approximate normality. According to the Shapiro Wilk test for residuals can support residuals in a normal pattern. Further, the Histogram residual shows a normal pattern.

4. Data analysis

A total of 400 questionnaires were administered among undergraduates in Rajarata University of Sri Lanka out of which 387 were returned resulting in the 96.75 % of response rate which is considered highly adequate.

4.1 Demographic profile of the sample

Table 2
Demographic Profile of undergraduates

Variable	No. of Respondents	Percentage (%)
Gender		
Male	139	36
Female	247	64
Faculty		
Agriculture	31	8
Applied Science	47	12.2
Management Studies	110	28.5
Medical and Allied Science	79	20.5
Social Sciences and Humanities	92	23.8
Technology	27	7
Academic Year		
First Year	31	8
Second Year	174	45.1
Third Year	109	28.2
Fourth Year	72	18.7

Source: Survey data (2020).

Out of 386 participants of this study, 36% are male participants and 64% are female. Accordingly, six faculties of the university responded as 8% from Faculty of Agriculture, 12.2% from Faculty of Applied Science, 28.5% from Faculty of Management Studies, 20.5% from Medical and Allied Science, 23.8% from Faculty of Social Science and Humanities, and 7% from Faculty of Technology. The majority of the participants of this study were Second year students which are 45.1% as a percentage of the total participants and 8% represented the first year students of the university.

4.2 Descriptive analysis

Descriptive statistics were used to explain the prevailing situation of the variables. According to mean values for the Psychological well-being, Smartphone usage, and Internet usage were 3.858, 3.977, and 3.907 respectively and they were in the higher agreement level of the respondents. Mean values of Social media usage (3.524), device usage (3.496), and Television viewing (3.022) indicated that the participants of the study have moderately agreement. Standard deviations for the variables were 0.7449, 0.682, 0.706, 0.797, 1.083, and 0.960 and the Standard deviation of all variables were low and it reveals that there are considerable low variations among the undergraduates on their psychological well-being. Further, skewness and Kurtosis values were in the range of between +1.94 and -1.94 after being divided by the standard error of each indicating a little skewness of the data distribution.

4.3 Regression analysis

Stepwise regression analysis was conducted to test the hypothesis. Consequently, four models under four steps were generated through the SPSS. At the first step, model one was developed automatically by the SPSS utilizing the most significant predictor; the independent variable.

Table 3
Regression model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin Watson
					R Square change	F change	df1	df2	Sig. F Change	
1	0.577[a]	0.332	0.331	0.542	0.332	131.177	1	384	0.000	2.048
2	0.607[b]	0.368	0.365	0.528	0.036	21.616	1	383	0.000	
3	0.621[c]	0.385	0.381	0.521	0.017	10.816	1	382	0.001	
4	0.626[d]	0.392	0.385	0.519	0.006	3.961	1	381	0. 047	

Predictors: (Constant), Internet usage
Predictors: (Constant), Internet usage, Television viewing
Predictors: (Constant), Internet usage, Television viewing, Social media usage
Predictors: (Constant), Internet usage, Television viewing, Social media usage, Video gaming
Dependent variable: Psychological well-being

Source: Survey data (2020).

According to model summary Table 3, the R2 value of the third model was 0.392. It highlighted that when other factors are constant, these four independent variables; Internet usage, Television viewing, Social media usage, and Video gaming explain 39.2% variation of psychological well-being. After adding video gaming to the model, R2 was increased by 0.006 and reduced F value by 3.961. The change of F value was significant at 0.05 level.

Table 4
ANOVA table

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	56.236	1	56.236	191.177	0.000[b]
	Residual	112.956	384	0.294		
	Total	169.192	385			
2	Regression	62.270	2	31.135	111.529	0.000[c]
	Residual	106.921	383	0.279		
	Total	169.192	385			
3	Regression	65.214	3	21.738	79.864	0.000[d]
	Residual	103.977	382	0.272		
	Total	169.192	385			
4	Regression	66.284	4	16.571	61.352	0.000[e]
	Residual	102.907	381	0.270		
	Total	169.192	385			

Dependent variable: Psychological well-being
Predictors: (Constant), Internet usage
Predictors: (Constant), Internet usage, Television viewing
Predictors: (Constant), Internet usage, Television viewing, Social media usage
Predictors: (Constant), Internet usage, Television viewing, Social media usage, Video gaming

Source: Survey data (2020).

According to Table 4, significant value of the ANOVA test was 0.000. It was less than the 0.05 standard level. It indicated that the regression coefficient of Internet usage, Television viewing, social media usage, and video gaming was not equal to zero. Hence, the model is strong enough to predict psychological well-being.

The stepwise regression excluded the variable smartphone usage and device usage from the model due to the insignificant explanatory power of the respective variables. Hence, stepwise regression was limited to only four variables; Internet usage, Television viewing, social media usage, and video gaming. Table 5, indicates the result of the fourth regression model fitted by stepwise regression test.

Table 5
Regression coefficient table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
4	(Constant)	1.321	0.171		7.729	0.000		
	Internet usage	0.437	0.045	0.466	9.760	0.000	0.701	1.427
	Television viewing	0.120	0.029	0.174	4.107	0.000	0.893	1.120
	Social media usage	0.166	0.048	0.171	3.477	0.001	0.658	1.520
	Video gaming	(0.050)	0.025	(0.082)	(1.990)	0.047	0.934	1.071
Excluded Variables								
4	Smartphone usage	0.028			0.516	0.606	0.527	1.897
	Device usage	0.089			1.676	0.095	0.559	1.790

Source: Survey data (2020).

The interpreted results of the hypotheses tested based on stepwise regression analysis are as follows;

H_1: Smartphone usage has a significant impact on undergraduates' psychological well-being

According to the stepwise regression coefficient Table 5, the regression coefficient of Smartphone usage was 0.028. It indicated a positive impact of smartphone usage on psychological well-being but the respective significant value was 0.606 which is above the standard level (0.05). Hence, the impact of smartphone usage on psychological well-being was statistically insignificant at 0.05 level. Therefore, smartphone usage has no significant impact on undergraduates' psychological well-being. Resulting, stepwise regression excluded the variable from the model. Therefore, it can be concluded that smartphone usage among undergraduates does not affect their psychological well-being.

H_2: Social media usage has a significant impact on undergraduates' psychological well-being

According to Table 5, the regression coefficient of Social media usage was 0.166. It indicates a positive impact of social media usage on undergraduate psychological well-being. Since the sig value of the test was 0.001, the hypothesis was accepted; Social media usage has a significant impact on undergraduates' psychological well-being. That means, there is a positive effect of social media usage on students' psychological well-being statistically at 0.05 significant level. The result further indicated that the change of social media usage by one percent will lead to a change in the psychological well-being of undergraduates by 16.6% (0.166).

H_3: Internet usage has a significant impact on undergraduates' psychological well-being

Table 5, shows the regression coefficient of Internet usage was 0.437. It indicates a positive impact of internet usage on psychological well-being. The significant value of the test was 0.000. Thus, the third hypothesis was accepted. Accordingly, the positive effect of internet usage on psychological well-being was statistically significant at 0.05 level. Based on the result, it can be concluded that the change of Internet usage by one percent will lead to a change of psychological well-being of undergraduates by 43.7%.

H_4: Device usage has a significant impact on undergraduates' psychological well-being

According to the stepwise regression coefficient Table 5, the regression coefficient of device usage was 0.089. It indicated a positive impact of device usage on psychological well-being but the respective sig. value was 0.095 which is above the standard level (0.05). Hence, the impact of device usage on psychological well-being was statistically insignificant at 0.05 level. Therefore, device usage has no significant impact on undergraduate psychological well-being. Resulting, stepwise regression excluded the variable from the model. Therefore, it can be concluded that device usage among undergraduates does not affect their psychological well-being.

H_5: Video gaming has a significant impact on undergraduates' psychological well-being

Table 5, shows the regression coefficient of video gaming was -0.050. It indicates a negative impact of Video gaming on psychological well-being. The significant value of the test was 0.047. Therefore, the hypothesis; video gaming has a significant impact on undergraduates' psychological well-being was accepted. Accordingly, the negative effect of video gaming on psychological well-being was statistically significant at 0.05 level.

H_6: Television viewing has a significant impact on undergraduates' psychological well-being

Table 5, shows the regression coefficient of Television viewing was 0.120. It indicates a positive impact of Television viewing on psychological well-being. The significant value of the test was 0.000. Consequently the sixth hypothesis was accepted. Accordingly, the positive effect of Television viewing on psychological well-being was statistically significant at 0.05 level. Based on the result it can be concluded that the change of Television viewing by one percent will lead to a change of psychological well-being of undergraduates by 12%.

The psychological well-being of undergraduates was affected by social media usage, internet usage, video gaming, and television viewing significantly. The study further identified that the impact of smartphone usage and device usage was statistically insignificant at the 0.05 level. Accordingly, the study derived a regression formula to measure the impact of ICT usage on psychological well-being as follows.

$$Y = \beta + \beta_1 * IU + \beta_2 * SMU + \beta_3 * VG + \beta_4 * TV$$

$$Y = 1.321 + 0.432 * IU + 0.166 * SMU - 0.05 * VG + 0.120 * TV$$

Y	-	Psychological well-being
B	-	Constant
IU	-	Internet usage
SMU	-	Social media usage
VG	-	Video gaming
TV	-	Television viewing

According to the formula, it could be identified that the impact of Internet usage on the psychological well-being of undergraduates was higher than the impact of Social media usage, video gaming, and Television viewing. Therefore, Internet usage is identified as the greatest explanatory variable of the study.

5. Discussion of the result

The first research objective was to determine the main factors of ICT usage that may influence Undergraduates' psychological well-being. Six factors of ICT usage have been identified based on the literature survey: smartphone usage, social media usage, internet usage, device usage, video gaming, and television viewing. Psychological well-being can be measured through four dimensions such as relationship, self-esteem, purpose, and meaning of life, and optimism.

Consequently, the first hypothesis proposed was that smartphone use has a significant impact on undergraduates' psychological well-being, as measured by thirteen indicators. The impact of smartphone usage on psychological well-being was statistically insignificant at the 0.05 level, according to the regression. This result, however, contradicts the previous findings. The study conducted by Silva (2012) founded a negative significant impact of smartphone usage on psychological well-being which is consistent with the other studies of the same (Sumathi, Lakshmi, & Kundhavai, 2018; Kumcağiz & Yü, 2016; Costa et al., 2019; Horwood & Anglim, 2019). According to Costa et al. (2019), there are two types of impacts of smartphones on psychological well-being, negative and positive. As positive impacts, they can make contacts and chat with their relatives and friends. Smartphone addiction, reduce social interaction, wasting time, and money are identified as negative impacts. But smartphones became the most important part of undergraduate and they use smartphones for their day-to-day activities. According to Silva (2012), smartphone users in Sri Lanka have been increasing rapidly in major cities as same as rural areas with the availability of networks and could not live without smartphones. However, in the University context, the impact of smartphone usage on the psychological well-being of undergraduates was statistically insignificant.

The second hypothesis focused on determining the impact of social media usage on psychological well-being, as measured by thirteen indicators. At the 0.05 level, the regression result revealed a statistically significant positive effect of social media usage on psychological well-being. The findings of the study positively aligned with the result of Chen and Li (2017) and Gerson et al. (2016). But, Choi and Noh (2020) and Upadhayay (2018) are indicated that there can have positive and negative relationships between psychological well-being and social media usage. In this context identified there are the positive and significant impacts of social media usage on psychological well-being. The use of social media allows people to stay in touch with friends and family, share ideas and opinions, and increase social capital and social support.

The third hypothesis of this study, measured by eight indicators, was to determine the impact of Internet usage on psychological well-being. The impact of internet usage on psychological well-being was statistically significant at the 0.01 level, confirming that internet usage has a positive impact on psychological well-being. In this study, the most powerful variable determining psychological well-being is internet usage. The finding of the study positively aligned with the result of Omar et al. (2019) but not matched with DeRushia (2010) and Kitazawa et al. (2019). One of the most important factors that undergraduates should be concerned about is Internet usage. Internet usage allows people to interact with others and can be used for academic purposes. Similarly, it has a negative impact on undergraduates' psychological well-being, such as depression, anxiety, and other factors associated with internet addiction.

The fourth hypothesis was to identify the impact of device usage on psychological well-being which was measured through four indicators. The findings of the study are not associated with the findings of Reinecke and Eden (2017). Devices became the major part of human life these days and it makes people day to day works easier. Further, they indicated that usage of devices in both positive and negative effects on well-being. As a positive effect, they demonstrated that media can be used as a tool for stress management and to facilitate communication through social sharing. The risk of media exposure for well-being, social pressure, and digital stress are negative effects of media usage. Finally, Reinecke and Eden (2017) concluded that there was a significant relationship between media use and well-being. However, in the University context, the impact of device usage on the psychological well-being of undergraduates was statistically insignificant.

The fifth hypothesis was to identify the impact of video gaming on psychological well-being which was measured through three indicators. According to the regression analysis, the impact of video gaming on psychological well-being was statistically negative and significant at 0.05 in this study. These video games popular activities among young people nowadays. But several studies indicated that these activities involve human psychological problems. The finding of this study positively related to Pappa, Apergi, Ventouratou, and Janikian (2016) and Mathers et al. (2009). All these researches indicated that there is a negative correlation between video gaming and psychological well-being with decreased psychological well-being.

The sixth and final hypothesis sought to determine the impact of television viewing on undergraduate psychological well-being, as measured by five indicators. The regression test demonstrates that watching television has a positive impact on psychological well-being and is statistically significant at the 0.05 level. Television viewing aids in the sharing of experiences with others, the development of socialization and learning skills, the knowledge of current events, news, and historical programming, the development of critical thinking about society, and so on. However, this result is associated to the previous findings of Hamer et al. (2009) and Wheeler (2015). These researchers indicated that, television viewing has been associated with young children behavioral problems, poor attention, social isolation, sleep problems, reduced cognitive performance, and same as psychological distress, and psychological well-being.

Furthermore, the study identified the most influential factor of undergraduates' psychological well-being. A stepwise regression test was used to ensure this. According to the regression coefficient Table 05, internet usage was the most influential variable, accounting for 43.2% of the variation in psychological well-being.

6. Conclusion

In conclusion, the primary objective of determining the impact of ICT usage factors on psychological well-being among undergraduates has been fulfilled. Six factors were identified: smartphone usage, social media usage, internet usage, device usage, video gaming, and television viewing was the first objective of the study. The findings revealed that social media usage, internet usage, video gaming, and television viewing have a significant impact on psychological well-being. Meanwhile, smartphone usage and device usage have no significant impact on psychological well-being. Furthermore, Internet usage is the most influential factor of ICT usage, with the strongest predictive power on psychological well-being. Understanding the impact of these four factors and managing them appropriately by the relevant authorities: university students, academic and non-academic staff, social media developers, and so forth, is pivotal. As a result, it is recommended to develop good social media networks for undergraduates with some specialized features. Furthermore, it is recommended that university administration develop policies that encourage innovative usage of social media for educational purposes, such as group work, group discussions, and some group projects. Besides, university administration and government can establish better technological infrastructure to improve students' Internet usage, and government can implement policies and programs to shift people's attitudes toward Internet usage in a positive direction.

7. Limitation and future research

It is recommended that future researchers identify and consider other aspects of ICT usage that are not covered in this study but are worthy of investigation. This study's R2 value was

0.392, indicating that more factors can be investigated to better explain undergraduates' psychological well-being. As a result, future research can be conducted to investigate these other factors to gain a better understanding of psychological well-being. The research was limited to a single Sri Lankan state university. However, in the Sri Lankan context, there are seventeen state universities spread across the country. As a result, it is recommended that the study be conducted with a focus on all the state universities in Sri Lanka. Another flaw in this study is that males responded at a lower rate than females. As a result, the findings regarding ICT usage frequencies may not be nationally representative. Future research in this area should broaden the population of study to include all the state universities in Sri Lanka.

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Contents

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