

Volume 4

Issue 1

Fall 2020

Westcliff International
Journal of Applied Research

WIJAR



WIJAR

NOVEMBER 2020

ISSN 2572-7176

wjournal@westcliff.edu

Westcliff International **Journal of Applied Research**

Volume 4 - Issue 1 - Fall 2020

OPEN-ACCESS • MULTIDISCIPLINARY

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ABOUT WIJAR

Westcliff International Journal of Applied Research (WIJAR) is a multidisciplinary, double-blind peer-reviewed, open access journal pioneered by the faculty at Westcliff University. The journal was founded in 2017 and provides an opportunity for students, academics, and industry professionals to publish innovative research that offers insight into practical implementation. In order to widely disseminate new knowledge and scholarship, WIJAR advocates for all submissions to be written in a style that is accessible/available to a broad audience or readership, including those readers who may not be familiar with either research or the topic studied. The journal aligns with Westcliff University's mission to educate, inspire, and empower individuals through its dedication to supporting authors in the review and revision process to produce the highest quality content possible.

Distinguishing this journal from others similar is the strong support offered to contributors, especially first-time authors who may need additional writing or structural assistance. All contributors have access to the Westcliff University Online Writing Center where dedicated research/writing specialists are able to offer support and suggestions.

Published by: Westcliff University, 17877 Von Karman Ave #400, Irvine, CA 9261
Tel: 888-491-8686 | Fax: 888-409-7306
<http://wjar.westcliff.edu> | wjournal@westcliff.edu

LETTER FROM THE EDITOR-IN-CHIEF

In my first year as Editor-in-Chief for the Westcliff International Journal of Applied Research, I have been inspired by the individuals I have been able to work alongside, the authors who put so much intention and dedication into their work, and the way in which the academic community as a whole perpetually strives to find new connections and ways of contributing to growth and change. I would humbly like to thank Dr. Jannette E. Flores, the founder of WIJAR, for her guidance and continual support within this new role, and Dr. Evelín Suij-Ojeda, the Associate Editor, for her consistent and perpetual assistance throughout the process of publication. This journal, and the development and growth of it, is truly a team effort.

On behalf of the WIJAR editorial board, we hope that you enjoy this issue. We are grateful for the contribution that each of the authors has made to the field of academia and are proud to publish their work. May these contributions inspire depth of thought and consideration of publication in future WIJAR issues.

Christa L. Bixby
Editor-in-Chief

ACKNOWLEDGEMENTS

The publication of Westcliff International Journal of Applied Research cannot happen without the contribution of many dedicated individuals. On behalf of the journal, we would like to thank:

Dr. Tu Do, for the immense amount of effort he spent in formatting and compiling this journal. It is due to his talent and time that we are able to have such a well-constructed and visually appealing publication.

Dr. Anthony Lee and Dr. David McKinney, for their perpetual support of the journal and belief in the value it possesses for Westcliff University and the wider field of academia.

The WIJAR editorial board, internal review board, and external review board members. Each member has been dedicated to engaging in the process of review to evaluate and select quality research articles.

The Westcliff University Marketing Department, specifically Sophie Bertucci and Henry Nguyen, for their contributions to the development of the journal's website, marketing of information regarding the journal, and overall involvement in the success of this publication.

The Westcliff University Writing Center, for their collaboration and support of each author in the process of review and revisions.

Last, but definitely not least, each of the authors who have put in the time and effort to contribute their ideas and insights in this publication. We are honored to share your work.

DEDICATION

The 2020 publication of WIJAR is dedicated to a man who believed in education, in the value of research, and the perpetual dissemination of knowledge. This journal exists because of his dedication and persistence. Dr. McKinney, may this perpetually be a small part of how your legacy will live on.

Discussion and Implications for Practice: Women Student Veterans and their Sense of Identity, Belonging, and Voice in Writing Courses and through Writing Assignments

Mary Christine Broding

ABSTRACT

Given the lack of published research on women student veterans as a group separate from men student veterans and the unique needs of women student veterans, individual attention needs to be paid to women student veterans. This qualitative study used feminist critical theory to examine the experiences of women student veterans during their transition process from the military to higher education regarding identity, belonging, and voice in connection with writing courses and writing assignments. Real-time in-depth narrative interviews were conducted with seven current or former women student veterans located across the United States. Analysis of the interviews revealed superordinate themes. These three superordinate themes were 1) military influence: lifestyle transition, identity, and writing; 2) peer connections in writing courses; and 3) writing instructor influence. The findings informed by the superordinate themes included women student veterans sometimes have difficulty transitioning from military writing to academic writing, women student veterans need peer connections in the writing classroom, and writing instructors hold much influence over belonging and voice for women student veterans. These findings led to three recommendations for future practice. The first recommendation was that writing workshops focusing on the differences between military writing and academic writing should be held for women student veterans by individual colleges and universities. The second recommendation was colleges and universities can establish and maintain writing groups for women student veterans in which they write and share narratives and poetry reflective of their military and other life experiences. The third recommendation was writing instructors should be trained on providing women student veterans with individualized attention and supportive feedback.

Keywords: women student veterans, writing courses, identity, belonging, voice

The purpose of this study was to contribute to current literature on women student veterans and to consider the role writing courses and assignments played in women student veterans' transition process from the military into higher education. The study's research question was what do women student veterans' experiences with writing assignments within college writing courses throughout their transition process from the military into higher education reveal about identity, belonging, and voice? Feminist critical theory, enabling transformative political action and social change (Gannon & Davies, 2014), was chosen as the theoretical framework for this study. Practitioners of feminist critical theory interpret social life and seek to transform it (Gannon & Davies, 2014). Additionally, these practitioners are committed to practical action for change regarding justice

(Canaday, 2003). The tenets of feminist critical theory are: 1) seeking to interpret social life, 2) transforming social life, and 3) basing transformation on both subjectivity and choice (Gannon & Davies, 2014). The first tenet directly applied to this study as the researcher sought to interpret the social life of women student veterans connected with writing assignments in writing courses. The importance of validating the voices of women student veterans in story form led to the selection of narrative inquiry as the methodology. Narrative inquiry is defined as an approach that focuses on stories and the meaning that can be derived from the narrator's organization and connection of elements (Chase, 2011; McGannon & Smith, 2015).

Women student veterans who graduated or were enrolled in a college or university at the time of the study were recruited for participation

as a purposeful sample. Seven women student veterans were chosen based upon the researcher's knowledge of their background and their rapport with the researcher. The number of participants was purposefully kept small to give adequate focus to the experiences of these women student veterans (Chase, 2011; Langum & Sullivan, 2018). The researcher sought out study participants based upon specific criteria to meet the needs of the study (Creswell, 2013). The criteria included the following: 1) be a woman, 2) have previously served in a branch of the United States armed services, and 3) be a former or a current student veteran at a two- or four-year college or university in the United States. Information related to the experiences of study participants was gathered through interviews and field notes in order to capture and describe the potential correlation between writing courses and writing assignments in higher education and the identity, belonging, and voice of these women student veterans during their transition process from the military to higher education.

The narratives recounted by the participants in this study were prompted by interview questions based on invitational rhetoric. Invitational rhetoric is meant to establish an equitable relationship between the rhetor and the audience with the audience being invited to participate in the rhetor's dialogue (Griffin & Foss; Ryan & Natale, 2001). The analysis of the data revealed three superordinate themes and seven subordinate themes. The first superordinate theme was military influence: lifestyle transition, identity, and writing. Three subordinate themes emerged from this superordinate theme: 1) military influence on lifestyle transition, 2) military influence on identity, and 3) military influence on writing. The second superordinate theme was peer connections in writing courses. Two subordinate themes emerged from this superordinate theme: 1) disconnection from writing course peers and 2) comfort with writing course peers. The third superordinate theme was writing instructor influence. Two subordinate themes emerged from this superordinate theme: 1) positive writing instructor influence and 2) negative writing instructor influence.

These themes were analyzed and led to three central findings. The first finding was that women student veterans have difficulty transitioning from military writing to academic writing regarding person, vocabulary, and style. According to Carlos Enriquez, a retired U.S. Naval Chief who is currently serving as the site director for Vincennes University's Military Education Program at the Naval Medical Center San Diego, when it comes to person, military writing is typically written in the third person mainly for performance evaluations and communication within and across military departments and civilian partnerships (personal communication, October 23, 2020). Vocabulary in military writing is often made up of military-specific acronyms and ranks, explained research study participant Eowyn. Enriquez also pointed out that younger soldiers often find themselves having to flesh out performance evaluations with details they find unnecessary in order to meet the character length requirement. Since these younger soldiers have limited experience, they have to elaborate on what experience they do have to meet this length. Military writing can be qualified as business writing, Enriquez explained; military writing is concise and includes bullet points much of the time.

The second and third findings were that women student veterans need a support system within the writing classroom and in higher education in general and that women student veterans' writing classroom experience was influenced by their writing instructors. As discussed below, these three findings align with the experiences of the study participants and the literature, along with informing suggested practices and their implementation at colleges and universities for better supported women student veterans when writing and in the writing classroom.

Classroom Practice

The first finding indicated that women student veterans sometimes have difficulty transitioning from military writing to academic writing, especially with difference in person (third versus first), vocabulary (military-specific jargon versus academic jargon), and style (blunt versus theoretical). This finding connected directly with

subordinate theme military influence on writing and the need for women student veterans to be able to express their voice through writing in higher education.

The three participants who had difficulty transitioning from military writing to academic writing were Rachel, Michelle, and Karen. Rachel found it hard to transition from using the third person in military writing to using the first person in her required narrative academic writing. Michelle had trouble transitioning from using nonessential vocabulary in military writing to only essential vocabulary in academic writing. Michelle explained that in the military, “I use filler words, instead of using actual words, cause that’s all you put in evaluations that you write every year: just a bunch of fluff...just so you can make it like a paragraph and sound good.” This led to Michelle struggling with writing in college, as she was initially unaware of the differing vocabulary expectations (jargon and details perceived as only necessary to meet a length requirement in a performance evaluation) between military and academic writing. Michelle pointed out, “But, in college, they don’t want that...I didn’t do good at all whatsoever.” Karen experienced frustration over transitioning from the direct and concise writing style of the military to the theoretical academic writing style of qualitative doctoral studies. She revealed, “I don’t know if the military kind of molded me as far as being more blunt and direct in answering things, instead of for a Ph.D.” Finding certain aspects of the doctorate-level writing troublesome, Karen discovered that “the philosophical points [were] a little more challenging,” and that she had to “really...stretch and go out of my comfort zone to reach and write for qualitative.” These difficulties affected the ability of Rachel, Michelle, and Karen to confidently express their voices in academic writing.

The experiences of these participants coincided with the literature regarding student veterans failing to recognize the importance of their professional writing training and experiences in the military, as noted by both Hinton (2014) and Hadlock and Doe (2014). In addition, Hadlock and Doe (2014) explained that despite this failure to view their military professional writing training as important, many

student veterans did receive such training in the military. The finding that some women student veterans in this study had difficulty transitioning from military writing to academic writing aligned with feminist critical theory. Based upon the second major tenet of feminist critical theory, the lives of women student veterans can be transformed in a way that eases the difficulties of transitioning from military writing to academic writing (Gannon & Davies, 2012). This also coincided with explanation by Boler (2000) of feminist critical theory’s emphasis on actual change through research efforts. While the first finding addressed women student veterans’ difficulty transitioning between military writing and academic writing, the second finding identified their need for peer connections in the writing classroom.

The second finding revealed that women student veterans need peer connections in the writing classroom, which can be facilitated through productive group interactions such as peer reviews. This finding coincided with the superordinate theme of peer connections in writing courses, particularly the subordinate theme of disconnection from writing course peers; additionally, it coincided with women student veterans’ sense of belonging in writing courses.

The two participants who experienced disconnection from writing course peers and lacked a sense of belonging in their writing course(s) were Eowyn and Jasmine. Eowyn felt a disconnection from her writing course peers due to an unproductive peer review, in which she received little feedback on her writing. “During peer review” sessions in her writing classes, Eowyn “didn’t want to overwhelm whoever I was working with,” and “I didn’t really get a lot of feedback that was helpful for me.” Jasmine experienced a disconnection from her writing course peers when she wrote on a subject she perceived as emotionally deeper than that of her peers; the subjects were revealed in peer review sessions. She explained that she wrote “these...like deeper things” than her peers, who “would be writing about like apple pie.” Reading her poetry and other written work out loud in class was uncomfortable for Jasmine, adding to her sense of a lack of belonging. Jasmine stated, “We

would have to read our stuff out loud. I would feel embarrassed because I had maybe taken the assignments way too seriously. I didn't feel connected with any of these students." These feelings of disconnection from their writing course peers led Eowyn and Jasmine to sense a lack of belonging.

Moreover, this finding aligned with the literature on reasons for student veterans feeling a disconnection from course peers. According to Wheeler (2012), student veterans' lack of a sense of belonging often stemmed from difficulty relating to younger peers – particularly two years plus – who lacked military experience. Furthermore, Kato et al. (2016) found that student veterans had trouble cultivating and maintaining relationships with their peers lacking military experience. The finding that women student veterans need to be able to relate to their peers in writing courses is situated alongside feminist critical theory. Aligning with the second major tenet of feminist critical theory, women student veterans' sense of belonging in the writing classroom can be transformed by finding shared experiences and values with their peers based upon a sense of belonging in their writing courses (Gannon & Davies, 2012). The ability for this sense of belonging to be transformed in the writing classroom connects with Benhabib's (1995) description of feminist critical theorists basing necessary change on idealistic principles. Belonging was not only connected to peers in college or university writing courses but also to writing instructors and their influence over belonging and voice.

The third finding suggested that writing instructors held much influence over women student veterans' sense of belonging and voice. This finding connected with the superordinate theme of writing instructor influence, especially when writing instructors were unsupportive of women student veterans through a lack of attention or feedback.

The two participants who felt negative writing instructor influence were Karen and Jasmine. Karen experienced a lack of consensus on the feedback from her dissertation committee, which led her to feel a lack of belonging and a stifling of her voice. Karen was left with "one

professor" saying "that is great, move forward," and "another professor would say, no, no, that is not good. Let's do this." This made Karen feel that her voice was being negatively affected during this experience. She explained that "it [sense of voice] was almost squashed or quelled...because I was trying to write a certain way, or I was trying to say what my study findings or my participants were saying in the way I interpreted it," but her dissertation committee members were directing her voice "into what they wanted to say, what they wanted to communicate in the study." Jasmine found some writing instructors to be inattentive when she asked for help as well as a lack of supportive feedback on her writing assignments. Jasmine said, she had instructors "who were like, oh, okay," when she asked for help. This was an acknowledgement of her need for help, but it did not go past that. This led to a feeling of not belonging and a need to suppress her authentic voice. Jasmine felt isolated by some of the grade comments she received on her work, poetry in particular. These instructor comments included "deep," "wow," and "really?" This led to her questioning the topics of some of her writing assignments. Jasmine shared that "It felt like a lot of the time maybe I should be faking what I'm writing." This caused Jasmine to feel that she did not belong and a lack of confidence in expressing her authentic voice through writing.

The literature supported this finding by reinforcing the effects writing instructor influence can have over belonging and voice for women student veterans. As explained by Wood (2014), a negative experience in the classroom can promote feelings of being unsafe and unsupported; thus, a positive environment must be modeled by the instructor. Additionally, according to Pellegrino and Hoggan (2015), the relationship between faculty and women student veterans is important to the success of these students so it must be cultivated by the course instructor. This finding of writing instructor influence over belonging and voice coincided with feminist critical theory. The third major tenet of feminist critical theory, subjectivity of transformation, connected with the influence writing instructors can have over women student veterans' belonging and voice (Gannon & Davies,

2012). The need for women student veterans to have a strong sense of belonging and voice in the writing classroom overlapped with Gannon and Davies' (2012) explanation of the desire of feminist critical theorists to emancipate groups lacking power and facing oppression. Overall, the literature and the study findings aligned with the important role writing instructors play in providing a sense of belonging and enhancing confidence in expressing voice for women student veterans in writing classrooms.

Suggested Practice

The following three practices are suggested to address the transition from military to academic writing, to create effective peer connections, and to enhance the sense of voice and belonging in women student veterans participating in writing courses.

First, writing workshops for women student veterans initially transitioning from the military into higher education should be facilitated by individual colleges and universities. These writing workshops can address the differences between military writing and academic writing to show women student veterans how to navigate the transition between the two. Helping women student veterans be empowered to successfully transition between the two styles of writing at the onset of their college or university studies links with feminist critical theory's goal. According to Gannon and Davies (2012), of emancipating groups lacking power and feeling oppression by providing them with the knowledge of writing skills and potentially increased confidence to use those writing skills to take back power and express their voice through the written word.

Second, colleges and universities can establish and maintain writing groups for women student veterans in which they write and share narratives and poetry reflective of their military and other life experiences. Leonhardy (2009) found that student veterans were typically invested in writing narratives about their military experiences. The expressive nature of narratives and poetry can allow women student veterans in college and university writing groups to be invested in the writing process and reap the benefits of sharing the emotions affiliated with

their experiences in a safe and supportive peer environment. Nevinski (2013) discovered that veterans producing and sharing expressive writing in a writing group promoted better understanding between peers. Moreover, Sayer et al. (2015) noted how expressive writing, in an online study, benefitted veterans in lessening their levels of anger and distress. Deschpande (2010) found that a writing group focused on poetry held at a veteran center with veteran participants benefitted the participants in emotional control and self-acceptance. The reflective nature of expressive writing and the benefits it brings connect with what Benhabib (1995) identified as the reflectiveness of feminist critical theory in individuals acting as change agents. Change can occur for individual women student veterans as well as the group in these college and university writing groups. Beyond the subjects and types of writing in these college and university writing groups, women student veterans can benefit from how the writing groups are run and what happens to the writing produced within the groups. Schell and Kleinbart (2014), for example, started their Syracuse Veterans' Writing Group by focusing mainly on the positive aspects of veterans' narratives and keeping copies of writing in the hands of the authors, allowing for a focus on written content. The group ultimately led to the formation of a community of multi-generation veteran writers. The same sort of community was built through the library veterans' writing group established and ran by Hartman and Baumgartner (2011). Sometimes, the writing produced within these veterans' writing groups is grouped together into a collection and published. That is what happened with the writing produced in Springsteen's (2014) chapter of the Warrior Writers Project. The benefits of expressive writing and community building could be carried over into college and university women student veterans' writing groups, with the potential for publication of writing produced within the groups.

Third, writing instructors need to be trained on providing women student veterans with individualized attention and supportive feedback. By aiming to be agents of change for women student veterans in their writing courses, writing instructors would need to align themselves with

the feminist critical theory by relying upon the idealistic principle of helping women student veterans to necessitate transformative change through individualized attention and supportive feedback (Benhabib, 1995).

Implementation

These three suggested practices can be implemented by colleges and universities to better support women student veterans with and through writing. In terms of implementing writing workshops, writing instructors can partner with the college or university writing center to learn the benefits of military writing and help student veterans see the connections between military writing and academic writing, which can be achieved through the institutions veteran center staff (Hadlock & Doe, 2014). In addition, writing center tutors can be trained to work specifically with women student veterans to help develop and run the writing workshops. This will introduce women student veterans to both the writing center and its tutors, hopefully encouraging them to utilize this campus resource when future help is needed on writing assignments. Hinton (2014) identified a partnership between writing instructors and college or university writing centers as a means to provide student veterans with increased feedback and support on writing assignments, coupled with having writing center tutors specially trained to work with student veterans.

Enabling women student veterans to transition more easily between military writing and academic writing can help them affirm their identity as college or university students during a period of both lifestyle and identity transition. Attending a writing workshop can promote belonging for women student veterans working alongside their peers in an environment of acceptance and support from college or university writing instructors and tutors. These writing workshops can, furthermore, provide a safe space for women student veterans to begin expressing their voice in academic writing. The promotion and support of identity, belonging, and voice can be enhanced through college or university women student veteran writing groups.

The college and university writing groups for women student veterans can involve participants, solely women student veterans, in reading their writing (focused upon their experiences as women and former members of the military) aloud during group meetings. Colleges and universities can establish partnerships with writing instructors, veteran centers, and writing centers to set up and maintain these women student veteran writing groups. Writing instructors and veteran center staff can serve as facilitators for these writing groups, with the goal being for the groups to be self-run by the group members. Writing centers can provide support for writing improvement as group members see fit. The writing groups can be housed within the veteran center at the college or university. Schell and Kleinbart (2014) stated that within a veteran writing group that is established and led, participants felt safe to express their voice with their veteran peers. If deemed appropriate, the writing produced by college and university women student veteran writing groups can be exhibited and published, as evidenced with the Warrior Writers Project that Springsteen (2014) established.

Identity can be acknowledged and supported in college and university writing groups for women student veterans as they express their military experiences through narrative and poetry writing. A sense of belonging can be established through the reading aloud of written works within a group of peers at their college or university. Voice can be safely expressed and heard within the supportive environment of these writing groups. While writing groups specifically for women student veterans can help with identity, belonging, and voice, this can be further enhanced through trained writing instructors.

Colleges and universities can offer such training as professional development for their writing instructors. One component of the training can be on identification of the assets that women student veterans bring with them, as individuals and as a group, from the military into higher education. Hart and Thompson (2016) suggested asset-based professional development for writing instructors teaching veteran-specific writing courses; however, such professional development can be made available to all writing

instructors who may have women student veterans in their writing classes. Focusing on women student veterans' assets, which were brought from the military into higher education, can inform writing instructor individualized attention and supportive feedback to ensure positive writing instructor influence. These assets include the ability to follow through with an assigned task, a global understanding of the world, a level of maturity, and a sense of personal growth (Blaauw-Hara, 2016; Gregg et al., 2016; Schiavone & Gentry, 2014).

Another component of the writing instructor training can be on navigating and supporting the individual needs of women student veterans, including diagnosed and undiagnosed disabilities. Morrow and Hart (2014) identified the need for writing instructors to revise their writing courses to better align with the needs of individual student veterans. These needs can involve clear feedback on writing assignments that include grammatical, mechanical, formatting, and citation corrections; detailed and applicable examples; and continuous repetition of corrections and examples within writing assignments and across differing writing assignments. In order for women student veterans to more easily understand this feedback, instructors can model their feedback after the business writing style of instructions given by military supervisors to their subordinates, examples of which can be found in military communication writing manuals (C. Enriquez, personal communication, October 23, 2020). Wood (2014) emphasized that writing instructors need to be conscious of students' diagnosed and undiagnosed disabilities, such as TBI and PTSD, and their effects on student veterans' oral and written communication abilities. Tailoring such individualized attention and supportive feedback to be specific to each woman student veteran would allow instructors to better support this student population.

By providing women student veterans with individualized attention and supportive feedback, writing instructors can help foster a sense of belonging in their writing courses and create a safe space for voice. This can help build rapport between writing instructors and women student veterans in their courses, allowing for

women student veterans to feel accepted and supported.

Conclusion

The results of this study, supported by the literature, show the importance of identity, belonging, and voice for women student veterans connected with writing assignments and writing courses during their transition process from the military into higher education. Women student veterans were influenced in these three areas by the transition from military writing to academic writing that mirrored their changing identity from active-duty military personnel to student, the need for belonging in writing courses with their peers, and writing instructor influence over a sense of belonging and a safe space for voices to be heard in the college and the university writing classroom. The suggested practices and implementation focused upon the importance of identity, belonging, and voice for women student veterans in writing courses. The participants in this study voiced their experiences in a safe space, hopefully benefitting future women student veterans with the formation of identity through writing, the belonging with peers in writing courses, and a safe space for their voices to be heard in writing classrooms.

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Assessment of Efficacy of Lab-Based Learning in Enhancing Critical Thinking and Creative Thinking Among Learners

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ABSTRACT

With technological innovations happening at workplaces, 21st century organizations demand competencies in thinking creatively and critically. These two skills will potentially help prospective employees become confident individuals, concerned citizens, self-directed learners, and active professionals. In this context, it becomes imperative to overhaul the lecture-based and banking model of the traditional pedagogical approach in order to impart such skills among undergraduate and graduate students. To address this issue, a lab-based teaching-learning method focused on problem-solving and design thinking was introduced at OAMK Labs in Finland. This study assesses the efficacy of lab-based learning in enhancing creativity and critical thinking among students from engineering, management, and science backgrounds of Kathmandu University, Nepal. The study was conducted in a workshop setting using a randomized control trial (RCT) where participants were divided into control and treatment groups. Participants in treatment group took part in a design thinking workshop that applied lab-based learning pedagogy, while those in the control group were given some reading material on improving creativity and critical thinking. Standard tests on both critical and creative thinking in a pre- and post-stages were administered to both groups. Data was analyzed using standard Difference-in-Differences technique. The results showed that while the level of critical thinking improved significantly, among the learners in treatment group alone, the creativity level in the post-stage increased significantly among learners in both groups. Results validated the efficacy of lab-based teaching-learning in addressing the need for critical and creative thinking skills among learners.

Keywords: critical thinking, creativity, lab based learning, innovation, higher education, Difference-in-Differences

Introduction

Due to the recent technological advancements such as automation, robotics, artificial intelligence (AI), and Internet of things (IoT), the existing workforce is on the verge of being displaced if they do not acquire requisite skill sets. With this impending threat looming, it becomes imperative that learners of this generation gain life skills that help them stay relevant and productive in the work force. This reality of new workspace requires producing a workforce of independent thinkers, problem solvers, and decision makers (Silva, 2009). Given this backdrop, there is a greater need for learners to prepare themselves with skills sets that can meet the current economic and social world order than the learners of the past centuries (van Laar et al., 2017). These skills are popularly known as 21st century skills. Despite their popularity, there

is no general consensus as to what comprises 21st century skills. Trilling and Fadel (2009) have grouped 21st century skills as: (i) learning and innovation skills (including critical thinking and problem solving, communication and collaboration, creativity and innovation), (ii) digital literacy skills (including information literacy, media literacy, information and communication literacy), and (iii) career and life skills (including flexibility and adaptability, initiative and self-direction, social and cross-cultural interaction, productivity and accountability, leadership and responsibility). Though the definition of 21st century skills may vary, each skill is focused on encouraging learning where one would consider the practicality of use of knowledge and how to apply that knowledge (Larson & Miller, 2012).

Fischer and Friedman (2015) assert that there are six necessary skills that students need to acquire in order to become indispensable to any organization, principally, the 6Cs: critical thinking, communication, collaboration, creativity, character, and curiosity. These two additional hallmarks of character and curiosity have been added to previous list of the four skills by the 21st century skills framework created by the American Management Association in 2012.

However, our current education systems have neither evolved in parallel nor in infrastructure, in pedagogical methods, or in curricular material to prepare students for the future workplace (Chu et al., 2017). Most educational institutions in countries like Nepal focus on rote learning that relies more on acquiring and retaining facts and figures and less on fostering analytical thinking (Watkins & Regmi, 1995). There is a need for new approaches and methods for the teaching-learning process. Soule and Warrick (2015) posit that addressing competencies with a focus on the 4Cs—critical thinking, communication, collaboration, and creativity, as embedded in the Framework of 21st Century Learning (Casner-Lotto & Barrington, 2006), requires an updated approach to education which includes a different mindset from the perspectives of many involved in the learning community. Hence, in order to meet the changing needs of 21st century companies, new learning approaches are required across all fields of study, both nationally and internationally (Wrigley & Straker, 2015).

The traditional lecture-based method of teaching advocates the banking model of education with a fundamental premise—students are containers and teachers need to fill them with knowledge. This decade-old belief is undoubtedly not adequate to equip and enhance critical skills, reasoning capacity, and creativity among learners (Freire, 1996). In this regard, to improve the innate skills among the learners, various new pedagogies have been proposed, such as (i) case-based learning (Harman et al., 2015), (ii) problem-based learning (Birgili, 2015), and (iii) project-based learning (Sasson et al., 2018). Another addition to this list is the lab-based learning model, which was pioneered in Finland. This blended model applies a multidisciplinary

approach and design thinking process and claims to enhance critical thinking and creativity skills (Heikkinen, 2018).

Several pedagogies have been introduced that supposedly enhance critical thinking and creativity among learners. And to justify this, various methodology have been used. For instance, Musa et al. (2012) used a self-administered survey questionnaire to show efficacy of project-based learning in improving critical thinking. Similarly, Dillion (2006) in a case study, has shown that working interactively can lead to enhanced creativity. However, so far efficacy of lab-based learning pedagogy in improving critical thinking and creativity among its learners has not been established. Since introducing any new pedagogy entails a cost associated with developing new curriculum, training the faculties and spending resources in terms of money and time, it is essential to evaluate the claims regarding efficacy of the proposed pedagogies in improving these skills so as to check whether it is worth implementing. In this regard, this research intends to verify the efficacy of the lab-based learning model in improving creativity and critical thinking skills by employing an experimental design method that applies standard proxy variables to measure change in the stated traits. Thus, the study attempts to answer the question, “Does the lab-based learning model enhance critical thinking and creativity among learners?”

Further, the paper will provide a future guideline of empirically evaluating the pedagogy's efficacy in improving creativity and critical thinking among its learner using standard quantifiable methods.

Literature Review

Need to Integrate 21st Century Skills in Education

Because of the rapid growth in technology and change in social and economic conditions, the idea that subject matter taught at school and colleges will be relevant for an entire lifetime of a student is an outdated concept (Schleicher, 2011). In fact, the purpose of education has now shifted to preparation for jobs that have yet to be created, addressing problems

that are yet to be known, and using technology that has yet to be invented (Bell, 2016). In this regard, education reformists argue that it is imperative that schools instill and develop within students 21st century learning skills as the traditional rote form of education is not enough (Jerald, 2009). 21st century skills are considered to be a necessary skill set that encompasses life skills, soft skills, and interpersonal skills required for an individual to become competent in the modern work force (Schleicher, 2011). Further, this skill set is essential for the development of non-routine skills that will be more in demand in the future (Murnane, 2008).

Despite 21st century skills being widely considered as an essential component of future learning, still there is no general consensus on what defines these skills. As a result, the nonprofit organization, Partnership for 21st Century Learning (P21), has collaborated with educators, business leaders, and policymakers in order to define what actually constitutes this skill set (Soule & Warrick, 2015). Further, according to Soule and Warrick (2015), the 4Cs (critical thinking, communication, collaboration and creativity) are the main skills that would complement core academic subject knowledge. Meanwhile, Binkley et al. (2012) classified 21st century skills under four groups: (i) ways of thinking comprised of creativity and innovation, critical thinking, problem solving, decision-making, learning to learn, and meta-cognition, (ii) ways of working comprised of communication and collaboration (teamwork), (iii) tools of working comprised of information literacy and information and communication technology literacy, (iv) living in the world comprised of citizenship, local, and global life and career, and personal and social responsibility. Sahin (2009), similarly, categorized 21st century skills using three sub-titles: (i) information and communication skills, (ii) thinking and problem-solving skills, (iii) interpersonal and self-directional skills. Thus, in every classification, critical thinking and creativity have been considered the essential elements of 21st century learning skills.

Critical Thinking Skill

Critical thinking is defined as “the intellectually disciplined process of actively and

skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by observation, experience, reflection, reasoning, or communication, as a guide to belief and action” (Scriven & Paul, 2007, p. 1). The ability to think critically requires an individual to question and possibly reject accepted ideals and authorities (Antler, 2013). Critical thinking is considered an important life skill and an asset for the future work force (Koenig, 2011). Similarly, Peterson et al. (1997) showed critical thinking as the most important element in medium to high complexity jobs which are defined as those that encompass a wide array of tasks including decision-making, planning, negotiation as well as engineering, and problem-solving. Therefore, improving critical thinking is essential for making an individual, work-place ready.

Higher education is thought to contribute towards critical thinking (McMillan, 1987). In fact, DeAngelo et al. (2009) showed that 99% of faculties endorsed the importance of critical thinking in undergraduate studies. However, according to Tsui (2002), higher education may not be enough to improve higher order cognitive skills, and hence, in order to improve critical thinking, the pedagogy itself must reflect this need. Among the many pedagogical approaches used to enhance critical thinking, most often the problem-based and project-based learning approaches are used as they put learner’s center stage. Bell (2010) opines that project-based learning (PBL) is an innovative approach where students drive their learning through inquiry, collaborative research, and carrying out projects that reflect their knowledge. Further, Musaet al. (2012) have found that PBL, through its focus on investigating problems in the workplace setting, facilitates the growth of critical thinking and creativity skills. Meanwhile, another new line of thought considers critical thinking to be a *learned skill that* can be engrained in students by actively engaging them in project-based or collaborative activities (Snyder & Snyder, 2008).

Creativity Skill

Creativity has many and varied definitions. According to the confluence approach, creativity is considered as the

convergence of personality elements that connects ideas, sees similarities and differences, possesses flexibility and aesthetic taste, and is unorthodox, motivated, inquisitive, and questions societal norms (Sternberg, 1999). Recently, the term, creativity, has been coupled with innovation, especially in that creativity is considered the production of novel and useful ideas (Amabile & Pratt, 2016). Further, creativity requires bipartite aspects, originality and effectiveness, where originality implies novelty in idea and effectiveness refers to a useful fit or appropriateness (Runco & Jaeger, 2012).

Creativity can also be further divided into the classification of divergent and convergent (Taft & Rossiter, 1966). The generation of novelty (originality) is considered divergent thinking while effectiveness of an idea is considered convergent thinking. According to Cropley (2006), divergent thinking involves producing multiple answers in unorthodox ways while convergent thinking is more orthodox and focuses on indicating one best solution. Therefore, creativity requires a rich mixture of both divergent thinking and convergent thinking in order to avoid reckless changes (Cropley, 2006).

Akin to critical thinking, the need for integrating both forms of creativity in higher education in order to make graduates workplace ready has been advocated for (Sinclair et al., 2006). In fact, the argument of whether creativity can be amenable to education has a long history, dated back to the ninetieth century (Baer & Kaufman, 2006). Sinclair et al. (2006) argues that the prevalence of pressure of quality assurance, a peer review system along with the demand for increased research and efficiency in higher education has led to a decline in creativity. As a result, the pedagogical need of addressing creativity cannot be understated. According to Dillon (2006), inter – and multi-disciplinary learning, collectively called integrativism, in curriculum can enhance creativity among the learners.

Lab-based Model in Learning and Its Role in Enhancing Creativity and Critical Thinking

The lab-based model, developed from a basis of PBL, is a new pedagogical approach

considered to enhance 21st century learning skills, specifically, critical thinking and creativity. This Finnish lab-based pedagogical approach, also known as the *Lab studio model*, is considered to contribute to the learning by applying boundary-crossing, or interdisciplinary skills, resulting in a T-shaped skill base in higher education (Heikkinen, 2018). The lab-based model is, therefore, a multidisciplinary form of the PBL model that utilizes experiences from multiple disciplines including engineering, health sciences, management, and humanities in order to understand and determine a solution for problems from various perspectives. The model uses empathy and reflection to create a bridge to the development of 21st century skills and core academic knowledge of higher education (Karjalainen et al., 2016).

At its core, the pedagogy of the lab-based learning model uses the double diamond design thinking which connects learning with reflective practices, both of which are considered to improve critical thinking and creativity skills (British Design Council, 2005; Hedberg, 2009; Huq & Gilbert, 2017). The double diamond model that is integrated into the lab-based learning pedagogy is depicted by Figure 1.

Double Diamond Design

As shown in Figure 1, the model uses two distinct stages, problem identification and ideation. Within these stages, there is a sequence of discover, define, develop, and deliver activities. Thus, the double diamond model requires a learner to explore any issue or problem both widely and deeply (divergent thinking) which is then partnered with a focused action (convergent thinking). According to Baker et al. (2001), critical thinking is 'convergent' while creative thinking is 'divergent' in nature. Thus, the double diamond

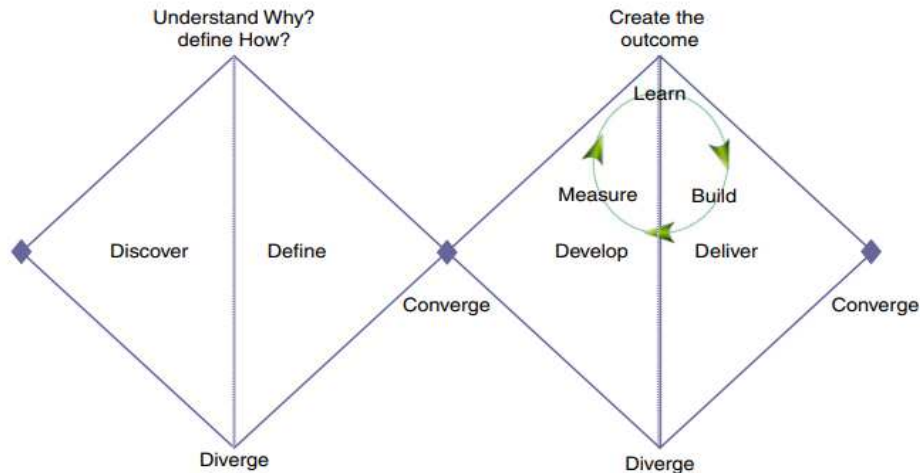


Figure 1. Double Diamond Design.

Note: Adapted from "The double diamond design process model," by British Design Council, 2005. (<https://www.designcouncil.org.uk/news-opinion/what-framework-innovation-design-councils-evolved-double-diamond>).

model used as the process in the lab-based learning model is meant to enhance both creativity and critical thinking. Additionally, Huq and Gilbert (2017) assert how the double diamond model successfully avoids the traditional push model's practice of telling the students 'what to do' and instead, it challenges the students to co-create a solution to existing problems.

The lab-based learning model, thus, focuses on developing 21st century skills such as communication, collaboration, critical thinking and creativity. However, the effectiveness of the lab-based learning model is yet to be tested through empirical research. This study aims to examine whether the lab-based learning model enhances critical thinking and creativity skills of learners, especially at undergraduate and graduate level students.

Assessing Efficacy of Pedagogy in Enhancing Critical Thinking and Creativity

Despite the various pedagogical approaches being considered in enhancing both critical thinking and creativity, evaluation of their efficacy has produced mixed results. For instance, Terenzini et al. (1995) found that out-of-class experiences like 'unassigned book readings' increased critical thinking. On the other hand, Arum and Roska (2011) have shown that though the level of critical thinking increases with

college, it also declines over time, making college studies less effective in boosting long-term critical thinking.

Scholars agree that the major hindrance of critical thinking is a lack of standardized curricula and a focus on test scores (Landsman & Gorski, 2007; Sheldon & Biddle, 1998). Additionally, the assessment of critical thinking takes time and effort as it cannot be measured through standardized testing (Aviles, 1999). According to Bissell and Lemons (2006), subject-independent tests are the best way to accurately measure critical thinking because these assessments allow measurement of critical-thinking ability regardless of context, thus, allowing comparison between different groups of people (Bissell & Lemons, 2006). One of the most popular critical assessment techniques is Watson Glaser critical thinking appraisal (CTA) Test which measures different but interdependent aspects of critical thinking that include inferences, recognition of assumptions, deduction, interpretation, and evaluation of arguments (El Hassan & Madhum, 2007). A typical question that would be asked is as follows:

"Should companies downsize their workforces to decrease expenses and maximize profits?"

Argument: Yes, downsizing will protect the company from bankruptcy in hard economic times. (i) Strong Argument(ii) Weak Argument.”

The respondent would need to choose one of the given options. As this type of test is user-friendly and simple to administer, it is widely known to be used by employers (*Tips to Pass*, n.d.). Watson Glaser CTA Test is used widely in assessing critical thinking in the domain of both the sciences and social sciences (Kumar, 2017; Sadler et al., 2002). Hence, this study will employ Watson Glaser CTA Test to assess whether critical thinking among the learners increased through the use of the lab-based learning model.

Similarly, in the case of enhancing creativity, various assessments of pedagogies have found varied results. For example, Al Hashimi et al. (2019) has indicated that the use of social media can enhance creativity; however, Al Hashimi et al. (2019) have not properly assessed the claim. Meanwhile, Gardiner (2017) opines that creativity declines among learners because of reactive feedback from teachers. But again, the opinion is based more on a belief of teachers rather than actual measurement of the phenomena. In this regard, literature suggests two separate tests for convergent and divergent creative thinking, the Remote Association Test and the Alternative Use Test (Guildford, 1967; Mednick, 1962).

Remote Association Test

The Remote Association Test (RAT) is a test used to measure creative potential. It was developed by Sarnoff Mednick and Martha Mednick in 1962 and has been considered a valid measure of creativity since then (Mednick, 1962). Each of the RAT questions presents three cue words that are linked by a fourth word, which is the correct answer. For example, “cottage/swiss/cake” is linked by correct answer “cheese”. Though the efficacy of the RAT Test in assessing creativity has been challenged on the basis that it focuses on verbal fluency (Ochse & Van Lill, 1990), a recent study by Lee et al. (2014), using the two parameter logistics model, has shown RAT to be an effective assessment tool for the Convergent Thinking Test of Creativity.

Alternative Use Test

The Alternative Use Test introduced by Guildford (1967) is considered a valid test for divergent thinking (Dippo & Kudrowitz, 2013). It supports the bounded ideation theory that stipulates that a number of novel ideas increases at the beginning of idea generation and then level off as participants become fatigued, forming an S-shaped curve (Reinig et al., 2007). In this alternative user test, the subject is asked questions on the alternative uses of a common object. For example, the test could ask the common uses of a brick. The higher the number of viable alternatives generated, the higher the respondent would score in divergent thinking. This test has been the most widely used in creativity tests (Kim, 1998; Mayer, 1999). It also has a high level of reliability with a correlation above 0.8 (Fink et al., 2010). Since this study aims to evaluate the efficacy of the lab-based learning model in improving critical and creative thinking among learners, all three tests, Watson Glaser CTA Test, Remote Association Test and Alternate Use Test are employed.

Methodology

This study applies a quasi-experimental method for assessing the impact of the lab-based learning pedagogy in terms of enhancing critical thinking and creativity capacities among learners from the undergraduate and graduate level. To carry out the experiment, a randomized control trial (RCT) was designed where participants were divided into either the control or the treatment group. The participants in the treatment group took part in a three-day design thinking workshop held at the Kathmandu University School of Management. The workshop used lab-based learning pedagogy to guide students in critically viewing social problems and creatively finding viable business solutions to solve those problems. Meanwhile, those in the control group were given material to read regarding critical thinking and creativity. The materials focused on understanding and improving the creativity and critical thinking. Participants in both the control and the treatment group were given a pre and post assessment, consisting of a combination of the Watson Glaser CTA Test, Alternative Use Test and Remote Association Test. As the study made use of

School	Control group	Treatment Group	Total
School of Management	10	12	22
School of Engineering	3	11	14
School of Science	0	1	1
Total	13	24	37

Table 1. Distribution of Control and Treatment Group

human subjects, approval from the research department of Kathmandu University was taken in conformance with the Helsinki 1964 declaration (PP, 1964). The difference in differences econometric method was applied to the scores of creativity and critical thinking obtained during pre and post assessment of participants from both the control and treatment group. This method was applied in order to determine the actual effect of the lab-based learning model on the critical thinking and creativity skill level of participants. The details of the study and the experimental design are explained below.

Study Settings and Participants

This study draws on the pre and post data collected during the three-day “Experimental Boot Camp” workshop, a form of intervention using the lab-based learning model that was held at Kathmandu University School of Management from October 6-9, 2018. First, students from the school of engineering, school of science, and the school of management at Kathmandu University were invited to apply for participation in the workshop online. Prior to registration, all thirty-seven applicants were administered the Watson Glaser CTA Test, Remote Association Test and Alternate Use Test for a baseline measure. The selection into the two groups was random and

was chosen irrespective of score. The students were then randomly divided into either the control or the treatment group. The control group consisted of thirteen students, and the treatment group consisted of twenty-four students. Table 1 depicts the way participants were divided between the control and treatment groups.

Table 2 shows the gender of the students divided between the control and treatment groups.

The twenty-four students selected in the treatment group were then mixed with the eight other industry participants that belonged to retail, financial service, startups and software development. Hence, a total of thirty-two participants took part and completed the lab-based learning three-day design thinking workshop. During workshop, the participants were provided with several social and environmental issues including improving female hygiene, reducing water pollution, improving computer literacy skills among adults, and reducing sexual harassment at the workplace. The participants from both the industry and students were mixed and grouped into a team and were asked to research on the topic they were given to find viable, desirable and feasible solutions for the issues that could ultimately be

Gender	Control group	Treatment Group	Total
Male	4	7	11
Female	9	17	26
Total	13	24	37

Table 2. Distribution of Gender among Control and Treatment Group

turned into a startup business. At the end of the workshop, the teams were asked to present their solution and business plan. The workshop offered participants hands on experience developing new and innovative solutions for addressing social needs. Pedagogically, the workshop was based on the lab-based learning model, originally developed at the Oulu University of Applied Sciences in Finland.

Meanwhile, those who fell into the control group were provided with readings on creativity and critical thinking skills that included “Thinking Fast and Thinking Slow” by Daniel Kahneman and “Steal like an Artist” by Austin Kelon. The readings were provided to simulate traditional classroom-based teaching, and all the learners completed the reading and provided a two-page summary of the content from the readings.

After the workshop, the Watson Glaser CTA Test, Remote Association Test and Alternate Use Test were again administered to both the control and treatment group. The scores were used to compare critical thinking and creativity levels pre and post workshop. It is to be noted that the industry participants were not included in either the pre or post assessment as the research only focused on the improvement of the students.

Timing Between Pre and Post Assessment

According to Brown et al. (2008), a time gap of three to six weeks between the pre-test and post-test is considered ideal as the respondents would only vaguely remember the way they answered the first time the test was taken. In this study, the pre-test was done almost three weeks before the workshop, and hence, aligned with the guidelines given by Brown et al. (2008). Further, the study administered the post assessment the same day as the workshop, as suggested by Lewis & Lovatt (2013), so as to remove possible confounding errors such as lost interest, absenteeism or fatigue which could have appeared with a delay.

Difference-in-Differences Method for Data Analysis

The research used a quasi-experimentation design (Meyer, 1995). This was selected to account for false counter-factual

information that generally arises while using both a pre and post assessment as well as participant and non-participant experimental design. One of the major flaws in the pre versus post design is the lack of a control variable to manage the common trend. As a result of which, counterfactual analysis of what would have happened if the intervention had not taken place cannot be assessed. Meanwhile in the case of participant versus non-participant design, the selection process itself can lead to upward bias in the measurement. To overcome these flaws, the research used the difference-in-differences method which combines pre and post assessment and a participant and non-participant approach to reduce selection bias as well as also the common trend (Lechner, 2011).

The difference-in-differences method, first used by Snow (1854), first stipulates that an intervention and outcome of interest be identified. In this study, the intervention is the workshop using the lab-based learning model, and the outcome of interest is the test scores on creativity and critical thinking. The intervention is then used only with the treatment group while the control group was given a reading task. After the completion of the workshop, a difference in outcome between the treatment and control group in baseline (difference-1) and difference in outcome between both groups post intervention (difference-2) is computed, and finally, the actual impact of intervention is obtained by difference in difference (difference-2 minus difference-1) (Ryan et al., 2015). Thus, the basic outcome can be estimated using the relation as given below:

$$DD = (Y_{\text{treatment-post}} - Y_{\text{treatment-pre}}) - (Y_{\text{control-post}} - Y_{\text{control-pre}}) \dots\dots i$$

where Y is the outcome.

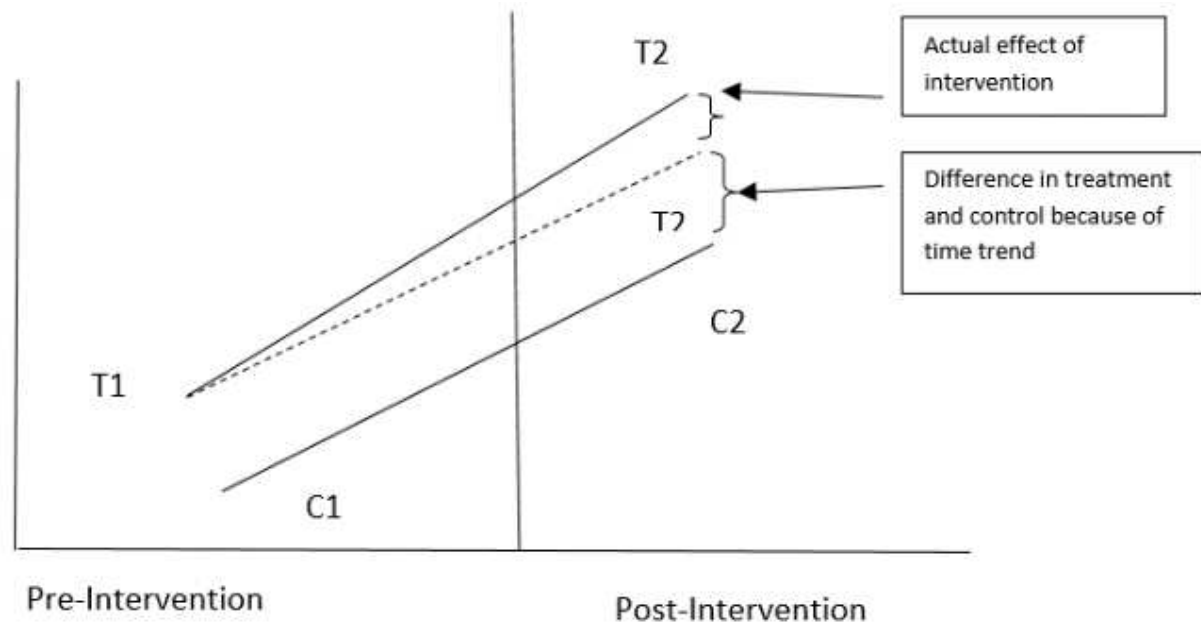


Figure 2. Difference-in-Differences Model.

Graphically, it can be represented as shown in Figure 2.

In regression form, difference-in-differences can be represented as:

$$Y_i = \beta_0 + \beta_1 D + \beta_2 \text{Post} + \beta_3 \text{Post} * D + \dots$$

Where:

Post = 0 before intervention and 1 after intervention

D = 0 for control and 1 for treatment

Post*D = Interaction between post and treatment

Looking at the regression Coefficient 3 gives the actual intervention impact

Y_i = Score of the students in the standardized test where $i=1$ is for creativity and $i=2$ is for critical thinking

As per Bertrand et al. (2004), the difference-in-differences method is appropriate when interventions are as good as random, conditional, on time, and group fixed effects. In this model, all three requirements were met. The intervention group was randomly selected, only one intervention was done, and the values were

derived from the same pool of students. Hence, the methodology was deemed to be sound for use and application.

Flowchart in Research Process

The overall process of the workshop and the methodology used for the research can be summarized by the flowchart given in Figure 3.

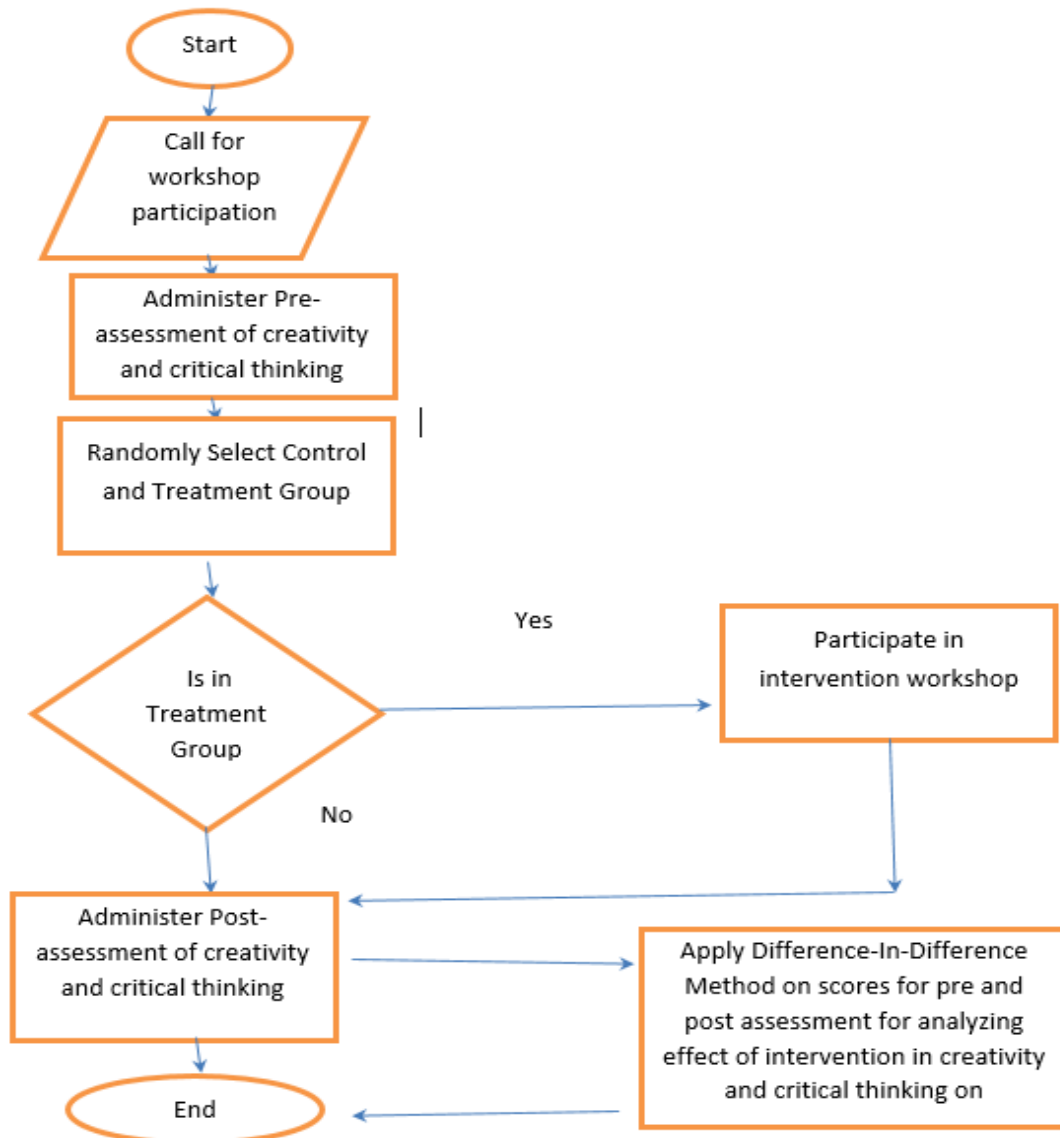


Figure 3. Flowchart of Overall Research.

Results

After the completion of the workshop, the score from the pre and post assessments of both participants from the control and treatment group were collected and analyzed using the difference-in-differences regression given by the equation ii). The results obtained for both critical thinking and creativity skills are tabulated in Table 3. The results show that post-intervention critical thinking skills among students in the treatment group increased by 7 units while the skill of

creativity increased by an average 8 units. In the case of creativity, however, the post-analysis showed a rise in creativity by an average of 4 units for both the control and treatment groups. This could perhaps be explained by the fact that, irrespective of selection in control or treatment group, students tried to assess their creativity by using the Internet to learn about these questions. Further, the adjusted R square value showed that the application of lab-based learning can explain approximately 59% of variability in the creativity

Regression	Intercept (0)		Treatment/Control Dummy(1)		Pre/Post Dummy(2)		Post Treatment Interaction Dummy(3)		Adj R-square	ANOVA (F-ratio)
	Coeff	t-stat p-value	Coeff	t-stat p-value	Coeff	t-stat p-value	Coeff	t-stat p-value		
Creativity Skill	10.33333	14.0941 (0.000)	0.107	0.11959 (0.90)	4.942***	4.864 (0.000)	8.883***	7.111 (0.000)	0.589	35.854 (0.000)
Critical Thinking Skill	17.583***	12.646 (0.000)	0.497	0.293 (0.769)	2.801	1.452 (0.150)	7.327***	3.091 (0.002)	0.469	22.561 (0.000)

Table 3. Result of Regression.

Note. * sig @ 10%, ** sig @ 5%, *** sig @ 1%; bold values faced are significant

score while the model again explains 47% variability in the critical thinking score. Further, the ANOVA analysis of lab-based learning method's impact on both creativity and critical thinking is highly significant which, in turn, validates the stability of regression equation. Thus, the overall results show that lab-based learning pedagogy does improve creativity and critical thinking among learners of undergraduate and graduate students.

Discussion

This study has found that lab-based learning pedagogy that uses a double diamond model enhances the critical thinking and creativity among students. This finding is aligned with the opinion of Riggs and Hellyer-Riggs (2014) that critical thinking ability increases among challenged learners as opposed to unchallenged or unreflective learners. Further, as this pedagogy adopts the learning principle of classroom community/co-operative learning and fairness, justice, and equity, it challenges the learners to widen their understanding of the subject matter. According to Elder and Paul (1996), a 'challenged thinker' refers to those who actually are aware of the role that thinking plays in their life and its impact. Since the lab-based pedagogy challenges the learner to come out of their comfort zone and widen their understanding, this increased level of challenge can explain the

increase in critical thinking indicated during the post-intervention.

Huq and Gilbert (2017) found that students become more empowered in their learning and will experience a sense of self-awareness if the hierarchical barrier between teachers and students is closed and dissolved. Using the objective self-awareness theory, Silvia and Phillips (2004) have demonstrated that participants' creativity levels drop once they become self-aware of their failures. On the other hand, their creativity levels tend to stabilize if they are not afraid of failure. This phenomenon clearly explains the underlying reason as to why the creativity level registered an improvement in both the control and intervention groups simultaneously. Students were self-aware of their failure of not scoring high in the tests, and hence, performed poorly during the screening phase. But in the post-intervention phase, when students from both the groups were immune from failure as the test was perfunctory, there was a moderate impact on their creativity level. Since lab-based learning pedagogy uses reflective practice and encourages learners to learn from mistakes through feedback and embrace failure, this could well explain the reason behind improvement in the creativity level.

Further, during the workshop, students were asked to write their personal goals on a day-to-day basis, and they were expected to refine their

goals on every succeeding day based on reflection of the preceding day. Moreover, in each stage, learners were asked to self-reflect on their learning and feedback was exchanged among all the learners, both on a peer-review basis and by the lab masters. These iterative reflective practices and self-directed learning is considered to enhance critical thinking (Facione, 2011). In addition to that, Nabhan (2016) and Nesoff (2004) have also found that critical thinking improved through reflective practices such as maintaining journal diaries. Thus, the practice of self-reflection could have been a contributing factor in improving critical thinking among the participants of the workshop in the post-intervention group.

Limitations of the Study

This study was done among students who chose to voluntarily apply for the workshop which possibly could have led to self-selection bias, as only those students who were interested in design thinking workshop participated. Despite the fact that investigators tried to lessen its impact by randomly choosing the control and treatment groups, assessing its spillover effect into the actual results was rather difficult.

Further, the study used standard creativity tests (Remote Association Test and Alternative Use Test) and a standard critical thinking test (Watson Glaser CTA Test) as the proxy for measuring creativity skills and critical thinking skills. As we cannot rule out the possibility of limitations of the proxies, a better proxy needs to be identified for future studies on the lab-based learning model.

Conclusion

Creativity, critical thinking, communication, and collaboration are the most sought-after soft skills required for the workforce of the 21st century. However, there is no established pedagogy that attempts to institutionalize them in the teaching-learning process. The lab-based learning model, introduced in the OAMK Labs in Finland, attempts to focus on developing these 4Cs among learners. However, there has been no research carried out to validate the claim. In this context, this research was done to determine whether the lab-based learning model enhances the creativity and critical thinking skills of students. The study conducted, as a part of a three-day workshop

based on the lab-based learning model, has shown that, overall, the model improved critical thinking significantly among the treatment group and validates its efficacy. However, in the case of creativity as a skill, the result is a mixed bag as it showed to improve in both the control and treatment groups.

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Leadership in Marriage and Family Therapy Programs is Under-Explored: A Thematic, Narrative Overview

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ABSTRACT

Institutions of higher education rely on identified leaders to continue the mission of the organization, hire and retain quality faculty and staff, and sustain and further develop vigorous academic programs that retain students and prepare graduates to enter the work force. Discipline specific departments are subject to many demands and resources are pulled in different directions. As a result, the body of literature on leadership in higher education is robust and diverse. However, research on leadership in graduate marriage and family therapy programs is paltry in addressing if a relationship exists between leaders and student capacity to employ skills in a field focused on relationships. This study was a thematic, narrative overview. An exhaustive search of literature was conducted over the span of four years. Articles were assessed for relevance and appropriateness, organized by theme, and the findings were consolidated and are presented within this article. The three identified themes were: leadership in higher education, rigor in marriage and family therapy programs, and leadership in marriage and family therapy programs and other mental health fields. Gaps were identified in the literature and include the role of leadership style identification and self-exploration, the extent to which program leaders interact with students, and how the relationship between administrators and students impacts the development of field related skills.

Keywords: leadership, higher education, marriage and family therapy, MFT programs, relational

Introduction

Research on leadership, and leadership in higher education specifically, is expansive. There are very few areas that have not been explored from the perspective of leaders and subordinates in institutions at large (Decuyper, 2018; Ersozlu & Saklan, 2016; Esen et al., 2020). Additionally, research on program efficacy across disciplines is robust. Marriage and family therapy (MFT) graduate programs are designed to lead students toward licensure as independently practicing therapists. Further, they cover a niche area in the larger domain of psychology and mental health treatment. The cornerstone of therapy and the MFT field is the relationship. Specifically, MFTs are concerned with power dynamics, relational exchange, and how to keep systems in a homeostatic state (Avila et al., 2017). Given the relational nature of the field, and the rigor by which its academic programs are evaluated, it is surprising that a miniscule amount of literature explores leadership units in MFT programs and their role in the development of therapists. This research aims to collect, analyze, and report on the existing data via a thematic,

narrative overview so to assess the need for and value of further research in this area. Gaps were identified in the literature and include the role of leadership style identification and self-exploration, the extent to which program leaders interact with students, and how the relationship between administrators and students impacts the development of field related skills.

Discussion

Methods

Narrative overviews are used to provide a narrative synthesis of the literature available on a specific topic or phenomenon. They span over an extensive period during which data is collected, reviewed, analyzed, and presented. They allow for several areas of research to be pieced together in a readable style, which can then support further inquiry (Green et al., 2006). This study is a narrative overview which aims to synthesize the existing literature on leadership in marriage and family therapy programs, to identify gaps in the literature, and to provide recommendations for practice and future research.

To conduct this narrative overview, data was collected from several online databases which included ProQuest, Google Scholar, and EBSCOhost. The following search terms were used: leadership, leadership in higher education, leadership in MFT programs, leadership in marriage and family therapy, leadership in mental health, preparing graduate level therapists, MFT programs, and MFT program competencies. Data was collected and analyzed between January 2016 and August 2020. A preliminary search included articles from 1980 to 2016. Next, a search of more current research was performed, and dates were refined to the years 2015 through 2020. A comprehensive and ongoing search determined that little progress was made in the area of research on leadership in MFT programs.

Articles were subject to a preliminary review for appropriateness. Articles needed to meet the following criteria for inclusion: relevant to the current study, written in the English language, and published in a peer-reviewed journal. Articles were excluded if the topic was too broad with information that could not be analyzed as applicable to the focus of this study or if the research was exceptionally outdated. The qualifying research articles were reviewed and organized by theme. The findings are reported below.

Leadership in Higher Education

For the purpose of this study, leadership is defined as a leader's ability to organize participants in a manner in which they accomplish the leader's desired goals (Cyert, 1990). Much of the literature creates a clear distinction between leaders and managers (Floyd, 2016; Hofmeyer et al., 2015; Vilaga, 2019). Managers organize, are task-focused, and offer administrative oversight. Leaders are self-aware, offer expertise in their area, and influence an organization. The qualities of effective leaders and styles of effective leadership are well-researched. Leadership is an ongoing area of focus across multiple disciplines, including but not limited to, business and management, education, law, political science, public service, and nursing (Arthur et al., 2017; Benito, et al., 2018; Brandebo et al., 2016; Cote, 2017; Franken & Plimmer, 2019; Lamm et al., 2016; Singer, 2017; Veeriah, et al., 2017;

Warshawsky & Havens, 2014). There are several leadership styles that have been identified as well as factors that influence leadership, including but not limited to, resources, setting, and personality (Elwell & Elikofer 2015). Leaders tend to have a clear vision. They are often evaluated on the premise of characteristic traits, including modeling behaviors, ethics, willingness to be hands on, consistency in word and action, and trustworthiness. Leaders are largely responsible for the stability of an organization and can impact morale, relationships among coworkers, longevity and satisfaction of subordinates, and turnover rates. Leadership is much more than a position; it is dynamic and performative (Brue & Brue, 2018; Harris et al., 2016; Hofmeyer et al., 2015).

While there are innumerable styles of literature identified in research, this study reviewed those major categories identified in Bass' (1985) Full-Range Leadership Theory (FRLT): transformational, transactional, and laissez-faire. FRLT suggests that leadership exists upon a continuum of minimal effort (laissez-faire) to very high effort (transformational). The framework has been broadly and successfully applied across varying disciplines within the literature on leadership to determine leadership style. It is also one of the most cited theories on leadership (Antonakis & House, 2013; Bacha, 2019; Barnett, 2017; Itzkovich et al., 2020; Yahaya & Ebrahim, 2016).

Transformational leaders are generally seen as having a positive impact on the organizations they lead. They focus on the betterment of the organization and its employees, often sacrificing personal interest and gain (Ramsey et al., 2017). Transformational leaders increase awareness and inspire innovation. They create momentum toward shared goals. It is suggested that they are able to clarify the purpose of company-wide goals for employees and use the relationship to focus employee attention toward achieving shared goals (Steinmann et al., 2018). Charisma and trustworthiness are common characteristics of transformational leaders. These leaders tend to be found in upper-level management, rather than lower-level positions (Fardillah et al., 2018; Riaz & Haider, 2010).

Transactional leaders are focused on the exchange between the leader and the follower. They are not concerned with situational factors. Rather, the process of giving and receiving is of the utmost importance. Decisions are often made with little input from others and without a full range of details due to the less collaborative nature of this style (Khan, 2017). Subordinates are incentivized to perform toward the leader's goals and vision via positive rewards for such behavior (e.g. tangible incentives or verbal praise). Failure to comply can result in punitive action or punishment (Riaz & Haider, 2010).

The laissez-faire style is often referred to as an absence of leadership. Research has suggested that is one of the more ineffective leadership styles (Puni et al., 2016; Tosunoglu & Ekmekci, 2016; Wellman & LePine, 2017). Laissez-faire leaders lack an emotional, and sometimes even physical, presence. They offer little follow-up to requests, fail to express opinion on important matters, and avoid responsibility and decision-making. These leaders, in avoiding decision-making, pass the responsibility to their subordinates. The laissez-faire leaders assume that subordinates will work independently and self-motivate without guidance (Jones & Rudd, 2008).

Leadership in higher education has garnered increased interest over the last decade. Definitions of leadership have expanded due to the need to adapt to technology and globalization (Alonderiene & Majauskaite, 2016; Dobson et al., 2019; Gigliotti & Ruben, 2017; Wood & Breyer, 2017). In spite of this, leadership in higher education institutions warrants further review. Academic programs continue to expand, student populations grow increasingly diverse as individuals have access to institutions across the globe, and organizational demands and stress increase with social and global changes (Jones & Harvey, 2017). The existent research has continually called for an understanding of how to improve leadership in institutions and a demand for better and adaptable leadership (Black, 2015; Jones & Harvey, 2017; Stefani, 2015).

Institutions of higher education are constantly juggling demands and are subject to scrutiny. They are tasked with ethically serving

students and preparing them to enter a work force. They must do this while also managing tight fiscal budgets, negotiating agreement among several administrators, balancing the need to bring in enough funds to sustain daily operations, and maintaining the integrity that the field of academia and student consumers demand (Evans, 2018; Fields et al., 2019; Stefani, 2015; Thompson & Miller, 2017). Leaders in higher education occupy roles identified to shape the development of the school and its programs, faculty, and student outcomes. The following are commonly held titles, but this list is not comprehensive: dean, associate dean, department chair, program chair, program director, and faculty liaison. Effective leaders must recognize their ability to influence the institution's success and often display common characteristics such as vision, integrity, consideration, emotional intelligence, and sense of direction (Hofmeyer et al., 2015). A collaborative style can influence performance outcomes and support academics. Effective leaders are indisputably important in higher education settings. They shape institutional practices and have a direct impact on their subordinates. They are largely responsible for shaping and sharing the vision and ensuring that faculty and students are motivated to reach it (Bacha, 2019; Ekman et al., 2018; King, 2017; Steele & White, 2019).

Snodgrass and Shachar (2008) conducted a qualitative, phenomenological study on the relationship between program director leadership style and institutional characteristics. While the study was field specific (occupational therapy), it provided insight on collegiate level program director leadership styles. Participants were administered leadership inventories to identify their leadership styles and then participated in an interview to discuss the impact of knowing their style. The results suggested that program leaders often reflect on how they plan to grow as a leader and highlighted the value of integrity and an open-door policy. Additionally, it was suggested that insight to leadership style promoted self-reflection, reaffirmed leader strengths, and built leader confidence. The authors concluded that the most effective program directors used a blend of both styles—a

transformational stance with the incorporation of the transactional contingency reward system (Snodgrass & Shachar, 2008). However, the study lacked generalizability and was limited in that the sample size was very small and the geographic region was specific to the Midwest United States.

The literature on leadership suggests that leaders are largely responsible for student outcomes by way of their support for and influence on faculty as well as their responsibility to oversee programmatic activity and maintain quality (Hertlein et al., 2017). MFT programs are especially tasked with retaining skilled practitioner-scholar faculty members for the purpose of supervising and supporting the development of efficient and competent graduates (Earl, 2018; Samman & Seshadri, 2018; Zamboni & Zaid, 2017). To date, it is not clear how MFT program directors influence faculty retention and development, and by way of this, student success.

Rigor in Marriage and Family Therapy Programs

The need for adequate mental health services in the United States continues to rise and has long been documented in research, and graduate level MFT programs have grown to meet this need (Chen et al., 2019; Hardy & Keller, 1991; McDowell et al., 2002; Mize et al., 1996; Nelson et al., 2007; Parker et al., 2003; Touliatos & Lindholm, 1992). Graduates of MFT programs go on to work as knowledgeable, competent, practitioners of psychotherapy in the mental health field (Bernal, 2009; Gurman & Kniskern, 2014; Lambert-Shute et al., 2018; Nelson & Palmer, 2001; Whittenborn et al., 2018).

MFT programs provide a dual emphasis on dyadic skills and the development of clinical skills needed to treat mental health conditions (Avila et al., 2017; Cornille et al., 2003). They focus on training students for direct clinical work. A master's degree is the minimum required level of education needed to apply for a state license to practice independently. These programs are regulated by The Commission on Accreditation of Marriage and Family Therapy Education (COAMFTE) and the American Association for

Marriage and Family Therapy (AAMFT) (Earl, 2018; Hodgson et al., 2005; Northey, 2010). Master's programs in marriage and family therapy follow a core competencies curriculum that was designed to equip graduate students with the skills needed to become competent practitioners. The core competencies consist of several domains of theory and skill and cover content knowledge related directly to MFT practice. Demonstrated mastery in the program is expected and presumably produces competent practitioners (Caldwell et al., 2011; D'Aniello & Perkins, 2016; Gerhart, 2010; Miller et al., 2010; Mittal & Wieling, 2006; Nelson & Graves, 2011; Nelson & Smock, 2005; Piercey et al., 2016;).

Miller and Lambert-Shute (2009) used survey data to explore the relationship between graduate level MFT training, career aspirations, and field preparedness. The results of their study showed that students felt their training was practical and useful, and they also felt well prepared to work in the field. It is notable, however, that career preference was toward research and teaching as opposed to direct clinical work. This preference could suggest a resistance toward or feeling ill-prepared for direct work with clients. It was suggested that this insight on preferred career paths might influence the development of core competencies in the future by broadening them to include a greater focus not only on research and academia, but also the foundational skills necessary to work in diverse and challenging careers with direct client contact (Peterson, 2017).

The suggestions given by Huff et al. (2014) for improving skills in MFT students included providing opportunities for practice and giving explicit encouragement and support. It was further suggested that those in supervisory positions who conceptualize themselves as a supportive vessel, should be aware of their supervisee's personal issues and model therapeutic skills that would support the transition from student to competent practitioner. It was suggested that ongoing dialogue about the practical application of formal skills and their value in therapy was needed. Open communication and ongoing discussions with constructive feedback were said to be the most

effective means of increasing student comfort and competency (Huff et al., 2014).

The literature suggests that while MFT programs prepare competent practitioners, the relationship between leadership style and student success is not well understood. Students have reported feeling better equipped to practice and succeed in their programs when supported by program administration (Theisen et al., 2017). However, little has been done to operationalize, understand, and define support (Piercy et al., 2016). Since research has suggested that transformational leaders tend to be perceived as empathic, supportive, and inspirational, the practice of transformational leadership in MFT programs can also be further reviewed (Woods-Giscombe, 2017).

Leadership in Marriage and Family Therapy Programs and Other Mental Health Fields

Research specific to MFT programs is severely lacking, and there is very little available on MFT program leaders (Harris-McCoy et al., 2017; Marlowe et al., 2020). For the purpose of this study, MFT program leaders are identified individuals in administrative positions including but not be limited to the following titles: dean, associate dean, department chair, program chair, program director, and faculty liaison. Bernal (2009) reviewed higher education trends and the connection to MFT programs and administration and noted significant stress associated with financial constraints and the ability to provide a quality and rigorous educational experience. Additionally, said constraints impact the development of a solid leadership team (Bernal, 2009). The steady trend of financial constraints has impaired program development and growth. It can be assumed that student and staff connection is limited due to decreased rates of full-time faculty, reduced course offerings, fewer touch points, and limited support services (Mitchell et al., 2017; Salts et al., 1990). A lack of adequate resources could result in a lower rate of skills acquisition. Additionally, much of the research in higher education leadership has focused on constraints rather than the mental health and personal needs of students (Lipson et al., 2019). It has been suggested that MFT program leaders be flexible to meet the complex

needs of the program operation, the student body, and general budget oversight (Bernal, 2009; Dragoo & Barrows, 2016; Salts et al., 1990). This implies a need for MFT program directors to be both flexible and adaptable to meet organizational demands and to also accommodate a diverse faculty and student body with equally demanding needs.

It has been suggested that mental health practitioners make dynamic leaders in higher education settings (Miller, 2016; Wang & Frederick, 2018). There is, however, a lack of leadership style inquiry in the mental health field (Aarons, 2006; Gharabaghi & Anderson-Nathe, 2016; Kois et al., 2015). Whitsett (2007) notes the general lack of research on leadership styles of academic department program leads. He asserts that while program chairs hold the heavy burden of assuming responsibility for major decisions, they seldom receive adequate training (Whitsett, 2007). The decisions made by program leaders can impact students directly. They can impact the allocation of resources, staff morale, and the connection between administration and students.

Aarons (2006) argues that leadership style is a critical point of focus in both practitioner competency and consumer satisfaction. He adds that transformational leadership is at the core of the student learner and clinical supervisor relationship, in part of its intimate nature. Transformational leadership is suggested as being especially relevant to the student practitioner and clinical supervisor relationship due to a need to motivate the supervisee, build upon inherent strengths, and support the transition of theoretical skills gained in the classroom to clinical practice.

Avila et al. (2017) additionally explored the relational aspect of supervision in the MFT field. A quantitative, longitudinal study was conducted and aimed to understand how competent supervisors perceived their student trainees to be. It also aimed to propose a model of research that was more similar to the practical aspects of the field where the relationship is inherent and can influence modes of practice. The study surveyed 205 supervisor-supervisee dyads in total. The goal was to assess the validity of Dyadic Supervision Evaluation (DSE) for

causality and to determine if relational elements should be further explored within the context of supervision. They hypothesized that several relational factors existed in the supervisory relationship and could influence competency. These included perceived safety in the supervisory relationship, alliance, satisfaction with the working relationship, and general engagement. The results showed that the DSE was effective in capturing the psychometric aspects of the supervisory relationship. However, the study encouraged further exploration of the efficacy of the DSE in evaluating relational aspects of the MFT supervisor-supervisee relationship (Avila et al., 2017).

Bass and Steidlmeier (1999) explored the difference between authentic and pseudo transformational leaders and cautioned the dangers of pseudo transformational leadership. The authors asserted that authentic transformational leaders appeal to the best in people, and this allows for shared goal setting and attainment. The result is harmony and quality work. In contrast, the pseudo-transformational leaders, defined as a “fake” transformational leader, pursue self-interests, have skewed morals and bring out far fewer desirable qualities in subordinates (Hughes & Harris, 2017). These can include “conspiracies, unreal dangers, excuses, and insecurities” (Bass & Steidlmeier, 1999, p. 188). In all, transformational leaders seek to empower rather than force compliance, and this activates transformation within the subordinates (Bass & Steidlmeier, 1999). For these reasons and the vulnerable nature of the work that MFTs do, transformational leadership appears as a viable option for practice.

Aarons (2006) contrasts transformational and transactional leadership by noting that transactional leadership is based upon exchange and the meeting of quotas and objectives. While some level of “building up” occurs via this leadership style, it is about recognizing accomplishments and milestones rather than building on a personal level. This contingency-based praise can often result in fear of rejection or failure. Transactional leadership can be effective in structures (such as MFT graduate programs and post graduate settings) where EBP practice and measurable outcomes are a pillar of

progress and competency. However, this leadership style fails to recognize another core area that defines an effective MFT, which is the possession of relationship skills. Relationship skills are typically inherent in personality traits. The preceding literature suggests that transformational leaders will target these personality traits, facilitate their growth, and produce competent, skilled practitioners.

Aarons and Sommerfeld (2012) make mention of the lack of literature on leadership practices in the mental health field. They explored transformational leadership as a fundamental feature of developing working environments for MFTs in which innovation and the practice of EBP exists. Their results showed that transformational leadership paved the way for higher levels of innovation, and in so much, increased supervisor-supervisee contact. This increased contact and the autonomy resulted in the increased practice of EBPs. This study further suggests that a transformational leader garners a greater subordinate buy-in and is likely to reach targeted outcomes.

The Aarons and Sommerfeld (2012) study suggested that transformational leaders support emerging clinicians by building upon an inherent skill set and supporting the development of genuine personality traits that make clinicians more adept in providing quality client care. Transformational leaders focus on the relationship, thereby, supporting and propelling the clinicians they supervise toward growth. There is a focus on positive, reciprocal relationship. Literature suggests that the transformational leadership style is best suited for those in critical positions who share responsibility for developing competent psychotherapists.

Directions for Future Research

The existing research on leadership in the field of mental health supports the notion that in order to prepare students to become competent psychotherapists, program leaders must be adaptable and personable. It has been suggested that much of the research on competency and the development of student therapists is built on theory and skill and does not

address the relational aspects that are specific to the MFT field (Avila et al. 2017). Further, the existing literature on leadership in higher education focuses on institutional demands, constraints, and program completion and competencies. Program leadership that is incentives driven (grades, core competencies, and outcomes) will satisfy some demands placed on leaders and may drive student performance in some domains. However, it may show limited professional progress and personal growth among students. Long-term professional gains may be halted if the relational, personal and character development aspect of training is neglected.

Much more inquiry and analysis of leadership in MFT programs is needed. A deeper understanding of relationships and interdependent variables as related to the training of therapists would be beneficial. Research in this area could increase validity and credibility for the MFT field as whole. Given the competitive nature of the mental health field and the job market that graduates will enter, advances in training competent practitioners can be made via conceptualizing support, identifying how leaders connect to students, and assessing the use of the administrator-student relationship to support therapist growth and development (Avila et al., 2017). Future research could focus on identifying program leadership styles so to promote self-reflection, determining if programs with transformational leaders have improved student outcomes, exploring the extent to which program leaders interact with student therapists, the nature of these interactions, and if interactions support the development of a practical skill set. Several variables such as support, relationship, and level of interaction can be quantified and measured to determine their influence on leadership and its relationship to students' experiences and professional development. Quantitative research can then be conducted. Additional consideration can be given to department resources, demographics and cultural variables, geographic region, length of time in a leadership position in academia and in the specific position held, and personal factors that can impact workplace performance (i.e. stress or family life). Additionally, qualitative

inquiry into the self-reflection process of leaders in MFT programs would provide a depth of understanding of the lived experiences of MFT program leaders, their approaches toward furthering the mission of the institution and field at large, and their understanding of the use of the relationship in professional development.

Conclusion

MFT programs are structured, rigorous programs within higher education. The literature suggests that on the surface level, they produce practitioners that are sufficiently prepared to enter the working world. At the foundational level, MFT graduate programs prepare students with a solid skill set which translates to adequate client care and therapeutic outcomes. However, students emerge from their programs to join a complex workforce where they rely on relationships and work-related confidence to readily use their attained skill set (Avila et al., 2019). The extent to which relationships are fostered and modeled within MFT programs remains unclear.

There is a great deal of research presented in this paper to support the importance of focusing on both professional and personal skill sets when educating and training future therapists in graduate programs. There is a strong connection between this dual focus and optimal sense of preparedness to practice. In addition, the literature suggested that student competency was dependent not only on the ability to apply foundational skills but also on the practitioner's ability to develop and sustain a relationship with clients. The implication of this dual nature is that students need preparation beyond formal textbook training. Transformational leadership is suggested to support student psychotherapists in their need to attain skills, feel positively so that they can purposefully apply these skills, and feel empowered and supported as individuals in both their successes and trials.

The review of literature demonstrated a need for more attention on MFT program leadership style and the implications it has on student outcomes and overall organizational success. To date, very little data exists on leadership in MFT programs and even less on how these leaders balance organizational and student needs and the

relationship between administrators, faculty and the student body. Of notable mention, there are two publications that support the efficacy of transformational leadership in an organizational setting when working with therapist practitioners (Aarons, 2006; Aarons & Sommerfeld, 2012). There is extensive research on leadership in higher education and MFT specific literature supports the use of transformational leadership. MFT programs have an inherent, relational focus. Administrators, faculty, and students must interact on a consistent basis as MFT programs tend to be smaller, have a niche focus, and the transmission of skills often occurs in the context of relationships. The preparation toward professional practice is relationship based and requires a sensitive, dynamic, in-tune leader.

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Capital Market Linkage to Economic Growth in Nepal

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ABSTRACT

This article examines the causal relationship between capital market development and economic growth in Nepal using annual time series data from 1994-2019. Total market capitalization is used as a proxy of secondary market development and the total public issue of securities in a particular year is taken as an indicator of primary market development. Using the Johansen cointegration test and vector error correction method (VECM) in regression analysis, the study reveals that capital markets in Nepal are supporting economic growth through efficient fundraising, efficient allocation of resources, fair price determination and liquidity. The findings from this study conclude that there is a unidirectional causality running from capital market development to economic growth in both the long-run and short-run. However, this study found no support for causality running from economic growth to the capital market. Therefore, the findings from this study recommend policies that increase the reach of the capital market to small and medium enterprises (SMEs) and individual investors.

Keywords: capital market, market capitalization, primary market, economic growth, Nepal

Introduction

Within the past two decades, there was a significant interest among researchers regarding the causal relationship between financial development and economic growth. The academic literature on financial sector development and economic growth can be traced back to 1911 when Joseph A. Schumpeter, in his book, *The Theory of Economic Development*, argued that a well-structured financial system promotes economic growth through encouragement of innovation in business and efficient allocation of resources in the areas where it is needed the most. However, this topic gained importance among economists in the 1990s. This may be the effect of the globalization of business, the advancement of technologies in the financial market and global integration of financial markets. A well-structured, efficient, systematized and sustainable financial system is a prerequisite for real sector growth (Mishkin & Eakins, 2018). The development of the capital market reflects the economic growth of a country because the need for investment in fixed assets in the expansionary economy is financed by raising funds from capital markets (Levine & Zervos, 1998). Another important function of the capital market is that it offers risk management services that encourage the entrepreneurs to

commercialize their innovative ideas, which ultimately results in output growth. Similarly, the capital market offers liquidity in the economy that also aids the efficient allocation of resources in real sectors. The competitive pricing of securities and a large range of financial instruments allow investors to better allocate their funds according to their respective risk and return appetites, thereby, supporting economic growth (Madura, 2015).

Access to finance by small and medium enterprises (SMEs) is a common problem, especially in a developing economy like Nepal. The main reasons for the credit constraints of SMEs are the cost and difficulty of evaluating creditworthiness (Wendel & Harvey, 2006). However, SMEs have a major contribution to economic growth in both developing and developed countries. The development of the capital market eases the credit constraints by making available the financial resources required by SMEs and large corporations. GDP growth of Nepal is low as compared to other south Asian countries, and there is a high trade deficit (Nepal Rastra Bank, 2018). The development of the capital market can help to improve the situation by supporting the implementation of the most innovative entrepreneurial ideas that are necessary for output growth (Ibrahim &

Alagidede, 2017). A well-developed financial market not only supports the innovative ideas to be commercialized, but it also reduces the effect of macroeconomic volatility like higher inflation and volatile interest rates (Aghion et al., 2014).

The development of the financial market supports economic growth more for developing countries than developed countries (Arcand et al., 2015). The studies on other South Asian countries like Pakistan and Bangladesh have also found the capital market development contributing significantly to economic growth (Palamalai & Prakasam, 2015; Sharif & Afshan, 2016). Therefore, this study, using annual time series data published by the Ministry of Finance and applying the vector error correction method of analysis, investigates whether the capital market development in Nepal is contributing significantly to economic growth, like in other South Asian countries, through easing credit required by the SMEs and other corporations, and ensuring the efficient allocation of financial resources to the sectors of the economy that need it the most.

Literature Review

Theoretical literature regarding financial development and economic growth was not much cited before the 1990s even though some economists, such as Schumpeter (1911), emphasized the importance of financial development on economic growth. Some of the studies have findings that support to the supply-leading hypothesis meaning that the capital market development leads to economic growth (Nguyen, 2019; Omri, et al., 2015). On the other hand, studies by Ho and Odhiambo (2013) and Helhel (2018) found support to demand-following hypothesis meaning that economic growth leads to capital market development. However, Cecchetti and Kharroubi (2015) and Arcand et al. (2015) found a U shaped finance-growth relationship indicating that a certain level of economic growth leads to economic growth which then leads financial sector development.

A cross-country study by Durusu-Ciftci et al. (2017) revealed a positive effect of the capital market on economic growth in the long-run. In Pakistan, stock market development and

economic growth are strongly related, in as much as economic growth supports capital market development and capital market development supports economic growth in the long-run. Thus, the development of one ensures the development of the other. However, the short-run the stock market development leads to the economic growth (Nazir et al. 2010). In ASEAN countries, the stock market and economic growth influence each other (Azam et al., 2016; Pradhan et al., 2014). In South Africa, the relation is one-directional, running from capital market development to economic growth (Nyasha & Odhiambo, 2015). On the other hand, Odhiambo (2009a) concludes that the causality between economic growth and capital market development is sensitive to the proxy used. However, Pan and Mishra (2017) found a very weak causality between capital market and economic growth in Central Europe. Therefore, the causality between the capital market and economic growth varies with the level of development of the capital market. Looking at the primary market development, Andriansyah and Messinis (2014) found no effect of the primary market on economic growth but did determine its benefit to the development of the secondary market.

The majority of the studies in the finance-growth nexus are cross-country studies that ignore specific characteristics of individual counters such as industrial structure, level of development of the financial market, government control in the financial market and degree of effective governance (Durusu-Ciftci et al., 2017; Omri et al., 2015). On the other hand, the role of the primary market has been ignored in almost all studies. The contribution of this study to the existing literature is that it focuses on a single country, Nepal, unlike other cross-country studies. Additionally, it includes both secondary and primary market development, which is not considered by other studies.

	LGDP	LMCAP	LPIS	LFXCAP	LCPI	LINV	LREM	LTO
Mean	9.960	14.132	7.964	22.798	1.886	12.379	11.309	12.586
Median	9.901	14.110	7.851	21.540	2.084	12.163	11.502	12.404
Maximum	10.410	16.755	10.884	36.930	2.535	14.584	13.687	14.231
Minimum	9.636	11.720	5.538	10.200	0.884	10.706	8.152	11.169
Std. Dev.	0.238	1.783	1.787	5.362	0.447	1.152	1.835	0.904

Table 1. Summary of Statistic Variables.

Note: N=26. This table presents the descriptive statistics of the variables used in the analysis. Letter L in all variables denote log operator. GDP = per capita GDP, MCAP = total market capitalization, PIS = total amount of public issue of securities, CPI = consumer price index expressed in annual percentage change, INV = total investment in the economy, FXCAP = total amount of fixed capital formation, REM = net amount of remittance, and TO = trade openness expressed as a sum of import and export.

Source: Ministry of Finance, Nepal and World Bank Database

Variables and Data

Variable Definitions

Real GDP per capita is taken as the measurement of economic growth, specifically, output growth including the contribution of labor, physical capital and human capital. GDP per capita is the most frequently used variable in literature to measure the total output growth with population growth (Bayar et al., 2014; Estrada et al., 2010;). Since the size of the secondary market is reflected by total market capitalization (Arestis et al., 2001), it is taken as a proxy of secondary market development. However, the secondary market cannot represent the whole capital market in Nepal because many of the private companies have not listed their shares and bonds in the secondary market. Therefore, to include the role of the primary market separately, the public issue of securities by private corporations is taken as a proxy of primary market development.

Economic growth may be affected by many other factors besides stock market development. To check whether the causality between capital market and economic growth remains the same, even if the impact of other variables are also considered, macroeconomic variables such as remittance, fixed capital formation, total investments, consumer price index and trade

openness are also used as control variables in various regression equations.

Data

The organized secondary market in Nepal was started in 1994 after the establishment of the Nepal Stock Exchange (NEPSE) in the same year. Therefore, 26 years of annual time series data for all variables was taken from 1994 to 2019. All data was taken at its real-time value. However, GDP per capita was taken as a 2010 constant price. All data was log transferred to normalize the trend in the data series. Data for all variables except for GDP per capita were taken from the Ministry of Finance, Nepal. However, data for real GDP per capita was taken from the World Bank database. Table 1 presents the summary of statistics of dependent, independent and control variables used in the study.

Test of Stationary

In time-series data, there may exist a time trend. To check for the presence of trend or unit root, the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests were applied, using the equation (1) in the process.

$$\Delta Y_t = \alpha + \gamma Y_{t-1} + \lambda t + \beta_i \Delta Y_{t-j} + \varepsilon_t \dots \dots (1)$$

where t is the time index, α is an intercept, λ is the coefficient on a time trend, γ is the coefficient

Variables	ADF		PP		Order of integration
	Level	1 st Diff	Level	1 st Diff	
LGDP	2.5626	-4.1317**	9.1569	-4.1067**	I(1)
LMCAP	-0.3173	-3.4609**	-0.4014	-3.4866**	I(1)
LPIS	-0.5231	-6.6276**	-0.3144	-6.6276**	I(1)
LREMI	-1.3267	-5.6044**	-1.4293	-5.5889**	I(1)
LTO	1.6156	-5.3347**	2.6701	-5.1340**	I(1)
LINV	1.1687	-4.3540**	3.7900	-4.3201**	I(1)
LFXCAP	0.9102	-6.4302**	0.4234	-6.3947**	I(1)
LCPI	-2.3762	-5.9552**	-2.3562	-5.9341**	I(1)

Table 2. Unit Root Test.

Note: This table presents the results of the test of unit root in data using the Augmented Dickey-Fuller (ADF) test and Phillips-Perron (PP) test at their level and first difference. *I*(1) denotes that the variable is stationary at first difference.

** denotes $p < 0.05$.

presenting process root, p is the lag order of the first-differences autoregressive process, and ε_t is an independent identically distributed residual term. Table 2 shows that all the variables are not stationary at level in either the ADF or the PP tests. However, in the first difference, all become stationary as $p < 0.05$.

Econometric Methodology

This study follows the following basic models:

$$GDP_t = \alpha + \beta(CD)_t + \lambda(\text{Control})_t + \varepsilon_t, \dots \dots (2)$$

$$CD_t = \gamma + \delta(GDP)_t + \phi(\text{Control})_t + U_t, \dots \dots (3)$$

where GDP represents per capita GDP, CD represents capital market development indicators, and control consists of macroeconomic variables used as control variables. The two financial development indicators were total market capitalization and total public issue of securities. Control variables included net remittance, fixed capital formation, trade openness, total investment and change in

consumer price index. Equation (2) was used to check the causality of capital market development on economic growth and Equation (3) for reverse causality.

Johansen Cointegration Test

The variables in this study were not stationary at level, which indicates that they may be cointegrated. The presence of cointegration was checked by using Trace statistics developed by Johansen (1991).

$$\lambda_{\text{trace}}(r) = -T \ln(1 - \hat{\lambda}_i) \dots \dots (4)$$

where T = number of observations and $\hat{\lambda}_i$ = the estimated value of the characteristic roots. If the series were cointegrated, a vector error correction model (VECM) was used. Since all variables in the present study were *I*(1), the VECM method was applied in regression analysis.

Vector Error Correction Method (VECM)

Models and variables	Hypothesized No. of CE(s)			Identified No. of CE(s)
	None	At most 1	At most 2	
	(r = 0)	(r ≤ 1)	(r ≤ 2)	
Model 1: LGDP, LMCAP	24.085*	1.9554		1
Model 2: LGDP, LMCAP, LREMI	46.8076*	9.8633	0.0121	1
Model 3: LGDP, LMCAP, LFXCAP	44.2747*	13.3573	0.4801	1
Model 4: LGDP, LMCAP, LREMI, LTO	48.388*	23.6685	7.7889	1
Model 5: LGDP, LMCAP, LREMI, LCPI,	42.2633*	11.1194	2.4628	1
Model 6: LGDP, LMCAP, LREMI, LCPI, LTO	168.80*	93.70*	48.33*	3

Table 3. Cointegration between Market Capitalization and Per Capita GDP.

Note: This table presents the results from the test of cointegration using Trace statistics. LGDP is a dependent variable and LMCAP is a secondary market development indicator. CE = cointegrating equations.

**denotes $p < 0.05$.*

Engle and Granger (1987) show that if Y_{1t} and Y_{2t} are cointegrated with the same order, then a VECM can be used to analyze the relationship among these variables.

$$\Delta Y_t = \beta_0 + \beta_1 \Delta Y_{t-1} + \theta_1 \Delta X_{t-1} + \delta_1 \Delta A_{t-1} + \phi Z_{t-1} + \mu_t \dots \dots (6)$$

where Y represents the dependent variable, X represents the independent variables, A represents control variables and Z is the error correction term (ECT), which is the OLS residuals from the following long-run cointegrating regression:

$$ECT_{t-1} = Y_{t-1} - \beta_0 - \beta_1 X_{t-1} - \beta_2 A_{t-1} \dots \dots (7)$$

cointegration. The results confirm that variables in the model were cointegrated and at least one cointegrating equation could be formed from each model. Thus, VECM was applied in regression.

Panel A of Table 4 reports the coefficients of long-run causality from market capitalization to per capita GDP. Market capitalization is the variable of main interest in

Results

Causality between Secondary Market and Economic Growth

The causal relationship between market capitalization and per capita GDP is analyzed in seven different model specifications with altering control variables. Table 3 presents the different model specifications and their order of

Panel A: long-run regression result (t-ratios in parentheses)						
Model	1	2	3	4	5	6
LMCAP	0.175** (15.14)	0.313** (8.03)	0.166** (14.12)	0.178** (4.31)	0.447** (8.79)	0.05** (10.46)
LREMI		-0.111** (-3.09)		-0.034 (-1.21)	-0.24** (-5.16)	-0.03** (-6.65)
LFXCAP			0.01** (2.40)			
LTO				0.134* (1.67)		0.25** (31.18)
LCPI					-0.19** (-3.15)	-0.03** (-6.22)
C	7.47	6.79	7.38	6.14	6.72	6.54
Panel B: Model statistics						
Adj R ²	0.568	0.703	0.711	0.632	0.693	0.563
DW	2.17	1.87	2.51	1.67	2.14	1.97
F-stat	6.796**	8.436**	8.72**	5.19**	6.53**	3.58**
Panel C: Error correction term (t-ratios in parentheses)						
ECT	-0.148** (-4.56)	-0.093** (-4.96)	-0.161** (-5.41)	-0.10** (-3.81)	-0.091** (-4.82)	-0.64** (-3.40)

Table 4. Market Capitalization Regression on Per Capita GDP.

Note: ECT = Error Correction Term. DW = Durbin-Watson statistics

* $p < 0.05$ and ** $p < 0.01$.

this analysis. Model 1 is a bivariate model, which does not include controls. All other models include certain control variables. All the coefficients of LMCAP were positive and statistically significant at 1% level. The coefficient in model 1 is 0.175, which indicated that a 1% increase in market capitalization leads to 0.175% increase in per capita GDP. The same method of

interpretation is applied to all other coefficients too. Although the elasticity of coefficients of LMCAP has changed with the inclusion of controls in the model, still they retain their significance. This shows that market capitalization significantly contributes to the economic growth of Nepal in the long-run. This also implies that the price discovery function and

liquidity functions offered by the secondary markets have an important role in effective resource allocation that results in output growth. Similarly, fixed capital formation and trade openness contribute positively to output growth. However, the consumer price index has a negative impact on economic growth indicating that macroeconomic volatility hinders economic growth.

Panel B of Table 4 presents the model statistics. All models are significant at the 5% level. Panel C shows the coefficients of error corrections with their respective t-ratios in parentheses. It is considered as good in terms of model fit if this coefficient lies between 0 to -1; however, if it lies between 0 to -2, independent variables can explain the dependent variable to some extent (Samargandi et al., 2015). All

Panel A: long-run regression result (t-ratios in parentheses)						
Model	1	2	3	4	5	6
LGDP	5.70** (10.86)	3.19** (3.64)	6.04** (9.88)	5.62 (0.61)	2.24** (2.92)	21.77** (7.03)
LREMI		0.35** (3.51)		0.19 (1.26)	0.54** (6.56)	0.60** (8.75)
LFXCAP			-0.06* (-2.40)			
LTO				-0.75 (-0.30)		-5.41** (-6.40)
LCPI					0.42** (4.06)	0.63** (8.09)
C	42.56	21.67	44.58	34.51	15.05	6.54
Panel B: Model statistics						
Adj R ²	0.03	0.196	0.03	0.25	0.195	0.179
DW	2.80	2.11	2.1	2.15	2.09	2.04
F-stat	1.14	1.77	1.11	1.83	1.59	1.43
Panel C: Error correction term (t-ratios in parentheses)						
ECT	-0.21 (-1.43)	-0.093** (-4.96)	-0.283* (-1.80)	-0.30** (-2.60)	-0.67** (-2.81)	-0.49** (-2.40)

Table 5. Per Capita GDP Regression on Market Capitalization
Note: ECT = Error Correction Term. DW = Durbin-Watson statistics

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

Panel 1: Wald test (Chi-square values and p-values in parenthesis)												
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	LGDP	LMCAP	LGDP	LMCAP	LGDP	LMCAP	LGDP	LMCAP	LGDP	LMCAP	LGDP	LMCAP
GDP		0.95 (.62)		3.1 (.21)		1.15 (.56)		4.13 (.13)		2.06 (.36)		1.21 (.54)
	20.36		23.69		31.56		13.69		21.26		10.24	
LMCAP	(.00)		(.00)		(.00)		(.00)		(.00)		(.01)	
Panel 2: Residual diagnostics												
Test	χ^2	p	χ^2	p	χ^2	p	χ^2	p	χ^2	p	χ^2	p
Norm	1.06	0.59	0.35	0.84	1.57	0.46	1.31	0.52	2.41	0.30	0.10	0.95
Auto.	2.02	0.37	1.92	0.38	5.08	0.08	1.06	0.59	4.78	0.09	1.57	0.45
Hetero	0.37	0.83	7.91	0.10	2.12	0.34	5.52	0.14	3.8	0.15	5.86	0.12

Table 6. Short-Run Impact of Market Capitalization on Per Capita GDP.

Note: This table presents the short-run causality between market capitalization and per capita GDP. Panel A includes the chi-square statistics from the Wald test and their respective p-values in parenthesis. Coefficients are presented as the impact of column variables on row variables. Panel B presents the residual diagnostics: normality (Jarque-Bera statistics), autocorrelation (LM test), and heteroskedasticity (ARCH effect).

coefficients in our analysis satisfy these criteria. The coefficient of the error correction term shows the speed of adjustment. The error correction term of model 1 is -0.148, meaning that any deviation in per capita GDP from long-run equilibrium is corrected at a speed of 14.8% by market capitalization each year. Similar interpretations can be made for other ECT coefficients.

Out of six model specifications, the coefficient of LGDP was significant in five models. Similarly, five out of six coefficients of error correction terms were also significant at a 5% level. However, none of the model specifications were significant at 5% and the adjusted R² values of all models were very small. Therefore, there is no clear evidence to show that economic growth causes capital market development in the long-run.

The short-run causality of market capitalization and economic growth is presented in Table 6. Short-run regression is run by including lag values of differenced variables included in the models. Appropriate lag length is selected by using the Akaike Information Criterion. The combined effect of all lag values of

market capitalization on GDP and GDP on market capitalization is examined by using the Wald test. The values in Table 6 should be interpreted as the impact of the column variable on row variables. All coefficients of the short-run influence of LMCAP on LGDP were significant at 5%. However, none of the coefficients of the short-run influence of GDP on MCAP was significant at the 5% level. This indicates that there is short-run causality running from the capital market to economic growth but not from economic growth to the capital market. The residual diagnostics presented in Panel B confirms that all models are free from normality, autocorrelations and heteroskedasticity problems.

Panel A includes the chi-square statistics from the Wald test and their respective p-values in parenthesis. Coefficients are presented as the impact of column variables on row variables. Panel B presents the residual diagnostics: normality (Jarque-Bera statistics), autocorrelation (LM test), and heteroskedasticity (ARCH effect).

Causality between Primary Market and Economic Growth

Five different models, taking the total public issue as an indicator of primary market development and their test of cointegration, are presented in Table 7. In all of the models, at least one cointegrating equation can be formed as indicated by trace statistics.

Models and variables	Hypothesized No. of CE(s)			Identified No. of CE(s)
	None	At most 1	At most 2	
	($r = 0$)	($r \leq 1$)	($r \leq 2$)	
Model 7: LGDP, LPIS	24.496*	3.373		1
Model 8: LGDP, LPIS, LINV	29.982*	11.344	2.518	1
Model 9: LGDP, LPIS, LFXCAP	46.209*	14.661	0.532	1
Model 10: LGDP, LPIS, LREMI,	46.215*	15.819*	0.192	2
Model 11: LGDP, LPIS, LFXCAP, LCPI,	51.273*	21.150	5.817	1

Table 7. Cointegration between Public Issue and Per Capita GDP.

*Denotes $p < 0.05$

Panel A: Long-run regression coefficients (t-ratios in parentheses)					
Model	7	8	9	10	11
LPIS	0.31** (5.34)	0.028** (2.10)	0.63** (6.14)	0.87** (5.17)	0.044** (2.64)
LREMI				-0.38** (-2.78)	
LFXCAP			0.02 (0.73)		0.001 (0.09)
LINV		0.205** (10.34)			
LCPI					-0.01 (-0.26)
C	7.47	7.20	4.30	7.39	9.63
Panel B: Model statistics					
Adj R ²	0.306	0.711	0.469	0.682	0.309
DW	2.24	2.28	1.65	1.86	1.97
F-stat	3.14**	6.187**	2.86*	5.50**	2.09
Panel C: Error correction terms (t-ratios in parentheses)					
ECT	-0.046** (-3.14)	-0.67** (-6.78)	-0.03** (-3.98)	-0.04** (-4.91)	0.11** (2.84)

Table 8. Public Issue Regression on LGDP.
*denotes p<0.05, **indicates p<0.01

Panel A: Long-run regression coefficients (t-ratios in parentheses)					
Model	7	8	9	10	11
LGDP	3.22** (2.30)	36.07** (3.09)	1.57 (1.04)	1.15 (0.96)	22.72** (7.30)
LREMI				0.44** (3.13)	
LFXCAP			-0.03 (-0.66)		-0.01 (0.09)
LINV		-7.39** (2.90)			
LCPI					0.30 (0.25)
C	24	259.71	6.73	8.53	218.75
Panel B: Model statistics					
Adj R ²	-0.03	-0.04	-0.25	-0.16	-0.07
DW	1.85	1.88	2.11	2.07	2.06
F-stat	0.86	0.90	0.57	0.71	0.84
Panel C: Error correction term (t-values in parentheses)					
ECT	-0.16 (-0.87)	-0.04 (-0.22)	-0.08 (-0.31)	-0.34 (-0.78)	-0.12* (-1.65)

Table 9. LGDP Regression on Public Issue.

*denotes $p < 0.05$, **indicates $p < 0.01$

The coefficients of the public issue (LPIS) in all models presented in Table 8 are positive and significant at the 5% level. This shows that primary market development has a significant and positive impact on economic growth in the long-run. Remittance and investment also have a positive impact on economic growth. The coefficients of error corrections presented in panel C are also negative and statistically significant showing that the deviation in long-run equilibrium is corrected by independent variables in the short-run.

Three out of five coefficients of GDP presented in panel A of Table 8 are significant. However, the adjusted R² of each model is negative, and error correction terms and model's F-statistic are also not significant. Therefore, this

does not provide support in favor of economic growth causing the capital market development in the long-run. Similar is the case for short-run causality because only three out of five short-run coefficients of LPIS and none of the coefficients of LGDP presented in Table 9 are significant. Similarly, none of the coefficients of error terms are significant at 5% meaning that economic growth cannot lead primary market development.

Table 10 shows that in the short-run, neither primary market development influences the economic growth nor economic growth influences the primary market development because none of the coefficients of GDP and LPIS is statistically significant. This shows that there is no short-run causal relationship between

primary market development and economic growth in Nepal.

Conclusion

The causality between financial development and economic growth has attracted many researchers and has become a matter of debate. Bank-based financial development is more cited in literature as compared to market-based financial development. Studies that consider the market-based financial development also focused on the secondary market only. This study examined the causal relationship between economic growth and capital market, covering both primary and secondary market development. Using 26 annual time series data from 1994 to 2019, the two-way impact of growth to finance and finance to growth has been analyzed employing Johansen cointegration and the vector error correction model.

The findings from this study suggest that both primary market development and secondary market development support the economic development of Nepal. This indicates that the development of the primary market offers fund-raising services to business organizations to

invest in fixed assets. These services significantly help the output growth of the country. On the other hand, the development of the secondary market offers competitive price discovery and liquidity in terms of the transfer of funds from one sector to another. This function helps the economic growth through efficient allocation of funds in the area that it is needed most. Similarly, the findings from this study also confirm that, in the short-run, the development of the stock market (both primary and secondary) contributes positively to economic growth. However, economic growth does not support the development of the capital market in the long-run and short-run. The findings from this study support the findings of Durusu-Ciftci et al., (2016), Palamalai and Prakaham (2015, Bayar et al., (2014), and Nyasha and Odhiambo (2015) that capital market development leads to economic growth. However, this study contradicts Andriansyah and Messinis (2014) who found no effect of the primary market on economic development, Carp (2012) who found no causal relationship between capital market and economic growth in Central and Eastern Europe, and Pan and Mishra (2017) who found no clear evidence of the financial market causing growth

Panel 1: Wald test (Chi-square values and p-values in parenthesis)										
	Model 7		Model 8		Model 9		Model 10		Model 11	
	LGD	LPIS	LGD	LPIS	LGD	LPIS	LGDP	LPIS	LGDP	LPIS
	P		P		P					
GDP		0.68		2.38		0.70		1.05		2.91
		(.71)		(.50)		(.87)		(.79)		(.23)
	2.79		17.62		14.73		27.43		0.23	
LPIS	(.250)		(.000)		(.002)		(.000)		(.89)	
Panel 2: Residual diagnostics										
Test	χ^2	p	χ^2	p	χ^2	p	χ^2	p	χ^2	p
Norm	0.24	0.88	0.70	0.70	0.41	0.81	0.02	0.99	0.90	0.63
Auto.	6.14	0.11	2.18	0.53	6.96	0.07	6.06	0.13	0.23	0.89
Hetero					6.22	0.10	0.35	0.94	0.20	0.90
.	1.41	0.70	4.27	0.23						

Table 10. Short-Run Impact of Public Issue on Per Capita GDP.

in China. In summary, this study found unidirectional causality running from capital market development to the economic growth in Nepal in the long-run and short-run. The findings support the supply-leading hypothesis.

Implications

Findings from this study suggest that increasing the size of the capital market to develop higher economic growth. The Nepal Stock Exchange can contribute to economic growth by increasing access to the people areas all over the country. Making a fully automated system may help to increase access to these people and people outside of the country. Similarly, increasing awareness about security transactions among people in rural areas may be another way of increasing the size of security turnover. Similarly, the policy of regulators that ensure fairness in trade and information can also help the development of the capital market. The reduction of barriers to the public issues of securities by the corporations may be helpful to the development of the primary market to spur economic growth. Further researchers can use new capital investment in the economy as an indicator of primary market development and the total value of securities traded as an indicator of secondary market to verify whether or not the result is consistent with the current study. Similarly, further research can extend this study by examining the role of capital market development on other areas of the economy such as the total factor productivity (TFP) growth.

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Strategies for Reducing Employee Turnover in Small- and Medium-Sized Enterprises

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ABSTRACT

Employee turnover leads to increased operational costs and workloads and affects sales performance. Reducing employee turnover is essential for managers of small and medium sized enterprises to minimize costs and increase sales performance. Grounded in the job embeddedness theory, the purpose of this qualitative multiple case study was to explore strategies the managers of small and medium sized enterprises use to reduce employee turnover that negatively affects sales performance. Data were collected using semistructured, face-to-face interviews, and a review of organizational documents. The participants consisted of three managers of small and medium sized enterprises in the Bronx, New York. After conducting the interviews, the interviews were transcribed. The transcripts and organizational documents were then uploaded into NVivo v12 software to analyze the data (i.e., organize data, create codes, and identify themes). The analysis revealed that recognition and rewards, training and career advancement opportunities, effective communication, and pay, compensation, and benefits are effective in helping to reduce employee turnover. Managers of small and medium sized enterprises may use the findings to devise recognition and reward strategies to decrease employee turnover. The findings and recommendations from this inquiry may help managers of small and medium sized enterprises, business leaders or owners, and human resource personnel to reduce employee turnover and improve sales performance, profitability, and competitiveness.

Keywords: employee turnover, job embeddedness, employee retention, employee retention strategies, and employee engagement

Globalization and technology have led to competition between companies' and managers' need to leverage the skills and expertise of their employees to gain a competitive advantage (Pasban & Nojede, 2016). Organizational managers consider company employees as valuable assets (Pasban & Nojede, 2016). Employee retention is the result of the actions an organization takes to keep employees within the organization. Turnover refers to the exchange between a past employee and a newly added employee. Turnover is measured as a percentage through the rate of employees leaving when compared to the average amount of employees. This percentage is referred to as the turnover rate. Employee turnover is a challenge that organizational managers face, resulting in a cost to the business such as recruitment, training, and advertisement costs, with an estimated annual value of \$11 billion in the United States (McManus & Musca, 2015). Information from the

U.S. Bureau of Labor Statistics in 2015 indicated that business managers in the United States expend \$60.6 million on employee turnover events. Turnover events include such things as advertisement, employee recruitment, and new employee training.

The focus of organizational managers is to not only attract employees but also to retain them to minimize cost and improve sales performance (Singh et al., 2014). When managers succeed in retaining their employees, they spend less compared to replacing employees (Guilford et al., 2014). Consequently, the goal of this qualitative multiple case study was to explore some of the strategies that managers of small and medium sized enterprises (SMEs) may use to reduce employee turnover events that affect sales performance.

Although there is a plethora of extant literature on employee turnover, there is a gap in the literature related to employee turnover in SMEs within the Bronx area of New York. Further research was needed to identify SME managers' perspectives regarding employee turnover and to understand their retention strategies to decrease turnover in this area specifically. In addition, research into a linkage between possibilities of social change and reduction of employee turnover had yet to be explored.

Literature Review

The conceptual framework of this research was the job embeddedness theory, and it was developed by Mitchell et al. in 2001 (William et al., 2014). Job embeddedness is the aggregate of social, financial, and psychological forces that influence employee retention (Nafei, 2014). An employee's attachment to peers and teams in the workplace, how they fit into the company's culture, and the sacrifice they perceive they would make when leaving a job, is called job embeddedness. Job embeddedness provides insights into the factors to keep individuals from leaving their jobs (Erkutlu & Chafra, 2017). The three dimensions of the job embeddedness theory are (a) link, (b) fit, and (c) sacrifice. Links are the connections that individuals have with others, activities, or their organizations (Zhang et al., 2012). These links may be formal or informal. The attachment links that employees have with others are social, financial, and psychological in nature (Zhang et al., 2012). Fit is the perception that employees have about their compatibility with institutions, their place of work, or their community (Karatepe, 2016; Zhang et al., 2012). Compatibility with a job or organization is important because of the ability for employees to foster comfortability (Zhang et al., 2012). Sacrifice is the perceived cost of leaving an organization or one's community (Zhang et al., 2012). Thus, employees may leave their organization if the sacrifice to leave is smaller than the psychological or material gains would be if they stayed (Kiazad et al., 2015).

Employee Turnover

During the lifetime of an organization, when employees leave for any reason, the

performance of the organization is affected. The phenomenon that impacts organizational performance is employee turnover. Employee turnover occurs either voluntarily, involuntarily, or due to downsizing (Parker & Gerbasi, 2016). According to Park and Shaw (2013), a voluntary turnover occurs when an employee decides to leave the organization on their own. This situation could be for reasons such as job dissatisfaction or the new job may be perceived as better than the current one (Park & Shaw, 2013). Sometimes, an employee voluntarily leaves their job because of pressure from management. This mainly occurs if the leadership of the organization cannot fire the employee for legal or contractual reasons (Parker & Gerbasi, 2016). According to Ferreira and Almeida (2015), the 1970s was the period when studies about employee turnover began to gain more attention. This turn of events made the phenomenon a critical issue for management scholars and industry practitioners (Saraih et al., 2017). A report from the U. S. Bureau of Labor Statistics (2018) showed that total separations (quits, layoffs, discharges, and other forms of employee turnover) increased from 60.9 million to 63.0 million from 2016 to 2017, respectively.

The Impact of Employee Turnover

Employee turnover can have negative implications for organizational performance. According to Park and Shaw (2012), human and social capital theories indicate that there exists a negative correlation between turnover rates and organizational performance. The relationship between corporate performance and collective employee turnover has been investigated from different theoretical perspectives such as Herzberg's two-factor theory (1974), the firm specific human capital (FSHC) theory developed by Baker in 1975, and Bernard's (1938) theory of employee turnover. But what most scholars have agreed upon is that employee turnover negatively impacts organizational performance (Lee, 2017).

Hale et al. (2016) asserted that the consequences following a turnover event are, in most cases, detrimental. However, the level of implications depends on an array of factors such as the nature of an employee's work, whether an employee works independently or otherwise, and how challenging it would be to replace the

employee financially and process-wise. Besides, the cost and time to replace the employee may be different for new employees than employees who have been in the organization for a while (Holtom et al., 2013).

Current theories do not give an estimation of how long a disruption of organizational processes (following a turnover event) could last. However, a study conducted by Hale et al. (2016) showed that the separation of employees from their organizations generally does not last long but managers may experience its impact immediately after the occurrence of a turnover event. According to Lee and Ha-Brookshire (2017) and Sun and Wang (2016), employee turnover may result in a waste of resources for recruiting new staff and cause disruptions in company operations as some employees may find it challenging to complete the tasks of the departed worker.

Studies indicate that in the United States more than 25% of employees work for an organization for less than one year and 40% of employees stay with an organization for less than three years (Holtom et al., 2013). Employee turnover has been a concern to organizations, particularly managers of SMEs, because of the cost associated with turnover (Inabinett & Ballaro, 2014). Employee turnover affects sales performance when there is a turnover event (DeConinck, 2014). The departure of an employee, particularly a salesperson, may impact sales levels and the overall organizational performance (Hausknecht & Trevor, 2011). Financially, according to DeConinck (2014), organizations in the sales industry can expect costs between \$75,000 and \$300,000 to recruit, interview, and hire an employee.

Employee Turnover may be Good for Some Organizations

Contrary to the views of many scholars, such as Wynen et al. (2018), employee turnover rates do not always negatively impact organizational performance (Parker & Gerbasi, 2016). Some scholars found the phenomenon to, at times, be beneficial to organizations (Zhang, 2016). According to Shakeel and But (2015), a balanced turnover rate may lead to a well-

functioning organization. For example, when the turnover event involves an underperforming employee, it is in the best interest of the organization (Parker & Gerbasi, 2016). The departure of an underperforming employee could reduce deficiencies in the activities of the organization, and therefore, result in positive outcomes (Wynen et al., 2018).

Although there is a plethora of extant literature on employee turnover, there is a gap in the literature related to employee turnover in SMEs within the Bronx area of New York. Further research was needed to identify SME managers' perspectives regarding employee turnover and to understand their retention strategies to decrease turnover in this area specifically. In addition, research into a linkage between possibilities of social change and reduction of employee turnover had yet to be explored.

Method

A qualitative inquiry was used for this research to explore opinions, attitudes, beliefs, and views of the participants. In this study, the objective was to explore the strategies that managers of SMEs use to reduce employee turnover events that affect sales performance. A qualitative multiple case study design was employed to seek an in-depth understanding of a real-life problem. A multiple case study occurs when participants are from more than one entity instead of a single case study where participants are from a single entity (Yin, 2018). A multiple case study was appropriate because the researchers could then explore the research question widely, equating to a robust study. By using semistructured interviews, we were able to understand participants' views on the successful strategies they used in reducing employee turnover and their experiences in dealing with employee turnover events.

Data Collection and Analysis

Face-to-face interviews were conducted in a semistructured form using open-ended questions that enabled the three participants from different organizations to express their views and feelings about their experiences. Examples of the questions include: What strategies have you used to reduce employee turnover events that affect

sales performance? What strategies did you find worked the best in reducing employee turnover events that affect sales performance?

Follow-up questions were asked to reach clarity on the answers. The three participants were experienced with having success in addressing turnover issues as managers. Data was triangulated to foster a better understanding and enhance the validity of the results. Company documents with information related to this study were requested. Some of the documents were about the employee performance appraisal process. The information derived from the documents concerned rewarding employees' achievements and contributions to the organizations and the respective promotions and rewards for deserving employees. Other documents were about employee professional development, which helped provide an insight into how the managers supported their employees through training programs such as workshops and seminars. The interviews were audiotaped to aid in the transcription of the interviews for data analysis.

Data was analyzed using Yin's (2018) five stages of data analysis: a) compiling of data, b) disassembling of data, c) reassembling of data, d) interpreting the meaning of the data, and e) concluding the data. The data was compiled, put into categories, and disassembled to ensure the number of themes were minimized, and that the themes were not variant. NVivo v12 was the software used for data organization, compilation, arrangement, and coding.

Findings

Semistructured interviews were conducted to help gain an in-depth understanding of the strategies that managers of SMEs use to reduce employee turnover. Four themes emerged from analyzing the data captured from the interviews and company documents. The most mentioned theme was recognition and rewards to retain employees. Offering bonuses and promotions to employees were seen by the managers to help employees feel valued and cared for, and this feeling, the managers relayed, encouraged employees to continue working within the organization for an extended time.

Training and career advancement opportunities was the second theme. This theme proposed to provide an increase in employee commitment to the organization that increased job embeddedness. SME managers stipulated that their employees be provided opportunities to improve their skills and understand their job through such activities as workshops or sponsorships to attend a conference. Providing employees financial assistance to pursue further educational opportunities was found to be a way to support employees to grow personally and professionally. Training and career advancement were indicated as ways to increase employee commitment and reduce turnover rates. The participants conveyed a third theme of effective communication through open, constructive, and honest discussions with employees on work-related matters. This theme was reported as fostering trust between management and employees that could help the employees to work for the organization for an extended time. Fair pay, compensation, and benefits serve as a source of motivation for employee loyalty according to the fourth theme observed through the data. These forms of incentives may cause employees to have a high satisfaction with the company, and thus, increase job embeddedness.

Theme 1: Recognition and Reward

Recognition and rewards emerged from the analyzed data as one of the strategies used to address employee turnover and its associated problems. Recognition and rewards are a form of openly acknowledging and appreciating the work of an employee so he or she will continue to work harder (Li et al., 2016). Employees who meet organizational expectations want their management or supervision to recognize their achievements (Bussin & Van Rooy, 2014), and those who exceed management expectations want acknowledgement for their accomplishments (Facer et al., 2014). Recognition helps to reduce employees' intentions to leave their organization because when management rewards them, they feel satisfied and wish to stay and contribute more to the organization's success (Langove & Isha, 2017; Herzberg, 1974).

All the participants (P1, P2, and P3) indicated that they used recognition and reward as a strategy to reduce employee turnover. According to P1, "When employees are aware that you recognize their contributions, they become motivated and committed to the organization." P2 and P3 also indicated that employees consider reward and recognition as a stimulus that energizes them and makes them want to stay longer and do more for the organization. P1, P2, and P3 said that recognition and rewards helped to reduce employee turnover because as P2 related, "recognition and rewards serve as incentives bring satisfaction and a feeling of importance to the employee."

Employees feel valued by their leaders when they receive recognition and are rewarded for their performance (MsenOni-Ojo et al., 2015), which may influence the employees' decision to stay, and therefore, reduce employee turnover. P3 disclosed to us that recognizing employees' efforts leads to increased job satisfaction for the staff, and satisfied employees feel encouraged and cared for. For example, P1 said that visiting employees at their desks and letting them know how appreciative they are for their contribution makes them feel at home and respected, and the fact that they came to the person to express their gratitude further instills this feeling.

Another aspect that was uncovered was that both monetary and nonmonetary incentives are effective strategies for reducing employee turnover. On nonmonetary incentives used as rewards for employees, P2 related the following:

We have instituted monthly and annual rewards to celebrate hardworking employees... yes we reward the employees in recognition of their excellent performance and contribution to the success of the organization. The selection of the employees depends on the feedback we receive from supervisors and my observations of how they handle customers. There is a system that our workers use to recognize their colleagues and recommend them to us for a reward. We also do get feedback from customers about our employees. I tell you that... recognition and rewards are effective in enhancing the employees' commitment and loyalty to the

organization, and this program uh... makes them want to be with the organization for a long time.

Additionally, P1 indicated that they recognize and reward employees by hanging their pictures on a "wall at the reception and in my office" for some time. P3 stated that although the organization collectively recognizes and rewards individual achievers, departmental heads and supervisors also acknowledge and reward the employees. P2 added that they also acknowledge their employees' contribution by rewarding them with pay raises and pay the workers on certain days where they are off work and stated, "This is a way of showing our appreciation to the employees for playing important roles in the organization."

Bambacas and Kulik (2013) linked rewards to job embeddedness, suggesting that reward systems are essential in ensuring employee embeddedness in organizations (Bambacas & Kulik, 2013). Thus, through recognition and rewards, managers of SMEs may increase employee embeddedness, which may help reduce turnover intentions. Gonzalez et al. (2016) stated that employers might increase organizational embeddedness through recognition of the achievements and also instituting some work-life programs that foster a family and friends-centered environment.

In a high-quality-leader-member exchange (LMX), employees get more recognition and receive rewards from their leaders or supervisors compared to employees in a low-quality-LMX (Shu & Lazatkhan, 2017). Adil and Awais (2016) stated that high-quality LMX exists when there is a feeling of trust in the relationship between managers and their employees. They also specified a belief held by the employees that the managers support the employees and want the employees to succeed in the organization. They indicated that in a low-quality LMX, the relationship between managers and employees is weak and characterized by poor communication when the managers know very little about the employees and do not provide support the employees need to perform efficiently. The workers who receive incentives may develop a positive attitude toward work, which may reduce employee turnover. However,

if leaders treat their followers unequally, followers (employees) who do not receive favorable treatment from their leaders may be unhappy and decide to quit their jobs (Shu & Lazatkhan, 2017).

Theme 2: Training and Career Advancement Opportunities

The second theme that emerged from the data was training and career advancement opportunities. The implementation of this theme was seen by the participants as creating opportunities for employees so that the employees could challenge themselves by handling tasks where they could improve their skills and competencies. P1 said, "We provide our employees with training and career advancement opportunities and help them to have a long-term goal that they work on accomplishing with our organization, and this helps reduce employee turnover." P1, P2, and P3 all emphasized the essence of training and educating workers and the concept of employee professional growth, which influences employees' intention to stay longer in their jobs. P1 shared that "developing a path for growth enhances employees' attachment to their organization."

All the participants noted that training and career advancement lead to employees performing their job more efficiently that in turn promotes their job content and satisfaction. According to P2 and P3, training advances employees' skills and competence, which results in job satisfaction. P2 said, "We provide training to all our employees at all levels, and... the training begins once the individual is employed." P3 noted,

We have a comprehensive onboarding training program that helps us to assess new employees' skills and competence levels so that we can provide them with the required training. Training not only makes employees efficient and fit for their respective roles... but also appreciate their value and capabilities.

Jang et al. (2017) supported this view that training opportunities for improvement not only make employees competitive, but also helps to retain employees. P1, P2, and P3 mentioned

that they organize workshops and seminars for employees. P1 said, "The workshops help skills development and prepare our staff for challenging tasks." P2 and P3 mentioned that access to in-house training serves as a means of education and advancement within the organization whereby employees want to remain within the organization. A review of P2's organizational documents revealed that the management had scheduled workshops and training programs for employees. P2 indicated that recruits are required to attend orientation programs, and the orientation helps provide the workers with the opportunity to learn about their specific roles. P2 said, "Every quarter, we provide training and mentoring for staff, and those programs help us to set goals for job advancement in our company, and this idea helps keep the employee working for the company." According to P1, "When employees know how to handle their job well, they perform better and become satisfied with their job, which can make them remain in the organization."

P1 also considered that employees who get training and education that advances their careers are motivated and have the tendency to maintain their job. As Xie et al. (2016) indicated, career advancement is an essential motivating stimulus, causing workers to continue working for their organization, which reduces employee turnover. Xie et al.'s assertion is also in line with P3's explanation that employees who value personal and professional growth, view opportunities for advancement from management as a sign of appreciation, so they commit their time and expertise to the development of the organization.

The job embeddedness theory aligns with participants' responses regarding training and career development opportunities. Embedded employees may have the chance to develop their potential and grow professionally (Mitchell et al., 2001). For example, employees that have a good fit with their job may have the opportunity to learn more skills and improve their know-how through on-the-job training, seminars, and conferences (Mitchell et al., 2001). There is a positive relationship between job embeddedness and the development of human capital (Holtom et al., 2006). For instance, highly

embedded workers are committed employees who may have more opportunities for training and advancement than other employees (Ng & Feldmen, 2013). The problem with offering opportunities for improvement is that it furthers the marketability of employees and may increase their intention to leave if they feel that they do not get the compensation and benefits that are commensurate with their skills and experience (Mathis et al., 2015; Sicilia, 2007).

Relating theory to theme 2, research shows that a high-quality LMX may increase employees' attachment to their organizations (Adil & Awais, 2016). Followers consider the support and resources they receive from their leaders. Employees with a high level of LMX relationships may have more opportunities for growth (Dulebohn et al., 2012). For instance, workers with a high level of LMX relationships may have some unique means of communicating with their leader in a way that helps them to stay within the organization and to take advantage of career advancement (Dulebohn et al., 2012).

Theme 3: Effective Communication

The interviews revealed that P1, P2, and P3 used effective communication as a strategy for reducing employee turnover. Effective communication leads to interpersonal relationships, and interpersonal relationships can help decrease employee turnover (Adil & Awais, 2016). The participants agreed that effective communication is a means of motivating employees to remain in their company. P2 indicated, "I sit down with my employees every month to interact with them and discuss any issues they are facing and help them resolve the problem." P3 posited,

Employees value my interaction with them. Whenever I have a one-on-one chat with my employees, I can see the excitement on the face. The interactions and exchanges of ideas that I have with the employees give them a feeling of being important and valued by the company management. I believe... that... every employee wants to be at an organization where their input counts.

P3 further explained that honest and constructive communications fostered long-term bi-directional interpersonal relationships between him and his staff. As P1 puts it, "Because of my strong personal and professional relationship with my employees, one of our workers who left the company came back, and he is now working with us." A participant's company's public document also showed that they organize monthly occasions to bring all employees together to chat and share ideas. According to P2, "We organize mini functions, where employees gather to share food, listen to music, and interact with each other, and sense of community makes the employees want to stay and work together for a longer period."

Further, employees may not accomplish their goals without clear and effective communication (Van De Voorde & Beijer, 2014). P1 noted that "interacting with our staff provides us the opportunity to identify their needs that we provide for them to make them achieve their short and long-term goals, which they hope to accomplish in our organization." According to P2, employees receive positive feedback through effective communication. P2 added that, "When you interact with employees, and they receive honest, constructive feedback, their confidence level goes up, as well as their commitment to the organization, and this approach helps retain the employees." P3 also explained that in business, it is essential to always have effective communication bottom-up and vice versa, stating that open and objective communication enhances job embeddedness and organizational commitment. P3 added that the employees become committed and identify themselves with the organization because they are involved in discussions that concern their work and future. P2 also said, "Effective communication with useful feedback can increase employee loyalty, which can help reduce turnover intentions." Another finding was that being available to all the staff so they can come in and discuss their issues is essential because it leads to employee retention and engagement (P1, P2, and P3). P1 posited that the feedback employees received from him was an integral part of communication that played an essential role in employee retention, because they felt more committed to

him in that they were understood. Effective communication means contributing ideas and listening to others' views and reflecting on those ideas in the interest of the organization (Van De Voorde & Beijer, 2014).

Open and honest communication also fosters respect. As all participants noted, employees show respect to their supervision when the supervision engages them in discussions that help the employees improve their performance and meet supervisors' expectations. P1 reported,

We take transparency seriously in this organization. We deem it essential everyone in this company knows and is aware of their respective roles. We make each employee know that they have individual goals that they need to achieve toward the broader organizational goal. We accomplish this mission by communicating everyone's role to them; we make sure that each employee has a full job description so that they can perform well without difficulty. Employees get frustrated if they do not understand what is expected of them... which can lead to dissatisfaction and intention to leave.

P1 stated that they spend ample time communicating with staff, and the approach has produced meaningful results over the years by making their company an exciting place to work. P1 also postulated, "We not only encourage communication between management and employees, but we also promote open and respectful communication between employees." P3 suggested that people always want to be "where they are welcome, where they can share their views, and where they receive constructive feedback that can help them overcome challenges and accomplish goals." P2 and P3 both said that communication can lead to reduced turnover events if one communicates in a timely, consistent manner. They added, and P1 concurred, that practical, honest, and open communication can help facilitate teamwork and collaboration among employees and reduce turnover intentions.

Theme 3 relates to the link component of job embeddedness theory, which promotes an increase in the level of connection between co-workers and between workers and their supervisors or managers as a result of effective communication. Based upon participants' information, effective communication brings people together, and when people feel connected at their workplace, they find it difficult to leave each other -a situation that improves employee retention. The LMX theory helps in furthering effective communication, personal, and professional relationship in the workplace and supports participants' responses on Theme 3. Managers and supervisors engage their subordinates meaningfully through direct and honest communication and constructive feedback, which are some of the tenets of the work engagement theory that managers employ to reduce employee turnover. Employee engagement, which is a workplace mode of fostering employees' emotional attachment to their work and organization, is a critical approach for retaining employees. All the participants agreed that effective communication fosters job embeddedness.

Theme 4: Pay, Compensation, and Benefits

All the participants indicated that a fair compensation helps employees feel committed to their organization. According to Pouramini and Fayyazi (2015), when employees do not receive fair compensation, their levels of motivation and commitment decrease. P1 noted, "Offering very competitive and fair pay can boost employees' morale and make them give out the best in them for the company." P1 also reported, "One of the means of reducing employee turnover is by offering fair pay or wages that commensurate workers' experience contribution." P2 and P3 agreed that a package that includes fair pay and attractive benefits is an effective strategy for retaining employees. Managers should come up with an employee benefits package that can motivate employees and influence their decision to stay in the organization (Green, 2016). P2 said,

As a small business, some employees would like to use our company as a steppingstone. For this reason, we make efforts to ensure that wages are

competitive to reduce the intention of employees searching elsewhere for jobs. So far, most of our workers are happy with the benefits they receive because we have not received any complaint regarding benefits. But... you know... people will always wish for more of everything that is good. We are humans, and I hope you understand.

Although monetary compensations may not be effective retention strategies (Idris, 2014), P1 and P3 were of the view that compensation and benefits such as increased pay helped to reduce turnover intentions. P1 mentioned that “offering pay or wages below the industry’s average does not help in retaining employees.” P3 insisted, “Financial incentives can positively impact morale and performance and can reduce turnover intentions.” Compensation strategies, such as flexible work schedule and hours, coupons, perks, and bonuses, increase employees’ commitment and intention to stay in an organization (P1 and P3). P2 stated that

I work with our employees on their schedules; I consult them for their input regarding their other appointments and plans outside of their work schedule to get a sense of which days they might want to take a day off. This approach is another way of engaging the employees on matters that affect the company, which makes them feel valued and respected by the management.

The views of P2 and P3 on the impact of competitive pay and benefits on employee turnover are in line with Ugoani’s (2016) assertion that competitive salaries can cause employee satisfaction and reduce employee turnover. P1 indicated that employees become more engaged, productive, and dedicated to their work and the organization when they receive pay and benefits that are proportional to their efforts and experience. P2 posited that bonuses are effective in increasing employees’ morale and commitment. “For example, if employees do an outstanding job, I give them bonuses to acknowledge their efforts and to encourage them to do more” (P2). P3 explained that “even though we do not have a huge budget for employee

benefits, we support our staff by sharing their expenses on health insurance. The employees understand our position financially, and so they are happy with the kind of support we offer them.”

Happy employees tend to be hard-working, more productive, and loyal to the organization (P1, P2, and P3). P1 explained that they offer health coverage to all employees. However, one has to be with the company for at least 6 months before they become eligible for the coverage. P2 explained that when management sees employees showing commitment to an organization, it is essential to reciprocate with goodwill to ensure that there is a mutual benefit for all parties. This view by P2 aligns with Adil and Awais’s (2016) statement that organizational policies that foster mutual benefits for both employer and employee can help reduce employee turnover.

The strategies mentioned by P1, P2, and P3 agree with Sankar’s (2015) findings that one of the ways to retain employees is to show care for the workers and offer fair compensations. Barnes et al. (2012) supported Sankar’s position that inadequate compensation packages could result in increased turnover intentions. According to P2, they endeavor to help their employees in any way possible. For example, employees who need money before their payday can get financial support from management, which they would then arrange to pay back on flexible terms (P2). P3 revealed that they give their workers coupons to purchase things such as gasoline and groceries. A well-packaged compensation benefit means taking good care of your workers (P1, P2, and P3). “Some days, I order lunch for everyone in the company. All of us share the food and take some to our homes. It is another way of relieving our workers of the burden of having to buy food on such days,” said P1. Although money may not be a motivating factor to some workers, Sarmad et al. (2016) postulated that managers could succeed in retaining their workers by paying and compensating them fairly. P1 and P3 agreed with this in that employers need to take care of their employees’ basic needs by offering competitive wages. According to P1,

As a small business, our long-term goal is to expand to other cities. Most of our

workers have been with the organization for a long time because we compensate them for what is worth their time and effort to keep them in the company.

Job embeddedness theory aligns with participants' responses regarding pay and compensation. The concept of organizational sacrifice, which managers use to increase the level of sacrifice employees might make if they leave their organization, is in line with the idea of offering fair or above-average pay and compensation, which managers use to attract and retain employees. By sitting around a table, sharing meals, and chatting, as P1 indicated, members of an organization may improve their personal and professional network, which enhances embeddedness and reduces employee turnover (Cheng & Chang, 2015). Because leaders (managers) are those who determine the resources for motivating their followers, high-level exchanges between the leader and followers may lead to the provision of benefits such increased salary and bonuses (Wobker, 2015). These benefits may foster employee satisfaction and reduce turnover intentions (Wobker, 2015). Mayfield et al.'s (2015) conclusion that fair pay and benefits can help reduce employees' intention to leave their organization supports the findings in this study on pay, compensation, and benefits.

Implications

The findings of this study are of relevance to HR practitioners, managers of SMEs, and organizations in other industries. Kossivi et al. (2016) and Mohamed (2015) indicate that employee training and development increases organizational performance, leads to job satisfaction, and reduces employee turnover. For instance, managers may help employees acquire new knowledge and skills to improve the employees' efficiency and competency, which may result in job satisfaction and increase employees' commitment to their organization.

Employees like to stay in a company where they can build their careers through training and education (Ambrosius, 2016). Managers may devise programs and policies that may foster workplace attachment by openly

expressing their appreciation to their employees or subordinates. For instance, managers may institute a reward system to acknowledge employees' performance.

Each employee may have needs or concerns to address to complete their duties efficiently and effectively. To help resolve such issues, organizational managers need to identify those concerns through effective communication. Through communication, both employer and employees may learn what is required of them to perform their duties (Van De Voorde & Beijer, 2014). Effective communication may enhance the level of trust and interpersonal relationships between management and employees and also lead to job embeddedness.

Recommendations for Future Studies

The findings of the study shed light on some of the measures that participants used to prevent employee turnover issues. Varying motives may lead to employee turnover, and managers need specific, tailored strategies to reduce turnover rates. Researchers should conduct further studies in other types of organizations than just in SMEs to increase the understanding of strategies those organizations use in order to provide a variety of perspectives. Such research may help unravel different employee retention strategies that this project did not reveal. The study population for this project may not reflect the perspectives of the managers in the banking industry in general. We recommend that researchers replicate this study but employ a more extensive study population to help improve the understanding of retention strategies from a more diverse and broad number of participants. We recommend further studies include SMEs whose managers have increased sales performance and profitability by addressing employee turnover issues. This may help provide management with comprehensive, practical, and effective strategies for reducing employee turnover rates.

Significance of the Research

Significant to Business Practice

The results of this study may bring about improvements in effective management practices

and work processes within SMEs. The findings may provide managers contemporary business ideas, essential leadership approaches, and strategies for motivating employees and for creating a conducive workplace atmosphere for all employees. Additionally, the results may provide managers with insights on employee training and development programs such as workshops and seminars on skills, personal, and professional development as a result of job embeddedness. Training programs and opportunities for professional development may lead to (a) improvements in employees' skills, (b) increases in employees' loyalty to their organization, and (c) motivation for employees to stay in their organization, which may result in a reduction of employee turnover costs and increased sales performance.

Implications for Social Change

The significance of the study with respect to positive social change includes that implementing the study results may help managers understand the needs of their employees. Understanding the needs of employees may improve the quality of employees' work/life balance. Implementing these strategies may not only help reduce employee turnover, but it may also help improve competitiveness. The increased performance of the SMEs may foster the social and economic life of the people in communities, including improved service. Employees, particularly those with skills and expertise, may help SMEs to provide higher quality services to the communities they serve, which may add value to customers. The information in the study may help SMEs to be competitive and continue to operate efficiently enabling corporations to start, maintain, or increase contributions to communities for supporting education and development programs benefiting citizens. Devising and implementing these strategies may not only reduce employee turnover, but it may further boost organizational managers' efforts in promoting positive social change. Thus, a reduction in turnover events may result in increased profits, part of which, managers of SMEs and other organizations may use to fund educational and developmental programs to benefit individuals and communities.

Limitations

One of the limitations of this study was that the validity and quality of the data depended on participants' answers, as the accuracy of a study's results depends on the information that participants provide (Maskara, 2014). The more accurate and honest the participants are, the more reliable and authentic the data would be. Because of the confidential nature of some of the SMEs, participants might not have been willing to provide some of the details necessary to fully answer the research question. The sample size was also small, which implies that the views of the selected managers may not represent the views of the study population, let alone be a representation of views outside of the study population.

Discussion and Conclusion

The object of this study was to explore the strategies that managers of SMEs use to reduce employee turnover that negatively affects sales performance. Employee turnover can cause businesses to incur losses financially, a situation that negatively impacts sales performance. Addressing employee turnover issues is critical to sustaining the operations, profitability, and growth of SMEs and other organizations. This study revealed that recognition and rewards, training and career advancement opportunities, effective communication, and pay, compensation, and benefits may help SME managers to reduce employee turnover. Employees are happy when their work is recognized by management. Instituting programs to reward employees may increase their commitment to the organization and cause the workers in question to stay in their jobs for an extended period. Workers who believe that there are opportunities in their organization to develop professionally and personally may decide to continue working for the employer. Managers of SMEs should organize training and career development programs to enhance the skills of their employees. Effective communication may help improve the relationship between workers and their manager. It is essential that managers of SMEs make themselves approachable and communicate clearly and meaningfully with their subordinates to help the employees address their concerns

and handle their tasks efficiently. Workers, like any individuals, have financial needs and would like to be compensated for what they believe that they have given for the work they do. A better compensation package not only motivates employees, but it also gives the organization a competitive edge.

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Importance of Diversified Marketing Strategies for Fast Food Restaurant Chains

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ABSTRACT

Every organization needs to consistently adjust operations and marketing strategies in order to perpetually satisfy consumers and reinforce dedication to the vision and mission of the company. The adjustments need to be made over time, according to situational influences as well as internal and external trends affecting consumer behavior. Without a proper marketing strategy, a company may go out of business due to internal and external organizational pressures. Nowadays, as the economies of countries worldwide show signs of crisis, fast food industry players need to adjust their marketing strategies in order to overcome the competition within new circumstances. This literature review demonstrates that in order to succeed in this competition, food chain companies need to combine multiple approaches and use omni-channel marketing campaigns. This article summarizes the research made over the last two decades and suggests topics in this area that can be further researched. The research documents, reviewed in chronological order, are peer-reviewed articles, conference papers, corporate websites and major media resources.

Keywords: consumer behavior, McDonald's, decision-making process, business strategy, marketing strategy

Introduction

Modern fast food chain companies are consistently affected by the multiple internal and external pressures that force them to constantly adapt business strategies to remain competitive. The significance of adjusting marketing strategies to local tastes has been emphasized repeatedly (Bowman et al., 2003). The importance of having a variety of marketing methods for various types of customers has been highlighted since the first fast food restaurants started to expand globally in the middle of the 20th century (Talpa & Boscor, 2011; Vignali, 2001;). The ways to sell and distribute products have also undergone periodical adjustments, depending on the country of distribution (Sutton-Brady et al., 2010). In the food business, McCarty's concept of the 4Ps – product, promotion, place and price – played an important role in the foundation for the development of marketing strategies (McCarty, 1975). However, the more marketers worked on different approaches to the marketing mix of the 4Ps, the more variables were added to this list. People (staff), processes (ordering, delivery, etc.) and physical experience soon became

considered as parameters within the marketing mix (Gilligan & Fifield, 1996). With the growth of competition in the market, companies had to become more and more instrumental in the development of new approaches to marketing strategies.

From 1980 to 1999, the fast food segment grew faster than any other segment of the outdoor food industry (Jekanowski, 1999). It continues to grow to this day. The fast food industry has a rich history of marketing, starting with the advertising of the original products (burgers and soft drinks) to the multiple celebrity endorsement campaigns, varieties of local menus and advertisements of bundle sales. However, despite the abundance of various marketing campaigns, due to the fierce competition fueled by high demand, fast food chains continue to lose market share and yield their clients to each other. For example, two of the largest fast food chains (in terms of annual revenue), McDonald's and Burger King, have been competing for the U.S and Canadian market for several decades. McDonald's, despite being almost twice as large as its rival, closed some

stores in 2015-2016 while Burger King kept opening new ones (Duprey, 2017). Burger King, coming up with new mobile applications that allow for pre-orders and discounts, and McDonald's, offering more and more delivery options, are examples of fast food industry players which are competing in the same field while using different marketing approaches.

Though the above-mentioned strategies have been extensively and successfully used before, the author claims that only a complex omni-channel marketing strategy can yield players a bigger pool of loyal consumers. This article is based on extensive research, organized in chronological order to uncover the marketing methods that have been used and how they are applied to the fast food industry to determine the effectiveness of marketing efforts. The methods are described and reaffirmed with industry case examples. The author reveals the most successful applications of these methods and suggests a new way of combining them for the most efficient strategical marketing planning.

Discussion

The fast food industry originated in the United States in the first part of the 20th century (Kara et al., 1995). Since its establishment in 1940, McDonald's, one of the oldest fast food chain restaurants, has undergone multiple marketing strategy iterations in order to expand in the United States, and eventually, overseas (Talpai & Boscor, 2011). Its rivals, White Castle, KFC, Burger King and other major competitors followed the same route of successful and unsuccessful iterations. All the strategies used were related to one of seven different variables of the marketing mix – product, price, place, promotion, people, process, or physical experience (Feltenstein & Latchnuth, 1983).

The promotional activities of a small to medium sized fast food restaurant traditionally start with local price promotions. Local price promotion is one of the most widespread methods to attract customers from neighborhoods (Feltenstein & Latchnuth, 1983). This kind of promotion is focused either on the introduction of a new product or reveals a new price of a well-known product. Such a marketing

strategy fuels the sales in the neighborhoods where the advertising campaign is taking place (Feltenstein & Latchnuth, 1983).

Another marketing strategy related to price variable is focused on price promotion. It became widely spread in the 1990s, when some food chain restaurants started to attract the price-sensitive segment of consumers (Drumwright, 1992). Bundled meals were aimed to increase the average check and to encourage buyers to spend more through further repetitive purchases at a restaurant where the bundles were sold. If a consumer wanted to purchase only one product out of the bundle, the bundle meal could still be the better option if the products sold individually cost more than same products in a bundle. Here, a customer sees the benefit of spending more and getting more (Drumwright, 1992). Moreover, the perception of bundled products is different from the perception of the same products when they are unpacked and considered individually. Tversky and Koehler (1994) claim that when considering objects individually, consumers think in more depth about the characteristics of each object, like the value or the risk associated with them. However, when bundled, these products do not initiate these thoughts. Thus, fast food chains focus on the value of the products and use these peculiarities of perception to create the feeling of benefit from purchasing a bundle meal. According to Wilkie (1994), such an approach is targeting those customers who are seeking variety and those loyal customers who are looking for a better deal from their favorite fast food restaurant.

Place-oriented marketing strategies were introduced with the establishment of dine-in options, in the very beginning of fast food era in the 1940s (Kara et al., 1995). Later, when researchers analyzed the factors that attracted customers to spend more time and money on fast food purchases, it was revealed that the most important factors included inexpensive food and the home-away-from-home atmosphere (Kara et al., 1995).

The architectural style of the buildings and facades of the booths inside shopping malls where fast food restaurants are located is another characteristic of a physical-focused marketing strategy that yields results (Love, 1995).

According to Love (1995), well-known and easily-recognized homogenous designs and architectural styles are the factors that attract customers and add to brand recognition.

Location, as a subfactor of the place variable, is an important parameter to consider while developing marketing strategies. Traditionally, it has been considered that the best location for restaurants are the places with the maximum amount of foot traffic and dense populations (Bronnenberg & Waithieu, 1996). That is why one can usually find famous fast food restaurants in the downtown areas of major cities around the world. However, location can be also considered together with such parameters as brand strength and price promotions. According to Bronnenberg and Wathieu (1996), when the dominant competitor, McDonald's is located next to smaller competitor, Burger King, Burger King is unable to attract McDonald's customers through price promotions. However, over time, when Burger King developed a positioning of its products which differ them that of McDonald's, then the vicinity of the larger competitor becomes beneficial for Burger King, as from this point, it can start attracting its competitor's customers through price promotions.

Unlike the homogenous strategy for architectural designs, the pricing strategy of fast food chains proved to be successful when heterogenous. After bundle meals were introduced, marketers researched the effect of price heterogeneity on consumer behavior (Bell & Lattin, 2000). This strategy managed to get the most responses from two types of customers: price-insensitive, or those who were willing to pay more and get more, and price-sensitive, who, though wanting to save on a purchase, still feel that bundle meals were more beneficial (Bell & Lattin, 2000). Both categories of customers confirmed through testing that they would prefer to purchase a bundle, as they wanted to get more products for a smaller additional payment.

Another approach to fast food chain marketing strategies that has been adopted by many restaurants is the promotion based on bundling meals with toys. McDonald's introduced the Happy Meal in the U.S. in 1979 (Moore et al., 2002). A meal for kids with a toy inside was

targeting young consumers and their parents who would stop by McDonald's for family dinner or for a gift for their kids. Marketers claim that this promotion was based on the fact that media, peers and parents influence children's consumption patterns (Moore et al., 2002). Thus, if approved by the media and peers and purchased by parents, the Happy Meal then becomes a desirable gift and a way to fill the stomach. Though, later research demonstrated that kids who eat at fast food restaurants regularly tend to struggle with obesity and further health issues (Bowman et al., 2003). Happy Meals continue to be used by McDonald's as a very strong promotional product. However, in order to comply with local healthy policies, McDonald's later announced changes in the kids' menu. Starting from 2011, consumers can order from the new menu which provides the option of juices, milk, sliced fruits and vegetables for all Happy Meals (Talpa & Boscor, 2011).

However, the Happy Meal case and the concerns about the quality of its contents was not the only quality concern in the history of McDonald's and fast food restaurants in general. Originally, fast food chains were praised for cheap and substantial meals which were easy to eat on the go. For decades, fast food chains successfully operated in the U.S. under the rules of the Department of Public Health. However, when the connection between obesity and fast food consumption was examined more thoroughly in 1990s and 2000s, health organizations initiated detailed research on the quality of fast food (Bowman, et al., 2003). Prior to analyzing this topic, one needs to reflect on the reason for fast food meals to be cooked and served the way consumers are used to having it.

Supersizing has always been one of the main product-centered strategies for McDonald's and other famous fast food restaurants. For a low additional cost, buyers can get a larger portion, or can *supersize* their order. According to Pollan (2016), consumers tend to eat more if the portion they have is larger than average. Research by Rosenheck (2008) reveals that the majority of fast food meals contain large portions of sodium and are low in nutrients. The quality of ingredients explains the relatively low prices. Thus, from a financial perspective, it is impossible for fast food

restaurants to introduce healthier ingredients without raising prices. Neither McDonald's nor its competitors can afford major changes to the recipes of their meals without substantially increasing prices. Instead, fast food companies introduced the supersizing strategy, while some efforts to introduce niche and more expensive meals failed. For instance, an introduction of the more expensive McDonald's Arch DeLuxe burger in 1996 for the sophisticated urban demographic was unsuccessful due to the contradiction to the common perception of McDonald's as an all-inclusive family-friendly food company which welcomes customers of different segments, regardless their occupation, income or place or residence. The cost of this product was in contradiction to the one expected from this brand. As a result of this product marketing mistake, the company lost around 100 million dollars (McGarth, 2008).

In the last decade, in order to compete with other major rivals (e.g. Burger King, KFC), McDonald's had to shift from reliance on a product-centered strategy to a customer-centered strategy. The company had to provide better service in order to attract new and retain existing customers (Talpau & Boscor, 2011). With competitors having a similar menu, the same business models and similar promotional campaigns, it became harder for McDonald's to differentiate themselves. However, until 2011, the corporation's mission statement claimed that the company's objective was to "Promote diversity and inclusion among our employees, owner/operators and suppliers who represent the diverse populations McDonald's serves around the globe" (Talpau & Boscor, 2011, p. 57). Thus, though the company was focused on diversity and inclusion, still customer experience was not prioritized, at least not evidenced in the statement.

Previously, McDonald's attempted to shift to a customer-centered strategy through adjusting its menu to new locations while expanding overseas, starting from the 1960s (Song et al., 2017). Though attempting to target new customers, this strategy was still focused on the products. The introduction of local menus had its ups and downs; for example, the "no-beef" menu was favorably received by the Indian

audience, while the Taiwanese customers were skeptical about the traditional rice meals in McDonald's menu (Talpau & Boscor, 2011).

Moving forward with customer-focused marketing strategies, some improvements to customer service, specifically focused around convenience. For instance, in 2015, McDonald's introduced serving custom burgers via drive-through under the "Taste Crafted" customer program (Baertlein, 2015). Customers could choose from a variety of buns and different toppings to customize their burgers. Additionally, years later, McDonald's introduced the self-service kiosks in 2018 which has made the ordering process faster (Rensi, 2018).

In the light of the worldwide pandemic in 2020, many major fast food chains reported an increase in sales (Klein, 2020). McDonald's has reported that 95% of its restaurants are open and provide a safe environment for serving customers and that comparable sales have improved from March to June 2020 ("McDonald's Reports April and May 2020," 2020, para.1). The restaurants were open for customers, with "to-go" and "drive-through" options available. No dining was allowed indoors. With such an approach to customer service, the sales increase can serve as a proxy measure of the shift of fast food chain marketing strategy from product-oriented to customer-oriented.

Recommendations

During the last several decades, the fast food restaurant chains have applied multiple marketing strategies in order to secure market shares, yet still, no universal recipe was discovered that could lead any of the market players to dominance in the market. However, the above-mentioned examples of major fast food chains in their effort to win the customer demonstrate that any effort to focus only on one or a couple of marketing channels for promotion would not bring the desirable result. The combination of different promotion strategies yields better results than focusing on one or a couple of the above-mentioned strategies (Duprey, 2017; Rensi, 2018). From what can be learned from history of marketing for fast food companies, new promotional strategies have

been various and variegated as the competition became fiercer. Now, with all these marketing methods developed and applied, companies will still need guidance on how to combine these methods in order to apply a marketing mix at the exact correct time in the business lifecycle stages. Omnichannel marketing recognizes that consumers often channel hop within a given transaction among retail stores, computer, smartphones, tablets, in-store kiosks and social media sites (Berman & Thelen, 2018). Thus, considering such a behavior, marketers use different channels in order to win the customer. However, there is no universal formula of the right mix of the channels and the amount of effort reflected in quantitative parameters that can be implemented for an overall effective marketing strategy.

More research needs to be done on how campaigns implemented through various marketing channels compliment and amplify each other, leading to desired outcomes. Also, with the emergence of different channels of online marketing, such as the Internet, social media, email, and messengers, fast food chains need to diversify marketing efforts and combine online and offline marketing. Further research can be done that can investigate the degree of influence of the combination of online and offline marketing campaigns on the sales in the fast food industry.

Conclusion

Throughout the history of the fast food industry, companies have been instrumental in applying newly invented marketing strategies in order to increase market shares and reach new segments of consumers. Successful strategies are still being used and are focused around seven variables of the marketing mix: product, price, promotion, place, people, process and physical experience. In order to successfully compete, major players not only need to shift from product-oriented to service-oriented marketing strategies, but also, they need to find the best combinations of omni-channel marketing strategies in order to strengthen their brand and stand out from the crowd of competitors.

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A Study on Assessing a Business Viability for Transition to a Circular Economy

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ABSTRACT

The shift from the existing linear model of the economy to a circular model is gaining traction across business entities, nationally and globally. Minimal studies have been done that would support the circular transition for a business from an existing linear model. There is a significant gap between the formulation and implementation of circular strategies in business. This literature review explores the preexisting concepts of the business model canvas (BMC) and Value Hill tool for the implementation of circular strategies in a business by determining a *Good Point for Transition* (GPT). The favorable condition, where a business can transition from a linear economy (LE) to a circular economy (CE) is defined as a GPT. This study suggests a three-step generic process that would provide a company with clarity on how to incorporate circular strategies into their structure. Firstly, this review paper defines and elaborates upon the business model canvas (BMC) based on the prior work of Osterwalder and Pigneur (2010) and Lewandowski (2016). Secondly, it analyzes the Value Hill diagram, a strategic tool for circular activities that a business can use upon implementation of a circular model (Achterberg et al., 2016). Finally, this work will indicate how a circular strategy can be selected on the basis of assessment of the BMC and Value Hill diagram of a business. For a better understanding of the process, IKEA's initiatives for circular strategies are used in the study. The paper concludes with a three-step generic model for determining GPT and emphasizes that the adoption of circular strategies for companies depends upon the circular expertise and resources they and their value chain partners have across the Value Hill diagram.

Keywords: circular economy, circular strategies, circular business model canvas, value hill diagram, circular transitions

Assessing Business Viability for Transition to a Circular Economy

An alarming pressure on resources has necessitated business entities to rethink their contemporary model of production and consumption (P&C). Most business entities follow the linear model of P&C, which operates in the take-make-dispose modality. In contrast, excessive pressure on resources for P&C has mandated a transition from this traditional linear economy (LE) model to a circular economy (CE) model, which focuses on a take-make-reuse modality. The transition from LE to CE is crucial; at the same time, it might not be easy for business entities to diversify from their existing linear model to a circular model as it requires resources and circular expertise (Lacy et al., 2020).

Amidst heightening voraciousness for resource consumption, for the first time, the global economy has topped the annual resources requirement of 100 billion tonnes based on the

Circular Economy (2020) report. The same report concludes that only 8.6 percent of the world is exhibiting a circular modality. This highlights how fragile and mediocre our supply chain system is when it comes to incorporating a sustainable approach of P&C. Moving from the more common linear approach to the circular path of P&C is a necessity for achieving sustainability. CE focuses on enhancing the value of the material (EMF, 2015a), and thus, leads to a reduction on the business footprint and resources required for P&C. But still, a plethora of confusion exists within the business industry regarding how to transition from a linear to a circular model of P&C.

GPT is defined as the favorable conditions required to move from the linear to the circular model of P&C. Companies should consider if the transition is economically beneficial to them or not as well as if they have enough resources to transition. But poignantly, comparative research conducted by Upadhayay

and Alqassimi (2019) between Nepal and the USA, concluded that less than five percent of the respondents classified themselves as being an expert in terms of understanding the circular economy. The same research found that most of the respondents thought CE was related to waste management, neglecting the higher utilization of CE for resource management and sustainability. Kirchherr et al. (2017) defines CE as:

A circular economy describes an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes, thus operating at the micro level (products, companies, consumers), meso level (eco-industrial parks) and macro level (city, region, nation and beyond), with the aim to accomplish sustainable development, which implies creating environment quality, economic prosperity and social equity, to the benefit of current and future generations. (pp. 224-225)

Despite the fact that the European Parliament (2018) has highlighted the positive impact CE could have on the economy, environment, and society, there is still no precise cutoff point to state the best conditions or process for the transition from the LE to CE. This review paper intends to address the gap in research to suggest the steps businesses can take to transition to the circular economy.

Necessity for the Research

Each business entity is unique in terms of resources, expertise and capacities which may influence their ability to incorporate a circular vision. This study will help businesses to identify appropriate conditions for circular transition along with the selections of effective circular strategies. This study will offer consideration of critical questions like when, how, and where to transition from LE to CE, and ultimately, remove the gap that has been prevalent between the formulation and implementation of circular modality at the business level.

Methods and Materials

This paper consists of an in-depth literature review to determine the GPT through the analysis of preexisting scholarly articles authored by academics, think-tank organizations, business entities, and governments across the globe. For this purpose, both peer-reviewed as well as non-peer-reviewed papers were analyzed. The decision of including various literature sources was due to the fact that, despite the growing requirement of CE principles for business and sustainability, the academic domains still lack enough literature related to CE (Murray et al., 2017). The lack of peer-reviewed articles and availability of significant seminal work from businesses necessitated the incorporation of non-peer-reviewed papers (Ghisellini et al., 2016; Kirchherr et al., 2017; Schut et al., 2015), which are of great value for this particular literature review article. This research combines the concepts of BMC and Value Hill to strategize a circular option for a business. GPT supports businesses in enhancing the mastery of CE by reconciling existing business models with circular principles, and ultimately, laying out circular strategies a company could incorporate based on technical and non-technical resources available. A three-step process was suggested in this study for a business to use in order to determine its current state of circular resources and to develop appropriate circular strategies to support a circular vision. The first step in this proposed process would be for a business to analyze their existing model based on the BMC (Osterwalder & Pigneur, 2010), and the circular business model canvas as put forth by Lewandowski (2016). In second step of the process, the outcome from the first step is then viewed through the Value Hill strategic tool to determine circular model strategies (Achterberg et al., 2016). In the last step, a circular strategy decision would need to be made by a business based on the identified gap and opportunities indicated through the BMC and the Value Hill diagram.

Discussion

Business Model Canvas and Its Components

A business model is a manifesto which depicts the modality for business operations and its continuity. For a strong understanding of a business model, a compelling business model canvas should be used. A business model canvas defines the organizational value creation, delivery, and capturing strategy (Osterwalder & Pigneur, 2010). Effective analysis and understanding of these value-creating segments will help a business to fit well with the circular strategies. These components are interlinked and interdependent upon each other. As illustrated in Figure 1, BMC consists of nine building blocks interrelated; they include: customer segment, value proposition, channel, customer relationship, revenue stream, key resources, key activities, key partnership, and cost structure (Osterwalder & Pigneur, 2010).

As shown in Figure 1, businesses should have clarity in terms of business partners, core activities, and the resources required to generate value for its customer segment. Simultaneously,

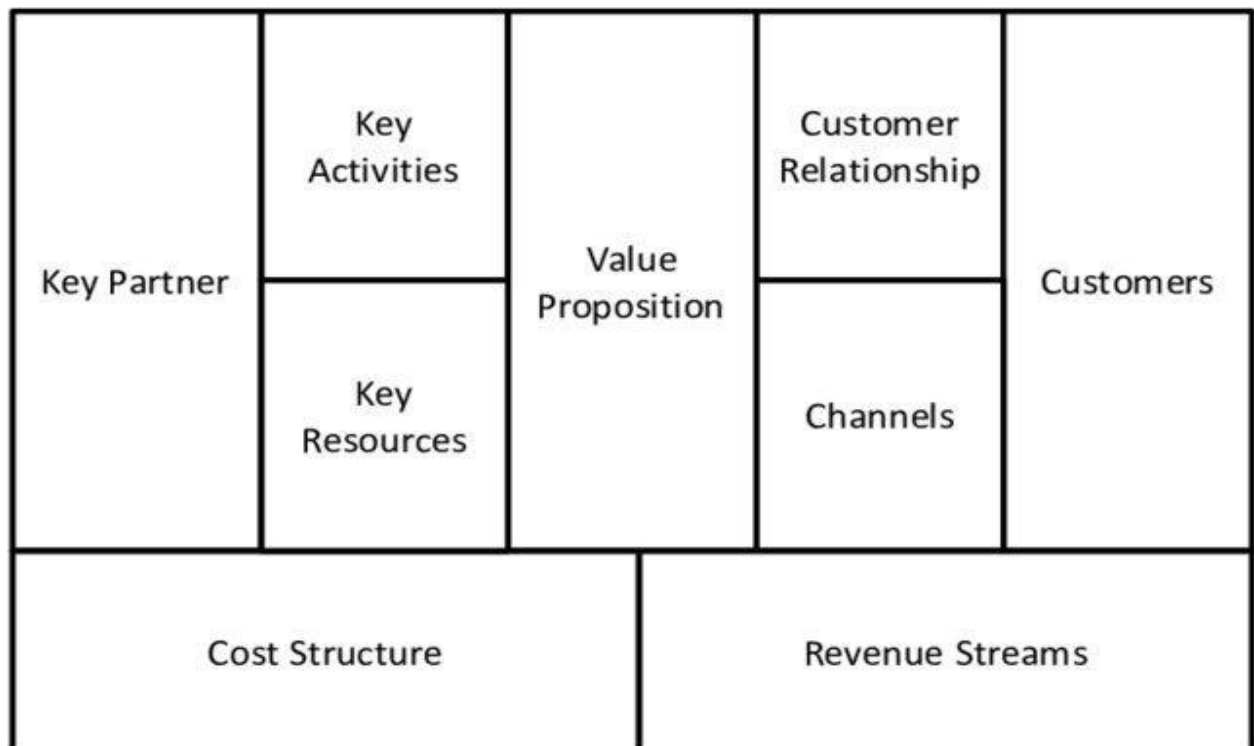


Figure 1. Business Model Canvas with its Components.

Note: Source Osterwalder and Pigneur (2010). This figure demonstrates nine key segments of business model canvas.

Partners <ul style="list-style-type: none">Cooperative networksTypes of collaboration	Activities <ul style="list-style-type: none">Optimising performanceProduct DesignLobbyingRemanufacturing, recyclingTechnology exchange Key Resources <ul style="list-style-type: none">Better-performing materialsRegeneration and restoring of natural capitalVirtualization of materialsRetrieved Resources (products, components, materials)	Value Proposition <ul style="list-style-type: none">PSSCircular ProductVirtual serviceIncentives for customers in Take-Back System	Customer Relations <ul style="list-style-type: none">Produce on orderCustomer vote (design)Social-marketing strategies and relationships with community partners in Recycling 2.0 Channels <ul style="list-style-type: none">Virtualization Take-Back System <ul style="list-style-type: none">Take-back managementChannelsCustomer relations	Customer Segments <ul style="list-style-type: none">Customer types
Cost Structure <ul style="list-style-type: none">Evaluation criteriaValue of incentives for customersGuidelines to account the costs of material flow		Revenue Streams <ul style="list-style-type: none">Input-basedAvailability-basedUsage-basedPerformance-basedValue of retrieved resources		
Adoption Factors <ul style="list-style-type: none">Organizational capabilitiesPEST factors				

Figure 2. Circular Business Model Canvas.

Note: Adapted from Lewandowski (2016). This figure comprises of eleven major segments in comparison to general BMC as illustrated in Figure 1 which contains nine segments.

a palpable understanding of its customers, relationship with them, and channels used to deliver a product is needed. Thus, a business should perform a cost-benefit analysis to determine its prospects. Moreover, knowing one's own business model will help the company determine the status of resource availability, customer or market awareness, and financial feasibility before initiating circular modalities. Bianchini et al. (2019) asserted that BMC should be easy to understand, replicate real situations, fully depict circular initiatives, quantify the circular initiatives, and focus on maintenance as a stage of the product lifecycle. The BMC helps develop business plans (Ching & Fauvel, 2013), and the BMC should be flexible enough to accommodate changes in the environment (Dudin et al., 2015). The practical analysis of BMC and how it benefits organizations includes (Osterwalder & Pigneur, 2010):

- Clearly states and defines its unique value proposition to cater to its customers.

- Identifies market segmentation to determine its customers.
- Enlists resources required to achieve the vision, mission, and goals of the company.
- Focuses on the channels to reach prospective customers.
- Lays a foundation to maintain a strong bond with the customers and retain them.
- States the revenue generation sources.
- Enlists the key activities to enable and run the business.
- Prioritizes the key partners that are key for business performance and its excellence.
- Determines various expenses and the cost the company has to incur for its operation.

Understanding the BMC helps management grasp the core factors that are unequivocally important for business survival. This incorporates

scanning of various internal as well as external factors that would impact business performance.

Business Model Canvas for a Circular Economy

After going through the generalized framework of BMC and its components, shown in Figure 1, a business should analyze the circular resources it has and define a circular business model canvas. Lewandowski (2016) applied the revised business model canvas adding the *Take-Back System* and *Adoption Factor* into the canvas, making it more relevant in including CE principles. Figure 2 illustrates the circular BMC, as discussed by Lewandowski (2016). As seen in Figure 2, each segment of the canvas circular and sustainable business activities are indicated. The changing market preferences often necessitate a business redefine and reframe its business model; management would need to be open to incorporate these changes in their BMC. Figure 2 shows a brief description of key segments of a circular BMC.

Partners. No single company can solve the entire problem created by the excessive resource consumption in the linear economy. Partnership among stakeholders assures long-term balanced growth and having partners throughout the supply chain serves an important role in circular activities (Helias, 2018). A company, if lacking resources or specialization, could outsource tasks from its key partners, either domestically or internationally.

Key Activities. Lewandowski (2016) states tasks that create, offer, and deliver value proposition are key activities in any business model. A business intending to have a circular modality should have a clear understanding of critical events crucial for the organization to come across the market expectation in terms of circular products. For example, these critical activities could be related to resource efficiency, productivity enhancement, or renewable energies. Companies considering transitioning into the CE could analyze their structure to determine if any element of digitization is possible to limit resources used (Antikainen et al., 2018).

Key Resources. CE focuses on fair-trade practices, which is the ethical and

responsible treatment of the stakeholders involved in the value chain (Shoenthal, 2018). It promotes the sustainable use of resources. A business should recognize the resources deemed necessary for its transition. They will require circular products that have been created through the 3R approach, use of closed-loop products-products that focus on resource life-extension strategies, and emphasize supportive environment products (TUDelft, n.d.).

Value Proportion. Circular products and services should be perceived as beneficial by the customer. An awareness of the market towards circular products plays a crucial role in the acceptance of circular products, but as per Upadhayay and Alqassimi (2019), the general public and organizations are still unaware of CE and its importance to attaining economical, ecological and social benefits. On the one hand, it could be a challenge for business entities to convince the market of the need for circular products and its benefits. On the other hand, circular products present an opportunity for investment in new circular domains and could bring competitive advantage (Suomi & Savola, 2019). The circular model could be proven beneficial if a company provides a quality product at a competitive price, preserving the natural stocks for ecological balance and if the company creates jobs in local communities (BNP Paribas, 2016; EMF, 2013). Circular products through resource sharing principles and product as a service (PSS) models increase accessibility of products in the market at a competitive price.

Customer Relationship. A healthy relationship with customers supports the implementation of circular models. Positive relationships enhance consumer receptiveness to company offers; whereas, an unsupportive relationship could cause market hostility. Segmenting customers based on demographic, social, economic, and environmental domains would help a business to classify and differentiate circular products as the customers' preferences are often impacted by these parameters. Chamberlin and Boks (2018) concluded that contamination/disgust/newness, convenience/availability, ownership, cost/financial incentive/tangible value, environmental impact, brand

image/design/intangible value, quality/performance, customer service/supportive relationships, warranty and peer testimonials/reviews are factors that are important to consider for marketing circular products.

Channel. The circular economy emphasizes economization and resource efficiency (EMF, 2014). Dematerialization, the process of replacing physical things with digital alternatives, supports customization and resource-saving (Lacy, 2015). Virtualization, the process of creating virtual products, supports CE due to a lack of wasted resources (Antikainen et al., 2018). Virtualization not only saves resources, but it also provides products and services promptly. CE focuses on the use of channels which can reduce extensive use of resources and emphasizes the optimization of the existing resources.

Customer. As the core of circular products revolves around customers, understanding customers is pivotal. All segments of the circular BMC should align with customer preferences and their expectations. Biddle (1993) identifies apparent market skepticism for recycled products, and Howard (2018) states that businesses should be able to debunk the myth that recycled products are of less quality. Business should assess the level of customer awareness and their preference/perception towards the circular products. If the customers are not aware, they might end up thinking the recycled products are of less quality.

Cost. Cost is a major determining factor of the transition into a circular model. The circular business could necessitate high upfront costs, which is one of the most pressing barriers hindering progress in the circular economy (Kirchher et al., 2018). A firm should assess the transition cost and determine the best possible alternatives. These costs could include acquiring circular knowledge, technologies, supply chain redesign, process and product redesigning. By reducing the waste throughout the value chain and using circular inputs, companies can create supply chain efficiencies, which in turn, would save costs (Riel, 2018). Michal Porter's value chain strategy tool can be used to differentiate the

primary and supporting activities deemed necessary for circular transition. In doing so, a company could invest in the critical factors crucial for GPT.

Revenue. A company should have clear circular business models in place to generate revenue. Businesses can choose between circular modalities such as the circular supplies model, resource recovery model, product life extension model, sharing platform, or product as a service model (Riel, 2018). Lack of precise models to generate revenue may not perpetuate the company's survival.

Take back system adoption factor. CE focuses on the close loop strategy; it optimizes the value of products by extending usage rather than disposing of them. After the end of life, products are brought back to the producer, which then, dependent upon the condition of the returned products, are reused, refurbished, remanufactured, or recycled as per Walter Stahel's Inertia Principle (Hollander et al., 2017). A business could set up multiple modalities to bring its products back after its end-of-life. It could use its existing sales channel, have direct contact with the customers, or outsource third-party vendors for product collection. All businesses might not have the opportunity or resources to adopt circularity. The level of resources, knowledge, expertise, market receptivity, and the government support will determine the capacity of a business to transition to circular modality.

The CE, which focuses on the take-make-reuse model, is different from LE, which emphasizes the take-make-dispose strategy (EMF, 2015b). The differences between a linear and circular economy can be seen with the BMC. The process of asserting nine core components of BMC for CE is different than the process for LE (see Figure 1 and Figure 2). For example, while circularly inclined companies may use renewal energies, recycle materials, and focus on multiple resource life extension strategies, these activities could be silent in the context of linearly inclined businesses. Hence, the analysis of BMC in the context of CE will help management to access their readiness to transition from a linear to a circular model of P&C.

Understanding Value Hill and Circular Strategies

After the completion and understanding of the BMC (first step in the three-step process), the second step will involve understanding and enlisting circular activities along the Value Hill diagram.

Understanding the Value Hill

A Value Hill diagram is a circular strategy tool that dissects business activities into three core circular domains- uphill, tophill, and downhill (Achterberg et al., 2016). Each of these domains has unique circular characteristics; a business entity could incorporate circular strategies by choosing any of the circular strategies on the basis of resources it has. Figure 3 shows the differences in circular strategies between the linear and circular models through a Value Hill diagram.

In both cases, up hilling (per-use) adds value to the raw material, and the plateau (tophill) is the highest level of the value obtained from a product. The downhill (post-use) manifests the destruction of the previously built value. The difference seen is that the product use duration in the case of CE (right) is higher, and various CE measures are incorporated to retain the product's value while it drops down the hills.

In the case of the linear Value Hill (left), once the components are extracted, they are used, and after the end-of-product life, they are either landfilled or incinerated. Whereas, in the circular Value Hill (right), circular philosophy entails greater product use duration, as shown by the tophill. Contrary to the linear Value Hill, during the downhill phase, rather than ending the life of the products or the components, it incorporates circular strategies to loop the resources back to the P&C cycle. The awareness and understanding of the Value Hill circular tool should help business entities to define their circular strategies across the hill.

Phases on the Value Hill

Understanding and positioning circular strategies across the Value Hill would help business entities to implement a circular model. The implementation of CE requires resources, financial as well as non-financial. Depending upon the resources and expertise available, a business entity could run a due diligence audit of its business to implement circular strategies across the product life cycle. Figure 4 illustrates multiple circular options across the Value Hill, namely circular design, optimal use, value recovery, and network organization (Fischer & Achterberg, 2016).

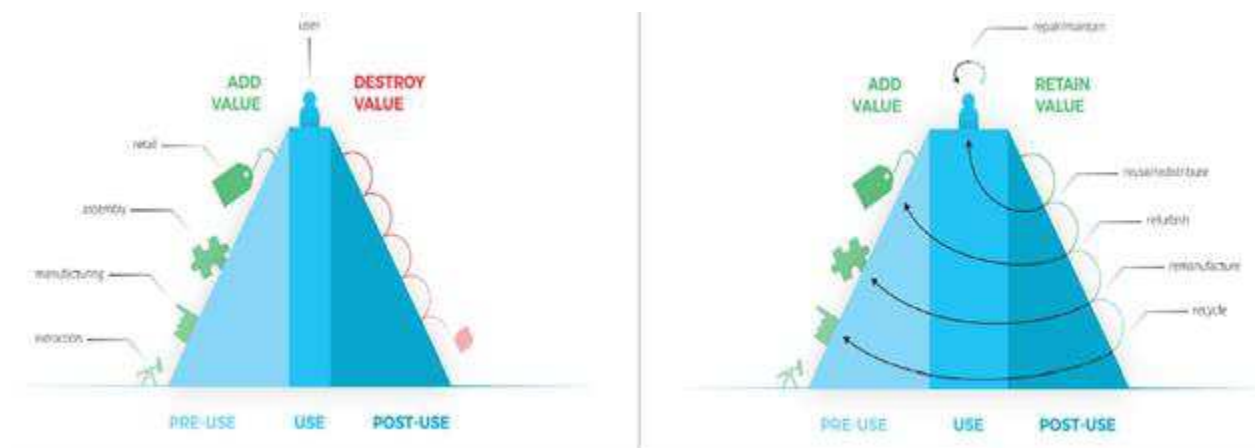


Figure 3. Value Hill Diagram Showing the Difference Between Linear and Circular Strategy.

Note. Adopted from Achterberg, Hinfelaar, & Bocken, Master circular business with the value hill (2016).

The Value Hill on the left side represents a linear model and the Value Hill on the right represents a circular model.

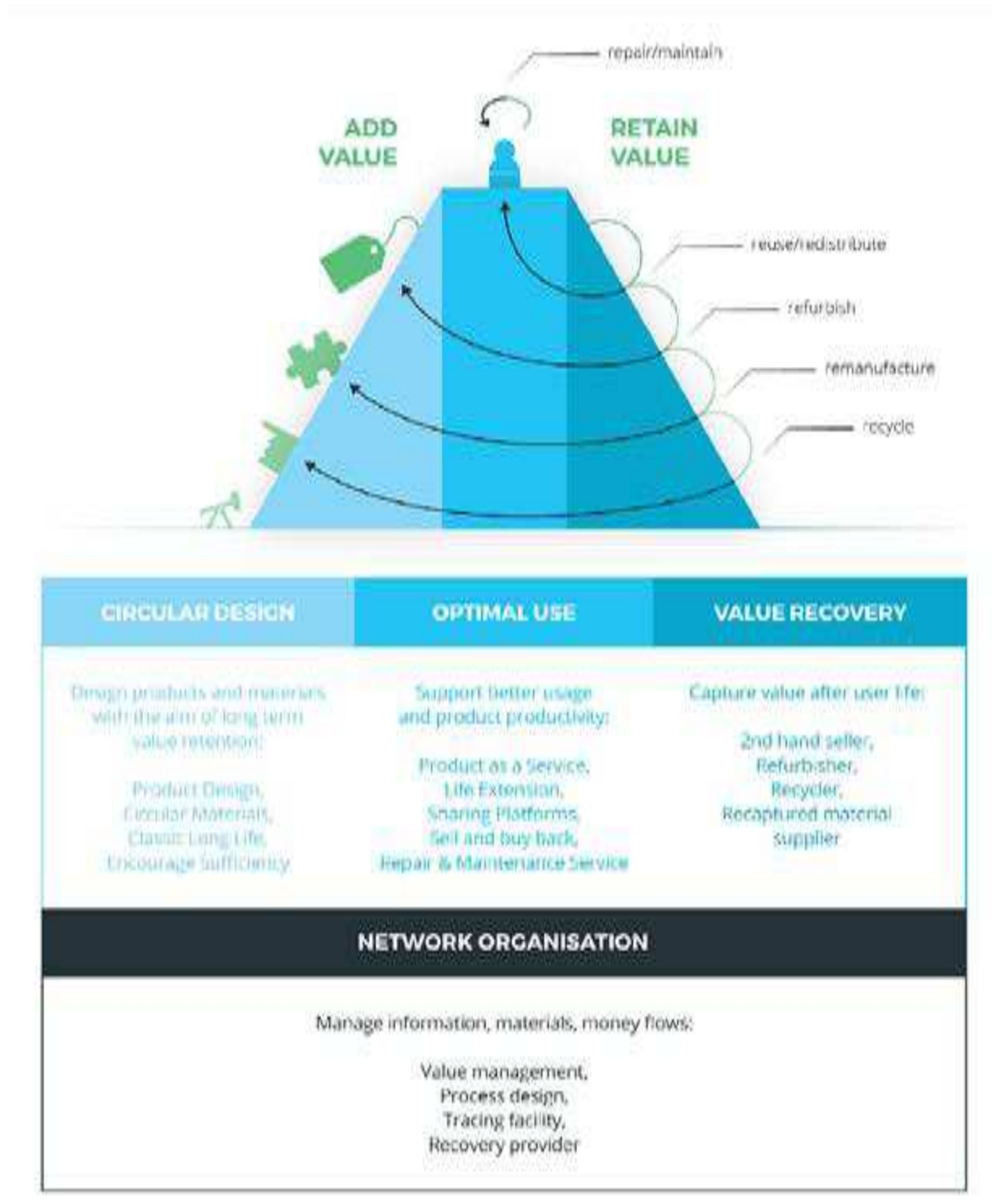


Figure 4. Value Hill Diagram Illustrating Circular Strategies.

Note: Adopted from Achterberg, Hinfelaar, & Bocken, Master circular business with the value hill (2016). This figure demonstrates the summary of Value Hill diagram and list of circular strategies at each phase.

Uphill Stage and Circular Design. The first stage of the Value Hill diagram is the uphill phase; in this phase, the business defines its design strategies for its product creation or the service delivery and works accordingly. The raw materials are extracted and sent to the manufacturing plant for production. After, they are assembled to be a finished product, which ultimately arrives at the market for final consumption. A business entity could incorporate the circular principle in this phase. Rather than waiting for the waste to be created and then refurbished, recycled, or reused, CE emphasizes the effective implementation of circular design from the initial phase of P&C (Upadhayay, 2019).

Tophill Stage and Optimal Use. In this stage, the product or the service reaches the market for consumption. Figure 3 shows the difference in the tophill stage across the linear and circular models. The product utility phase is lesser in LE in comparison to CE. The linear economy persuades economics of scale through mass production, which leads to products with a short-term life cycle; this has implications on the existing stock of resources, which is already in a deficit. But on the contrary, the CE provides numerous circular business options, like easy repair and maintenance and easy to maintain modular parts which helps to extend the use period of the products through resource life-extension strategies (RLES).

Downhill and Value Recovery. A CE focuses on the close loop strategy where the maximum possible efforts are incorporated to increase the value of products/components by keeping them in the P&C cycle. Stahel (2010) explained the concept as a close loop strategy (as cited by Bocken et al., 2016), which stresses the reentering of products/components to the P&C cycle. Numerous circular options (reuse, refurbish, remanufacture, or recycle) are considered in this stage, as shown in Figure 4.

Network Organization. The successful implementation of CE requires cooperation and collaboration across industries (FinanCE, 2016). CE focuses on integrating the circular principles across the supply chain. The circular gap could be an opportunity only if a business can achieve the network advantage across its supply chain

(Achterberg et al., 2016). Hence an organization should evaluate the level of relationship it has with its key partners. Networking plays a crucial role in closing the resource loops; for example, for the successful implementation of reverse logistics, a company should have a good hold on market channels and its intermediaries. The network organizations could be private, public, or jointly owned.

Circular Strategies Across the Value Hill

Depending upon the state of the resources a company has, they can plot themselves along the Value Hill diagram. Some companies may focus on embedding circular strategies in the initial phase of product design; some may work to manifest CE principles during the product use period, and some may do such during the post-production stages. These strategies are not mutually exclusive and could be practiced throughout the product life cycle. A shift from a linear to a circular economy reduces the need for primary raw material, reduces the amount of waste to landfills, extends the life cycle of resources, and revalorizes the products and resources at the end of life (Bianchini et al., 2019). Table 1 summarizes the circular strategies as put forth by Achterberg et al. (2016) that could be adopted by an organization.

Table 1 lists the circular strategies a business entity can select across the phases. The circular activities defined in the Value Hill tool for the uphill phase is stated as a circular design. A circular design would be the most effective circular approach as it identifies the circular business model before it has committed resources for the P&C. It is of advantage for a business to integrate circular economy in the new product development process (Pinheiro et al., 2019). Adding at this stage would help circular principles to be implemented in the beginning of the product development course. Furthermore, a company can design its products and process in a way where it would last for a longer duration. Here, the circular strategies are planned for the overall product life cycle, including easy maintenance, repair, and availability of accessories. These strategies are determined

during the design phase to enhance duration in the consumption loop. This phase focuses on the use of circular materials, such as renewable energies, recyclable materials, and ethical and responsible operating practices.

Fairphone, the European Union based world-first modular smartphone has been working with this ethos (EMF, 2018). The company provides easy access to the repair and maintenance of its mobile phone so that the product use and retention ratio by the buyer increases. Mud Jeans, an apparel company, based in The Netherlands, has incorporated circular principle from the beginning in product/service design phase, the clients can rent the organic Jeans with the monthly subscription price. The ownership of the jeans is retained by the company which later would support easy reverse logistic and recyclability (EMF, n.d.). Both of these companies have incorporated circular options from the product design phases.

For the tophill, which is the product use period, the optimal use strategy is adopted. At this point, a business will look for circular options,

which would increase the value of the product while it is in use. Where the uphill focuses on circular options during the design phase, the tophill focuses on using those options to ensure that the product consumption period is extended. It includes circular strategies like easy availability and accessibility to the repair and maintenance components, tools, and guidelines as listed in Table 1. Fairphone comprises of four modules, if any of the components malfunction, rather than purchasing a new phone set, the company provides an option to repair and replace the specific broken module. Similarly, sharing platforms where the excess ideal unused resources are shared (Upadhayay and Alqassimi, 2018), like Uber and Airbnb, help in optimizing the use of ideal resources. Product as a Service (PSS) model where the seller maintains the ownership of the actual product and only the service is sold to the buyer also optimizes the use of the products (Stahel, 2010).

Up hill	Circular design	(Pre use stage)
	Focus on circular design so that it can last long term	
Design before the production is started	Product design Circular materials Classic long life Encourage sufficiency	
On the top	Optimal use	(In use stage)
	Focus on better use of the product	
Looking for gaps to extend the value while the product is in use	Sharing platform Life extension Repair & maintenance service	
Down hill	Value recovery	(Post use stage)
	Focus on re-looping back to P&C	
Managing end of product life	Refurbish Recycle End producer responsibility	
Network organization	Cross hill	(Collaboration)
	Manage information, materials, money flows	
Management and coordination of circular stakeholders	Value management Process design Tracking & tracing	

Table 1. Circular Strategies Across the Value Hill.

Note. Adapted from Master circular business with the value hill (Achterberg et al., 2016).

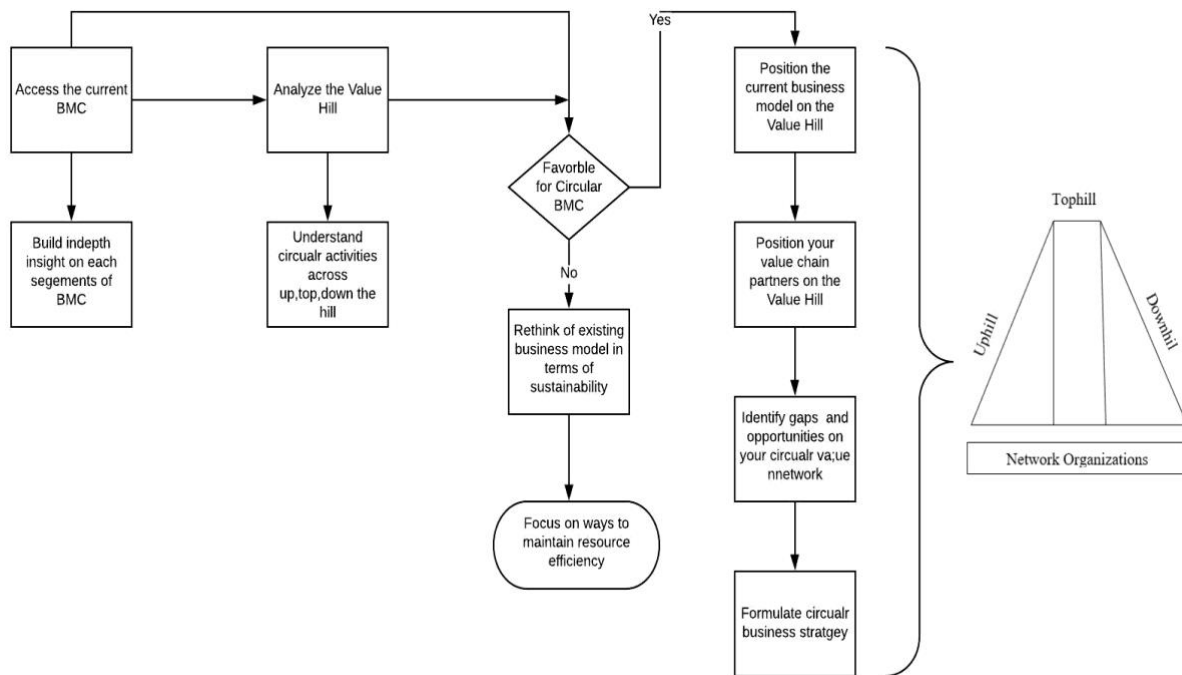


Figure 5. Steps for Accessing Circular Strategies for Business Entity.

Note: Illustration of step 1,2 and 3. Adapted from Osterwalder and Pigneur (2010), Lewandowski (2016), Achterberg et al. (2016).

Downhill is the post product use phase; in the case of the linear economy, the products after use or at the end of life are either disposed of or incinerated, but in the CE, they are looped back into the P&C cycle to enhance the value of a product. Refurbishing, remanufacturing, and recycling methods are used to return the products back to the P&C cycle.

Networking has a significant effect on aligning the key partners in the business model canvas. Network Organization brings all the three phases on the Value Hill together. This is illustrated in Figure 5 and in Table 1. For example, for the successful implementation of reverse logistics, the producer should be able to bring the products back after the end of their life; similarly, there would need to be enough mature secondary market for the trading of the reused products.

Framing the Circular Business Activities- Good Point for Transition

After assessing the BMC (Step 1) and the Value Hill tool and circular strategies on Value Hill (Step 2), a business entity should decide the best possible circular strategy that would fit their structure. Choosing this point of transition to CE is stated as *Good Point for Transition* which is the final step of the process (Step 3). At this stage, a company would be well aware of its strengths and weaknesses in terms of circular modalities and would be posed to make the best possible circular decisions. Five business models: circular supply chain, recovery and recycling, product life extension, sharing platform, and product as a service (PSS) have proven to be successful circular business models (Lacy, 2015). Figure 5 illustrates the overall process (Steps 1, 2, 3) a business entity could undertake to analyze its circular transition. While Step 1 and Step 2 focuses on the assessment of the circular resources and circular strategies, the Step 3 concentrates on decision making.

After completing Step 1 and Step 2 (see Figure 5), a business would reach the point where it would be necessary to decide if CE modalities were approachable and realistic for it or not. If the transition is achievable and beneficial, the company would reach the third and final stage of implementing circular modalities (Step 3), as shown in Figure 5. Step 3 is comprised of four sub-steps as described by Achterberg et al.

with other organizations to promote a circular economy (IKEA, n.d.). The company specializes in designing and manufacturing modular products which facilitate easy repair and is looking for ways to use the leftovers from one production process to build another product, thus, from 100% surplus or recycled materials. In 2019, IKEA gave a second life to 47 million products (IKEA, n.d.). The company envisions sharing its existing

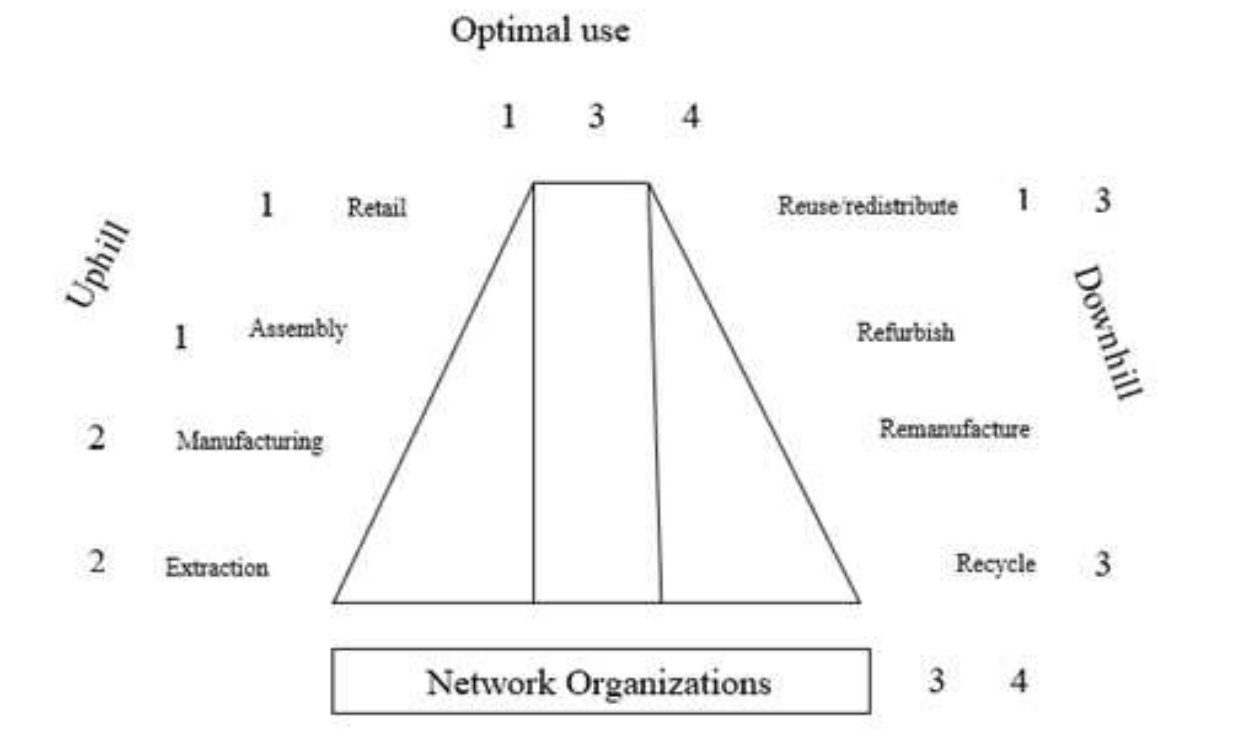


Figure 6. IKEA's Circular Strategies Across the Value Hill

Note: This figure illustrates existing and expected circular strategies adopted by IKEA along with the Value Hill diagram. Digits 1,2,3 and 4 represents each sub-step included in step 3.

(2016). It starts with positioning the existing business model and the value chain partners on the Value Hill diagram, which is followed by accessing the gaps in the circular networks to formulate the new circular business strategy.

For practicality and better understanding, IKEA, the multi-national furniture and fixture selling company, is considered. The company was established in 1943. By 2030, IKEA aims for 100% circular products through recycled, remanufactured, refurbished, and reused products. The company has vowed to collaborate

business model using digital technology and launching products as a service modality (PSS) (IKEA Australia, 2018).

The product and process design phase focuses on durability, a renewable or recyclable material, minimum waste creation, standardization, adaptability, easy care and repair, easy disassembly and reassembly and emotional attachment to products (IKEA Australia, 2018). IKEA Australia has also started the take-back program for certain products. All of these factors could be resembled across the nine

generic segments of BMC, as shown in Figure 1, and eleven segments of circular BMC, as illustrated in Figure 2. Though currently running in a linear model, IKEA is also adapting to achieve its circular vision by 2030. Considering Achterberg et al.'s (2016) guidelines for assessing circularity, Figure 6 highlights the circular strategies IKEA uses across the Value Hill diagram; each of the numbers stated on the Value Hill diagram identifies the sub-steps for Step 3.

Furthermore, Step 3 comprises of four consecutive steps (see Figure 5) to incorporate circular strategies which are based on the previous Steps, 1 and 2. At this stage in Step 3, a business would decide whether to invest in the circular gap or opportunity or not. It can be inferred that one circular decision could have multiple impacts on other phases. For example, a modular design decided during the uphill phase would have an impact on product utilization (through easy repair and long life), and value recovery (through easy disassembling for reuse, remanufacture or recycle). The following information identifies and assesses IKEA's transition to a circular modality along with recommendations for successful implementation.

Step 3, Sub-Step 1: Position the Current Business Model on the Value Hill

The first step encompasses determining where the existing business model lies in the Value Hill tool. Currently, IKEA designs, manufactures, and retails its modular products (uphill phase; see digit 1 on Figure 6). Modular products are easy to repair, reuse, and recycle (downhill phase; impact of circular design on value recovery), and this leads to higher product utilization since customers would be able to repair the products rather than replace them, ultimately, leading to an increase in the life of furniture and fixtures (tophill phase; impact of circular design on optimal utilization). Additionally, IKEA started take-back schemes (IKEA Australia, 2018). This would also have an impact on the value recovery (phase: downhill; see digit 1 on the Value Hill diagram). The company is moving towards the use of sustainable products (uphill), including recycled woods and ethically produced cotton (Nini, 2018).

Step 3, Sub-Step 2: Position your Value Chain Partner on the Value Hill

The circular transactions could not be done in isolation; the business needs to coordinate and collaborate with its value chain partners. IKEA is working closely with its supply chain partners, non-governmental organization (NGO) and United Nations (UN) bodies to become people and planet positive (IKEA, 2014). IKEA has made Universal Trade Zone (UTZ) certification mandatory for all the coffee and tea they serve in IKEA restaurants, as well as the Marine Stewardship Council (MSC) and Aquaculture Stewardship Council (ASC) certifications mandatory for the seafood. These certifications guarantee that the suppliers are using sustainably manufactured/extracted products (phase: uphill; see digit 2 on Figure 6). These steps influence the product design phase for IKEA.

Step 3, Sub-Step 3: Identify the Gaps or Opportunities on Your Circular Value Network

After auditing the level of circular business involvement and supply chain cooperation for the circular business, a company would identify the gaps of opportunity. Currently, upon being sold, IKEA loses ownership of its products. Thus, the products may be disposed of after the end of its life by the buyer. This leads to a loss of valuable resources and technologies (loss during the downhill as no circular activities are possible) and does not allow the company to recycle and reuse the products (loss during the downhill), or extend the life of its existing products (loss during the tophill). In fact, there is still a lack of cooperation and collaboration across the supply chain for IKEA (immature network organization). These gaps are shown in Figure 6 with digit 3. The gaps are present across uphill, tophill, downhill and network organizations.

Step 3, Sub-Step 4: Formulate Circular Business Strategy

Though IKEA has implemented various circular business modalities, there are still numerous circular ventures left to be explored. Administering products as a service modality (PSS) would be a circular option (proposed circular strategies for this case). PSS is a

business model based on the circular principle where the company, rather than selling the product, sells the service that would come from the product, and ultimately, holds the ownership on the product (see Stahel (2010) for Performance Economy and PSS). This circular business model should also be supported by efficient reverse logistics, which helps in getting the products back to IKEA (network organization; see digit 4 on Figure 6). The successful implementation of PSS would allow IKEA to reuse, remanufacture and recycle products after the end of their life.

Thus, IKEA has been working on the ethos of CE. Though the company has inducted numerous circular strategies, still it has not been able to incorporate the close loop strategy one hundred percent. In a close loop strategy, the products/components are reversed back to the existing or new P&C cycle so that the life/value of product/component is enhanced. On the basis of the resources IKEA and its value chain partners have, PSS could be one of the circular strategies to be implemented. The circular strategies bring environmental, economic, and social benefits.

Recommendations

Though transition from a linear model to a circular model of P&C has numerous social, economic and ecological benefits, this shift could be challenging as the transition often requires a paradigm shift throughout the life of a product, i.e. designing, operation, production, marketing and end of life. Further, since all companies might not have all the resources required for this shift, the GPT may differ. Hence, the following actions are recommended.

- A business should assess its business model canvas to determine its stock of circular resources, expertise and economic relevance of the circular model for the company. In fact, economic viability is the most pressing requirement for businesses to adopt CE (Kirchherr et al., 2017). Businesses would need to be confident that the transition to a circular modality would be lucrative.
- Further, circularity requires cooperation and collaboration across the supply chain (European Environment Agency, 2016). A

company should place itself and its supply chain partners across the Value Hill diagram to analyze and identify the value generating circular strategies.

- A company could also choose to transition incrementally rather than make radical circular changes. In doing so, businesses could reduce the inherited circular risks as not all circular models equate to profits for all companies.
- Those companies for whom transition to CE is not feasible under the current circumstances of resources availability could focus on resources conserving business operation practices such as using renewal sources of energies and using recyclable and reusable products from suppliers.

Conclusion

To fill the confusion and gap prevalent when it comes to deciding to transition from a linear to a circular economy, this review paper elucidates a three-step process that would help a business to decide if a circular transition is of benefit through analysis of circular resources, expertise, and value chain partners. This study has highlighted the importance of understanding and assessing the current business activities through business model canvas (BMC) and reconciling these activities along and across the Value Hill diagram to come up with circular business strategies that fit best with an organization.

Since each company is unique in terms of their resources, expertise, and circular activities, the choice of achieving GPT may also differ amongst businesses. A business may focus on uphill, tophill or downhill circular strategies as defined by the Value Hill diagram. Those which focus on the uphill are more concerned with the circular product design; those on the tophill are inclined to optimum product utilization mechanism and those companies which emphasize the downhill are oriented towards resource value recovery modalities. Equally important, the presence of effective circular networks would make the transition from LE to CE easier. Even though this paper is a generic study to assist companies willing to shift to a

circular model of P&C, these generic steps could be applied and tested across industries in the future. The transition from a linear to a circular model has become a mandate for a sustainable future and business entities will play a prominent role in achieving this exuberance economy by balancing people, the planet and profit.

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Malnutrition Intervention in Low Socioeconomic Senior Populations

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ABSTRACT

This study aims to identify the effectiveness of malnutrition intervention programs within senior populations. Government subsidized nutrition intervention programs, such as Meals on Wheels, play a vital role in the prevention of malnutrition in lower socioeconomic senior populations in the United States (Roy, 2006). For many older adults, meals received via nutrition programs serve as a lifeline, meeting essential nutritional needs and preventing premature institutionalized care (Lepore, 2019). Sixty-three Meals on Wheels (MOW) participants residing in Southern California were assessed, comparing nutritional status upon program intake against nutritional status after three to six months to identify improvement or decline. This study relied on self-reporting on the part of senior participants to explore the characteristics related to socioeconomic status and nutritional risk, and collect quantitative data. Further, it aimed to highlight whether nutritional risk was decreased through program usage. Access to the MOW nutrition program was found to correlate with a reduction in malnutrition risk among the participants in the study. Through the use of nutrition programs and their evaluations, malnutrition and malnutrition risk may be detected earlier, and subsequent measures for prevention can be employed.

Introduction

Malnutrition encompasses the deficiencies, imbalances, or excesses of nutrients, which result in an adverse, measurable effect on one's body composition, function, or clinical outcome (Elia, 2000). The term addresses three categories, including under-nutrition (wasting, stunting, and underweight), micronutrient malnutrition (a lack or excess of minerals and vitamins), and obesity or diet-related disease (World Health Organization, 2020). Though its effects are primarily physiological, its causes are often systemic, with under-nutrition and micronutrient malnutrition affecting low income elderly populations at a disproportionate rate (Evans, 2005). With an estimated 9.8 million older adults currently at risk for malnutrition in the United States, and approximately 10,000 Americans predicted to turn 65 each day through 2050, at-risk senior populations will only increase (Eggsdorfer, 2018). Seniors, or older adults aged 60 and over, are now the fastest growing population base, estimated to increase by 3% annually over the next two decades (Eggsdorfer, 2018).

This study highlights the risk factors among vulnerable senior populations, using modified questions from the Mini Nutritional Assessment to collect relevant data (Nestle Nutrition Institute, 2009). The Mini Nutritional Assessment was created by Nestle Corporation, and is a validated screening tool used by government agencies and healthcare providers to predict nutritional outcomes and cost of care (Guigoz, 2002). Data collected from the population sample conveyed a correlation between socioeconomic conditions and malnutrition/malnutrition risk in individuals over 60 years of age, with socioeconomic variables such as marital status, education level, living alone, and local food costs strongly correlated to nutritional status. In general, research has found that for every income increase of 10% or more, malnutrition rates decline by up to 5%, further solidifying the link between malnutrition and poverty (Haddad, 2003). Malnutrition should always be evaluated in the context of its social and economic contributors. These key factors allow for the identification of at-risk individuals, groups, and populations (Alderman et al., 2007).

Malnutrition Risk and Consequences

A predecessor for mortality, malnutrition leads to health consequences such as muscle wasting, reduced cardio-respiratory function, gastrointestinal function, delayed wound healing, and psychosocial effects (Saunders, 2010). Malnutrition affects all populations, with millions at risk daily across the globe (World Health Organization, 2020). Though it is often associated with low income countries, malnutrition remains prevalent in the United States, where 14.3 million U.S. households were food-insecure in 2017 ("Food Insecurity in U.S. Households," 2018). In the U.S. alone, 4.7 million people aged 65 and older currently live below the Federal Poverty Line (Dalaker, 2019).

It has been found that nutritional status directly impacts the rate of functional and physiological decline experienced with age (Blumberg, 1997). Therefore, malnutrition remains a critical public health concern for these populations. Elderly individuals with co-morbidities such as respiratory disease, heart disease, and age-related frailty remain at an even higher risk (Schlip, 2011). Of Americans aged 65 and older, 16% consume fewer than 1000 calories daily (Wallace, 1999). Malnutrition risk includes factors such as old age, low socioeconomic status, and poor physical or mental health, which predispose individuals to food insecurity and improper nourishment (Bekkering, 2016). The rate of risk increases in those that are ill, homebound, have limited access to resources and/or medical care, or are living in poverty (Wallace, 1999). This risk ranges up to 50% higher for those hospitalized, and up to 60% for those in institutionalized facilities such as senior rehabilitation centers, where adequate nutrition upon discharge can be crucial to a successful recovery (Wallace, 1999).

Malnutrition carries an estimated annual cost of \$51 billion in the United States alone, creating a burden for the entire health care system (The Gerontological Society of America, 2015). As average individual life spans have increased over the past several decades, people in developed countries are now living for an average of 80 years (United Nations, 2012). This has led to an inevitable strain on resources to support both quality of life and adequate care, well into one's senior years (United Nations,

2012). Unfortunately, malnutrition and its associated risk factors impact this quality of life directly (Schlip, 2011).

Early intervention is the best method of curbing these risks, preventing further health consequences, while simultaneously, reducing burden to the system (Schlip, 2011). This can occur in a variety of ways, but common methods include government-subsidized intervention programs such as Meals on Wheels (Roy, 2006). For the purpose of this study, a MOW program was selected for examination.

Meals on Wheels Program Background

Funded in part through the Older Americans Act, Meals on Wheels programs operate across the country, with a collective goal of strengthening senior nutritional health and reducing morbidities (Roy, 2006). Nutritious meals are hand-delivered to homebound seniors who qualify via dedicated volunteers. The primary purpose of volunteer delivery is to provide meals, as well as a safety check and a friendly visit for those who are isolated. Programs are independent and locally run through non-profits, each using their own criteria in assessing nutritional risk, program need, and whether an individual qualifies to receive government subsidized service (Meals on Wheels America, 2020). Though private pay options exist, these nutrition intervention programs are utilized at local, state, and federal levels to collect data that determines funding, and both track and improve senior health and nutrition status in local communities. Qualifying programs receive partial funding through the Older Americans Act, Medicaid, and the United States Department of Agriculture (Meals on Wheels America, 2020).

According to Meals on Wheels America, 39% of the total amount spent through the Older Americans Act goes towards providing nutritious meals to 2.4 million seniors each year (Meals on Wheels America, 2020). The majority of seniors utilizing the program are deemed low income, unable to afford the food they need. In 2020, the organization announced it has served 21 million fewer meals compared to 2005, due to increases in food and transportation costs (Meals on Wheels America, 2020). Unfortunately, program

funding has remained the same. Therefore, the welfare and nutritional health of at-risk senior populations remain in jeopardy.

Participants

This study drew from a population of MOW recipients residing in Southern California, who had been receiving MOW services for a period of three to six months. Data was collected between January 2020 and August of 2020, with the intention of using total population sampling. Program participants were informed how anonymous data would be collected and utilized, both for the program and for the purpose of this study. Individuals were able to decline if they did not wish to participate, and their results were omitted from the research pool. Initial intake assessments occurred both in person and via telephone (all follow-up assessments were conducted exclusively via telephone calls due to Covid-19). Subsequent follow-up evaluations occurred at three to six months. All recipients who agreed to data collection and had been on the program for three to six months were included in the study. Initial intake assessments determined participants' existing health and nutritional status prior to joining the program. Follow-up assessments examined malnutrition/malnutrition risk after time using the program, through re-asking the same targeted intake questions about daily meals consumed, weight gain or loss, appetite, and current health conditions, noting any changes.

Method

Program participants received an initial assessment from a trained nutrition program manager, consisting of modified questions from the Mini Nutrition Assessment to identify nutritional status at intake. Questions were modified per the MOW program's own eligibility criteria, and therefore, did not include a body mass index (BMI) measurement. Participants were followed up with at three or six month intervals for further assessment, and asked the same questions to determine change in nutritional status and program outcomes.

Intake to a nutrition program such as MOW is typically two-step, involving a telephone questionnaire to assess risk and program need,

as well as an additional home visit to verify the health status and living arrangements of the participant. Demographics are collected as well as socioeconomic circumstances, health background, and an assessment of the senior's mobility. Modified questions from the Mini Nutrition Assessment are utilized to assess each client, with the exception of the BMI measurement. Responses are recorded on paper and kept on file for each individual client for the duration of their stay with the program. Follow-up assessments, using the same questions from the intake, are intended to track changes in nutritional status across time as well as measure successful program outcomes. For the purpose of this study, nutritional outcomes were evaluated by comparing the intake assessments against the three to six month assessments to track any change in nutritional status (note: due to Covid-19, all program follow-up assessments were conducted via telephone, per state guidance).

Participant Profile

Upon the initial intake screening, 42.86% of participants were at a medium to high risk for malnutrition, 57.14% percent were at a low risk, and 100% of those accepted to the program were at risk for some level of malnutrition. Many exhibited characteristics of frailty and faced socioeconomic hardships such as being unable to afford food, being unable to secure three meals per day or eating minimal fruits, vegetables, and dairy products (micronutrient rich foods typically associated with a healthy diet). While receiving MOW services, each participant received three balanced meals daily, including a pre-packaged breakfast, lunch, and dinner. These meals are planned by a licensed registered dietician to ensure the nutritional and caloric needs of adult seniors are met.

Characteristics of Participants	Percentage of Participants
Male	38.09%
Female	61.9%
Caucasian	74.60%
Hispanic	11.11%
Asian	9.52%
African American	3.17%
Other Race	1.59%
Frail Physical Condition	77.78%
Living Alone	66.67%
Recently Hospitalized	7.94%
Immobile or Wheel-Chair Bound	3.17%

Table 1. Characteristics of Participants.

Out of the 63 MOW participants in the study, 24 were males (38.09%) while 39 were females (61.9%). Of the sixty-three participants, 43 received meals five days a week, with the remainder receiving meals three days a week. Only nine participants received meals seven days a week due to a high level of need. The average age of participants was determined to be 82. Forty-two participants (66.67%) were found to be living alone, while 21 (33.33%) resided with, at minimum, one other individual (spouse, family member, friend, or other). Forty-nine were determined to be frail (77.78%), based on the program questionnaire and in-home assessment. General characteristics from all participants were compiled for reference and displayed in Table 1.

Health data, including recent hospital admissions, was collected upon intake and follow-up assessment, with five (7.94%) having been recently hospitalized prior to or during use of the service. Three (3.17%) were immobile or wheelchair bound, unable to access food through shopping or leaving the home. Of the assessed program participants, 47 identified as Caucasian (74.60%), six identified as Asian (9.52%), seven identified as Hispanic (11.11%), two identified as African American (3.17%), and one identified their race as Other (1.59%).

Out of 105 initial assessments completed, 42 participants left the program prior to a three month assessment. Twelve (28.57%)

opted to end the service due to the Covid-19 pandemic, fearing contamination. Though state guidelines mandated contact-free delivery, these participants opted to rely on grocery delivery services, neighbors, or relatives for meals instead. Of the remaining participants who ended service prior to a follow-up assessment, 11 did so due to dislike of the provided meals (26.19%), six discontinued due to hospital or skilled nursing facility admission (14.29%), and two discontinued due to other unknown means of obtaining meals (4.76%). Eleven participants (26.19%) discontinued due to health conditions, requiring specialized dietary needs the program was unable to accommodate.

Of the remaining participants assessed, 36 (57.14%) were at a low risk of malnutrition upon initial intake, while 27 (42.86%) were at a medium to high risk. Upon follow-up, it was found there was a significant reduction in malnutrition risk for those in the program. According to the program's assessment criteria, 12 is the minimum score denoting nutritional risk, while 21 is the highest.

Contributing Socioeconomic and Health Factors

Of the participants, 42 (66.67%) were single or widowed and reported living alone. Twenty-three participants (36.50%) reported health issues that altered the type or amount of food they consumed daily, 14 (22.22%) reported

tooth, mouth, or swallowing issues that made it difficult to consume food. Four participants (6.35%) reported depression or other neurological issues. Thirty-two (50.79%) reported not having enough money to purchase needed food. Fifty-nine (93.66%) reported being unable to get out to shop for food (due to decreased mobility or physical condition), 38 (60.32%) reported being unable to cook or prepare meals (often due to an inability to stand for long periods, operate the stove, or use cooking utensils). One (1.58%) reported being unable to feed themselves, requiring assistance from a spouse, family member, or professional caretaker. The health and economic profile of program participants is outlined in Table 2 below.

Federal Poverty Line reported being more likely to obtain food from other sources, including grocery delivery and other take-out food delivery services. Those below the Federal Poverty Line reported being unable to access these resources due to a lack of income. Of those who reported being below the Federal Poverty Line, 63.82% expressed interest in community food banks but were unable to access this resource due to being home-bound. This data, though preliminary, allows for enhanced understanding of the characteristics and socioeconomic status of seniors who access nutrition intervention programs.

Findings and Program Effectiveness

Of the 63 participants who were assessed at intake and again at a three or six month follow-up to measure change, 58 participants (92.06%) had improved their malnutrition or malnutrition risk after at least three months in the program, reducing their overall nutritional risk score by four or more points. Three participants had a reduction of two points (4.76%), and two experienced no change (3.17%).

According to the initial data collected through this study, nutritional baseline status improved between the initial intake and the three month follow-up, remaining stable between three and six months of program participation. Of the 63 participants assessed, 92.06% increased their overall nutritional status. Of those participants, 53 (91.38%) went from consuming two or less meals per day to three full meals per day. Fifty-four (93.01%) did not report weight loss during their time on the program.

Through the use of targeted programs, nutritional risk can be reduced, preventing malnutrition and the adverse affects associated with it. This leads to improvements in the overall physical, emotional, and social wellbeing of low socioeconomic elderly populations who otherwise have no means of accessing adequate meals (Endevelt et al., 2011). Further, clients requiring additional interventions (due to safety concerns, cleanliness, cognitive decline, or suspected abuse or neglect) are able to access

Profile of Program Participants	Percentage Impacted
Health issues altering amount of food consumed daily	36.50%
Tooth, mouth, or swallowing issues	22.22%
Chronic depression, anxiety, dementia, or other neurological issues	6.35%
Does not have enough money to purchase food needed	50.79%
Unable to shop for food (due to mobility)	93.66%
Unable to cook or prepare food (due to physical condition)	60.32%
Unable to feed self (requires assistance)	1.58%
Income above Federal Poverty Line	25.39%
Income below Federal Poverty Line	74.60%
Interest in food banks/resources, but unable to access	63.82%

Table 2. Health and Economic Profile of Program Participants.

assistance through licensed case managers and social workers. These services were not relevant to the nutritional improvements outlined, and therefore, were not explored in this study, though they remain a program benefit. Research has found dietary intervention through case management improves medical and nutritional status among senior populations, ultimately improving outcomes and supporting nutrition program effectiveness (Endevelt et al., 2011).

Though this study provides preliminary evidence that program utilization may lead to improved nutritional status, there is no proof that improved outcomes occurred solely due to program participation. Without further knowledge into each participant's individual background, health status, income, and other means of support such as family, friends, and access to other resources, organizations, or social services, the conclusion that improvements are fully credited to MOW cannot be drawn.

Limitations

Due to the outbreak of Covid-19 in the United States and the subsequent state restrictions surrounding program delivery, follow-up assessments could not be conducted face to face, and information was collected via telephone. Further, intake assessments, which normally occur in-home, were also conducted via telephone. This led to a potential margin of error wherein self-reported responses collected from participants may not be fully accurate. In assessing individual capabilities surrounding daily activities or frailty, many may self-report higher levels of independence and capability than may otherwise be observed by a trained professional (Knauper, 2016).

Other limitations included the lack of a control group; therein, causality was not assessed. The data collected was merely a baseline, utilized in determining program eligibility, and did not explore deeper contributing health factors that may contribute to malnutrition or risk, nor did the program measure weight or BMI at intake. In assessing recent weight gain or loss via assessment, it was up to the participant to relay that information to the nutrition program manager, which may have resulted in an

estimation on the part of the individual being assessed. This may have resulted in in-accurate self-reporting. Further strengthening of data collection methods should be employed by the program to better determine both short and long-term nutritional outcomes.

Due to the location of the program and the high-income suburban areas served, participants in the pool skewed predominantly Caucasian. Lastly, only 63 participants were evaluated; thus, conclusions cannot be accurately applied to the entire program or population. Larger and more diverse population samples should be sought in order to better assess outcomes and relevance as well as to reduce sample bias.

Conclusions

The aim of this research was to examine malnutrition risk, its association with socioeconomic, health, and behavioral factors among senior populations, and outcomes related to intervention methods employed. Intervention programs provide seniors with needed nutritional support, leading to improvements in nutritional status, as well as access to resources such as case management, nutrition education materials, and social contact; all of which are crucial in promoting physical, mental, and emotional health and well-being among the elderly (McReynolds, 2004).

Though this study does not directly link causality to the program, it has been found that nutrition programs, such as MOW, appear to be of benefit in preventing malnutrition for low socioeconomic senior populations, otherwise unable to obtain resources and food. Malnutrition in elderly populations can continue to be prevented through early intervention and by providing nutritional support for those who are low income, isolated, or homebound due to frailty, immobility, or other health conditions (Guigoz, 2002). Malnutrition and its associated risk factors should continue to be a subject of research in order to identify and enhance similar programs, initiatives, and intervention strategies.

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