MOREC 2021

MALAYSIA OUTDOOR RECREATION CARNIVAL

MEMPERKASAKAN REKREASI LUAR PASCA PANDEMIK

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JABATAN REKREASI DAN EKOPELANCONGAN
FAKULTI PERHUTANAN DAN ALAM SEKITAR
UNIVERSITI PUTRA MALAYSIA

Diterbitkan oleh
Fakulti Perhutanan dan Alam Sekitar

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MOREC 2021: Memperkasakan Rekreasi Luar Pasca Pandemik

KANDUNGAN

KATA PENGANTAR

Jabatan Rekreasi dan Ekopelancongan (JRE) ditubuhkan secara rasminya pada 1 September 2012. Sebagai salah satu daripada empat jabatan dalam Fakulti Perhutanan dan Alam Sekitar, ia menawarkan program Bacelor Sains Taman dan Rekreasi dengan Kepujian dengan aspirasi untuk mengeluarkan pemimpin yang profesional dalam mengurus dan mengoperasikan hal berkaitan taman alam dan rekreasi dengan lebih beretika serta berdaya maju.

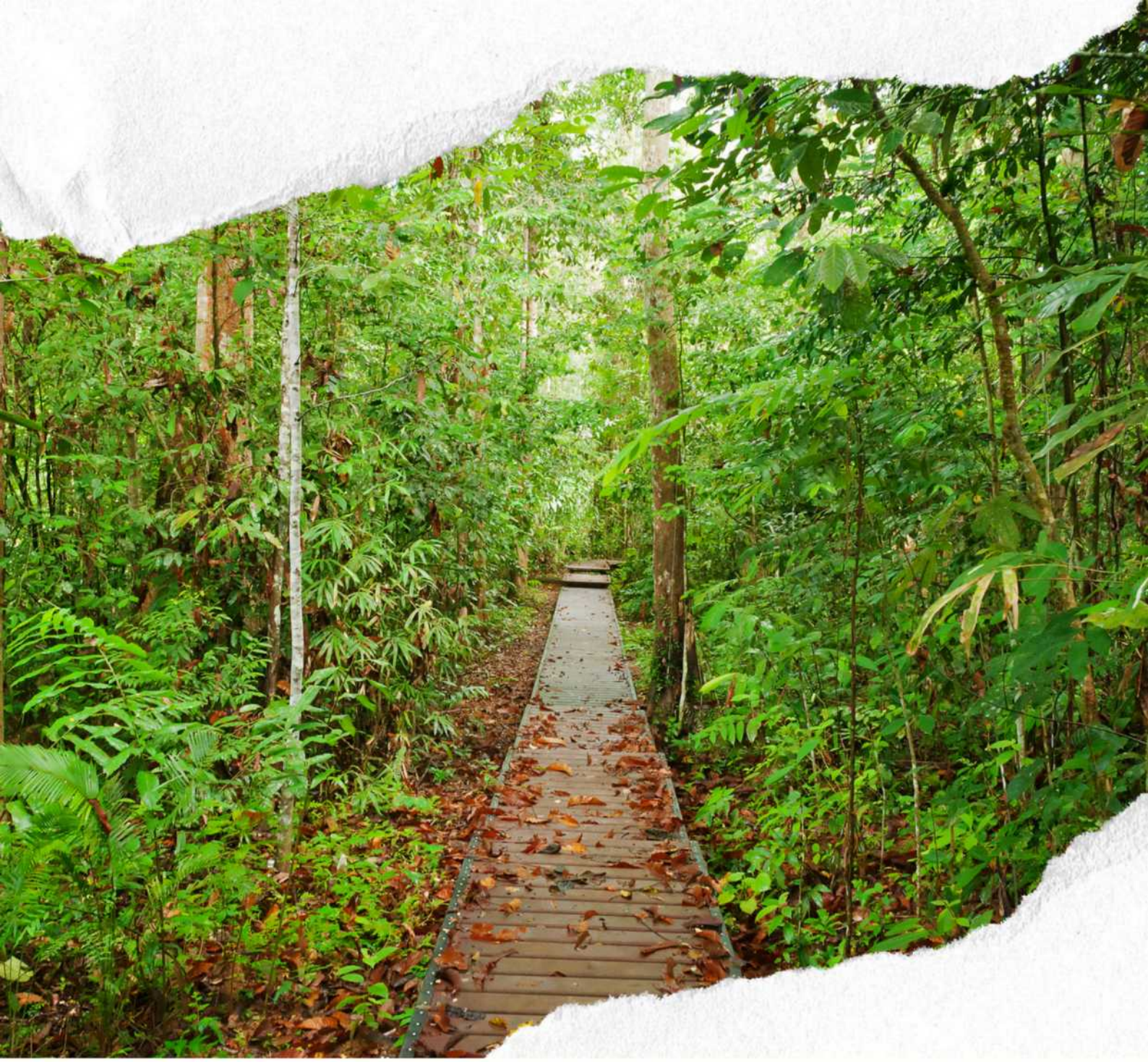
Penubuhan Jabatan ini adalah seiring dengan aspirasi negara untuk memperhebatkan industri pelancongan sebagai pemacu kekuatan ekonomi negara bersesuaian dengan prinsip pembangunan industri pelancongan yang mapan. Sebagai sebuah institusi pengajian tinggi, tumpuannya bukan hanya semata-mata dalam bidang pengajaran dan penyelidikan tetapi sebagai pelengkap dalam pembentukan jaringan ekosistem bersama pemain industri, pemegang taruh dan masyarakat dalam bidang rekreasi. Usaha ini telah membuka peluang kepada ahli-ahli JRE terlibat dalam menyumbang kepakaran bagi pembangunan dan merejuvinasikan pelbagai destinasi pelancongan di seluruh Malaysia. Usaha ini dijalankan sejajar dengan cadangan dan pembangunan pelbagai bentuk aktiviti rekreasi luar, samada aktiviti rekreasi yang bertemakan pendidikan, santai, mahupun aktiviti rekreasi luar berbentuk kembara lasak.

Selaras dalam usaha memperkasa usahasama ahli akademik dan penggiat rekreasi, Jabatan Rekreasi dan Ekopelancongan telah bekerjasama dengan Kementerian Belia dan Sukan melalui Persatuan Jurulatih Rekreasi Malaysia (PJRM) dalam penganjuran Karnival Rekreasi Luar Kebangsaan, ataupun Malaysia Outdoor Recreation Carnival 2021 (MOREC21). Karnival tahun ini merupakan satu acara yang bermakna kerana acara ini telah dimulakan oleh UPM pada tahun 2011 yang dahulunya dikenali sebagai 'Seminar dan Bengkel Pembangunan Rekreasi Luar di Malaysia'. Tahun 2021, ia kembali dianjurkan semula oleh UPM selepas 10 tahun. . Karnival ini dilaksanakan secara penggiliran dengan institusi pengajian tinggi lain seperti Universiti Pendidikan Sultan Idris (UPSI) dan Universiti Teknologi Mara (UiTM).

Menyedari kepentingan perkongsian ilmu dan hasil tiga sesi akademik yang telah dilaksanakan sepanjang MOREC, e-buku MOREC 2021: Memperkasakan Rekreasi Luar pasca Pandemik, ini diterbitkan. Kami berharap penerbitan e-buku ini akan memberi peluang kepada perkongsian ilmu, pengalaman dan kemahiran yang lebih luas dengan pemain industri, penggiat rekreasi dan masyarakat. Kami percaya perkongsian ini akan membantu ahli akademik menyediakan penyelidikan yang lebih bersifat praktikal, transnasional, dan inklusif serta menggerak usahasama antara semua pihak yang selari dengan dasar negara, serantau, mahupun global.

hafizal

TS. DR. MOHD HAFIZAL ISMAIL
KETUA JABATAN
JABATAN REKREASI DAN EKOPELANCONGAN
FAKULTI PERHUTANAN DALM ALAM SEKITAR



1

LATAR BELAKANG MOREC

NOOR JALILAH JUMAAT | ZULKHAIRI AZIZI ZAINAL ABIDIN
AZLIZAM AZIZ | SHAZALI JOHARI

1.1 Pengenalan

Penglibatan dalam aktiviti rekreasi luar dapat memberi banyak manfaat bukan sahaja kepada individu, malahan kepada komuniti secara keseluruhannya. Walaubagaimanapun, situasi pandemik COVID-19 yang melanda dunia telah sedikit sebanyak memberi impak negatif terhadap penglibatan masyarakat dalam aktiviti luar, sekaligus boleh menjejaskan tahap kesihatan mental dan fizikal individu. Pelaksanaan Perintah Kawalan Pergerakan (PKP) telah menyekat kegiatan aktiviti rekreasi, manakala industri rekreasi luar yang menawarkan perkhidmatan dan produk telah berdepan kesukaran untuk beroperasi secara mendadak. Mengambilkira situasi ini telah memberi dorongan untuk menganjurkan Karnival Rekreasi Luar Malaysia atau dikenali dengan nama Malaysia Outdoor Recreation Carnival (MOREC) pada tahun 2021. Penganjuran MOREC 2021 dilihat sebagai salah satu usaha bagi membantu penggiat rekreasi luar untuk berkumpul bersama-sama berkongsi kaedah terbaik pelaksanaan aktiviti rekreasi, selain perkongsian ilmu semasa dalam industri ini. Pelbagai program yang berunsurkan aktiviti fizikal dan sesi perkongsian telahpun diadakan sempena dengan MOREC 2021. Bab ini akan mengupas secara ringkas mengenai objektif dan sejarah penganjuran MOREC serta informasi mengenai penganjuran MOREC 2021.

1.2 Objektif

Secara amnya, karnival ini dirancang untuk meningkatkan potensi industri berkaitan rekreasi luar dari perspektif amalan terbaik, rujukan fakta semasa, dan perkongsian produk. Secara khususnya, empat objektif karnival digariskan iaitu:

a. Memberi ruang dan peluang kepada penggiat rekreasi berkumpul dan berinteraksi.
b. Mendorong pembangunan terancang sukan rekreasi luar di Malaysia dalam suasana norma baharu.
c. Melahirkan pemimpin dan masyarakat cergas, aktif, dan produktif.
d. Menyediakan platform untuk perkongsian fakta semasa dan amalan terbaik.

1.3 Sejarah penganjuran MOREC

MOREC adalah sebuah program bersifat karnival atau berkonsepkan 'jamboree' bagi penggiat industri dan ahli akademik di dalam bidang Rekreasi Luar. Program ini merupakan anjuran Kementerian Belia dan Sukan Malaysia (KBS) dengan kerjasama Persatuan Jurulatih Rekreasi Malaysia (PJRM) dan Jabatan Rekreasi dan Ekopelancongan, Fakulti Perhutanan dan Alam Sekitar, Universiti Putra Malaysia (UPM). MOREC diadakan dengan tujuan untuk menghimpunkan semua penggiat sukan rekreasi luar dan bidang pendidikan luar dalam suatu majlis ilmu yang bersifat santai. Konsep penganjuran program ini adalah jamboree atau karnival separa akademik yang memfokuskan kepada pengamal rekreasi dan para akademia yang akan membentangkan kertas kerja berbentuk amali, kertas konsep dan pembentangan hasil penyelidikan.

Secara asasnya, penganjuran MOREC telah dipersetujui dianjurkan oleh PJRM bersama institusi pengajian awam yang berkaitan dengan rekreasi luar iaitu Universiti Putra Malaysia (UPM), Universiti Teknologi Mara (UiTM), dan Universiti Pendidikan Sultan Idris (UPSI) secara bergilir. UPM memulakan penganjuran MOREC iaitu pada tahun 2011, diikuti oleh UPSI pada tahun 2012, dan pada 2013 di UiTM. Setelah lebih kurang lima (5) tahun tiada penganjuran, UPSI mengambil inisiatif untuk menganjurkan MOREC kali ke-5 pada tahun 2018, disusuli oleh UiTM pada tahun 2019. Pada tahun 2021, Fakulti Perhutanan dan Alam Sekitar UPM telah mengambil penggiliran untuk penganjuran MOREC kali ke-6 agar kesinambungan MOREC sentiasa terjaga. Ia bukan sahaja penting kepada penggiat-penggiat rekreasi luar, tetapi juga kepada pemain industri dan ahli akademik di dalam menyampaikan dapatan ilmu yang terkini untuk dikongsi bersama semua.

1.4 Penganjuran MOREC 2021

MOREC 2021 telah diadakan pada 18 - 19 Disember 2021 yang dianjurkan oleh Kementerian Belia dan Sukan (KBS) sebagai penganjur utama, dengan penganjuran bersama Persatuan Jurulatih Rekreasi Malaysia (PJRM) dan Universiti Putra Malaysia (UPM). Penganjuran MOREC 2021 ini bertempat di beberapa lokasi di UPM iaitu di Bangunan Pejabat Timbalan Naib Canselor Penyelidikan dan Inovasi (White House UPM), Bukit Ekspo, UPM, UniPutra Golf Club, UPM, dan sekitar kawasan akademik. Setiap lokasi dipilih mengikut kesesuaian aktiviti yang dijalankan sempena MOREC 2021.

Bertemakan "Memperkasakan Rekreasi Luar pasca Pandemik", MOREC 2021 telah dirasmikan oleh Timbalan Menteri Belia dan Sukan (KBS), YB Senator Dato' Sri Ti Lian Ker. MOREC 2021 memfokuskan peluang penggiat rekreasi dari pelbagai lapisan masyarakat untuk bersatu bagi memeriah dan memajukan industri rekreasi luar di Malaysia, terutamanya selepas dunia mengalami pandemik COVID-19. Bersempena dengan MOREC 2021 ini, Buku Kurikulum dan Sukatan OUTREC dan Buku SOP Rekreasi Luar Kebangsaan telah dilancarkan. MOREC 2021 telah dihadiri pelajar universiti awam dan universiti swasta, jurulatih yang ditauliahkan, dan penggiat rekreasi dari seluruh negara.

MOREC 2021 menelan belanja sebanyak RM 138,000.00 menerusi sumbangan KBS. Beberapa program telahpun dilaksanakan sempena MOREC 2021 yang mana setiap satu daripadanya mempunyai objektif, dan kumpulan sasaran yang berbeza mengikut keperluan aktiviti-aktiviti yang disediakan. Antara program yang berlangsung semasa MOREC 2021 adalah seperti berikut:

a. Jamboree Rekreasi Kebangsaan

Program ini memberi ruang dan peluang kepada penggiat rekreasi berkumpul, berinteraksi, dan bertukar pandangan tentang produk dan amalan perniagaan terbaik. Antara aktiviti yang dijalankan adalah Jamboree Rekreasi Luar, Outdoor Classes, dan Perkongsian secara maya (*virtual*).

b. Cabaran Kecergasan Kebangsaan

Program ini dijalankan dengan objektif untuk melahirkan pemimpin dan masyarakat cergas, aktif, dan produktif. Berkonsepkan "*Mini Adventure Race*" secara berpasangan. Acara berbentuk pertandingan ini menguji ketahanan dan kelasakan peserta untuk melakukan aktiviti fizikal seperti merentas desa, *orienteering*, berkayak, aktiviti tali, dan permainan tradisional.

c. Colloquium on Adventure and Ecotourism (CAE)

Perkongsian berkenaan dengan cabaran rekreasi luar di era pandemik dari sudut pandangan ahli akademik memberi manfaat dan info berguna kepada peserta yag hadir. Persidangan ini dirangka kepada semua penyelidik serta mereka yang terlibat secara langsung di dalam bidang kembara lasak dan rekreasi luar diperingkat dalam dan luar negara. Platform ini telah membuka peluang kepada ahli akademia membuat kupasan isu semasa industri rekreasi luar dalam waktu pandemik, memberi peluang kepada penggiat industri dan akademia bertukar pandangan dalam sesi soal-jawab/perbincangan, dan pentas sumbang saran atas isu.

d. Bengkel Industri

Program ini menjadi platform perkongsian ilmu, pengalaman, dan informasi terkini berkaitan dengan aktiviti rekreasi luar antara semua pemegang taruh yang berkaitan (pembuat dasar, pemain industri, akademia). Dalam bengkel ini, peserta berpeluang untuk terlibat dalam proses simulasi pembangunan produk dan pemasaran secara am menerusi sesi bengkel yang dikendalikan oleh ahli akademik dari UPM. Menerusi sesi ini juga, peserta berpeluang untuk bekerja di dalam kumpulan bersama-sama ahli dengan latar belakang yang berbeza.

e. Pameran Pendidikan Rekreasi Luar

Program berbentuk pertandingan ini merupakan sesi perkongsian maklumat berkaitan dengan Pendidikan Rekreasi Luar di Malaysia menerusi poster kajian penyelidikan, kelab rekreasi luar di universiti, dan program pendidikan yang sedang dan akan ditawarkan. Beberapa penggiat rekreasi dan akademia dilihat bertukar pandangan atas hasil kajian yang dibentangkan. Peserta juga berpeluang untuk membuat demonstrasi bantu mula kecemasan di ruang pameran menggunakan teknologi *dummy* terkini.

f. Majlis Pentauliahan Jurulatih

Sempena MOREC 2021, Majlis Pentauliahan Jurulatih telah dilangsungkan. Pengiktirafan ini diberikan kepada individu yang telah melepasi Kursus Jurulatih Rekreasi Luar Kebangsaan Tahap III (OUTREC) dan telah lulus beberapa ujian yang telah ditetapkan oleh KBS. Program Kejurulatihan Rekreasi Luar Kebangsaan (OUTREC) merupakan program Bahagian Pembangunan Sukan Cawangan Rekreasi KBS bagi tujuan melahirkan Jurulatih Rekreasi Luar Malaysia yang kompeten atau berkelayakan dalam bidang kejurulatihan rekreasi di Malaysia khususnya. Selain itu, pentauliahan Jurulatih Rekreasi Malaysia Challenge Rope Course (MCRC) turut dijalankan.

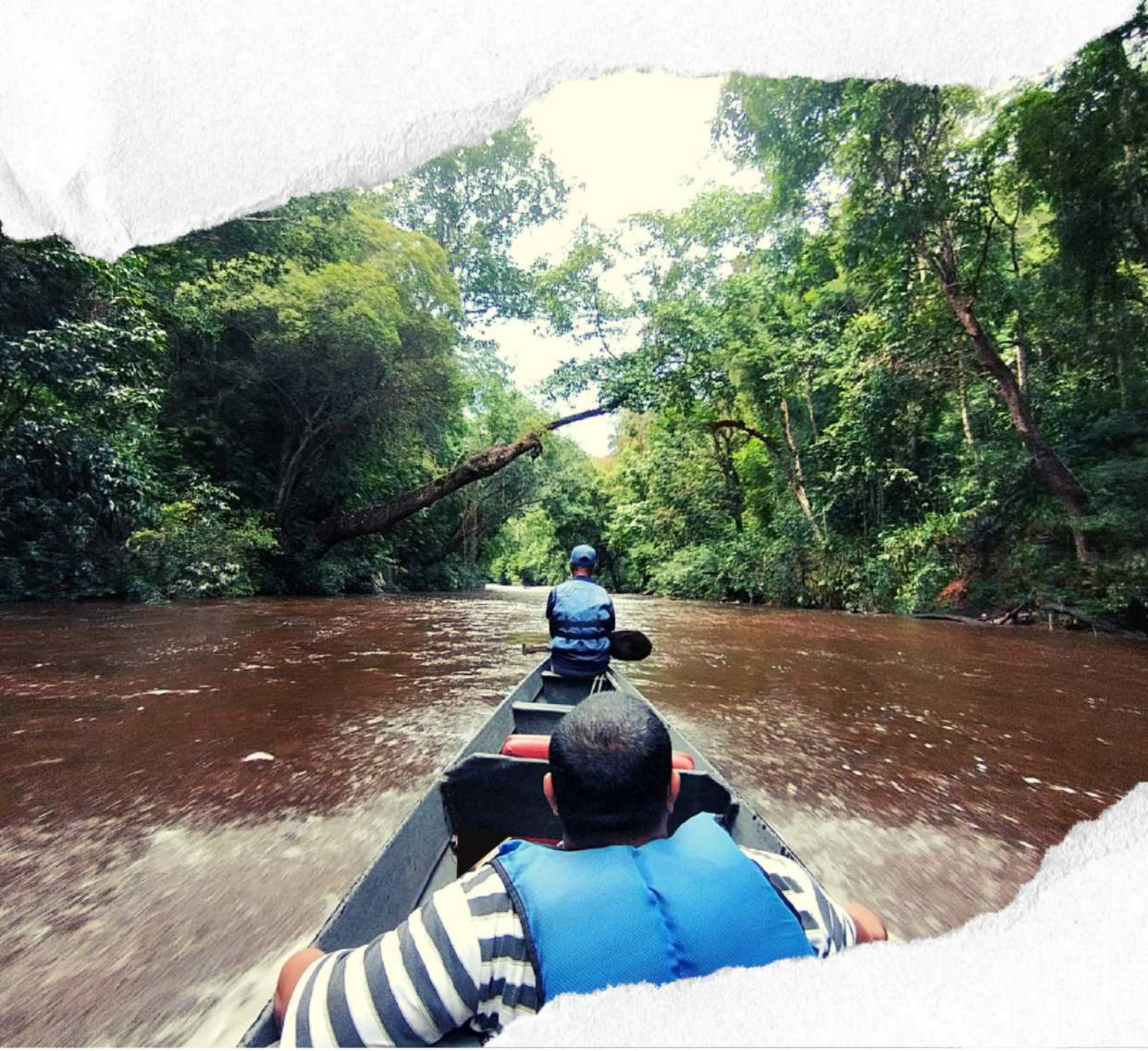
g. Pameran dan Jualan Produk Rekreasi

Program ini bertujuan untuk mendorong pembangunan terancang dan pembangunan sukan rekreasi luar di Malaysia, dan sebagai platform promosi produk semasa. Program ini memberi ruang kepada vendor atau pengilang produk rekreasi untuk mempromosikan produk mereka kepada penggiat rekreasi.

h. Klinik dan Pertandingan Golf

Pertandingan ini melibatkan peserta di kalangan penganjur pameran rekreasi, akademia rekreasi, serta penggiat sukan rekreasi. Program ini merupakan salah satu platform untuk mengembangkan jaringan industri sesama pihak yang pelbagai latar belakang.

Secara ringkasnya, MOREC 2021 merupakan satu inisiatif untuk menggerakkan kembali semua penggiat rekreasi di Malaysia terutamanya selepas negara beransur-ansur beralih dari fasa pandemik kepada pemulihan. Ia juga adalah pentas yang menghimpunkan pemegangtaruh dari pelbagai latarbelakang untuk perkongsian ilmu dan pengalaman dalam aktiviti rekreasi luar, selain memberi peluang kepada pengusaha untuk menjalankan perniagaan mereka. Dengan mengambil kira kekangan pandemik COVID-19, kaedah penganjuran MOREC 2021 adalah secara bersemuka/fizikal dan hibrid (gabungan atas talian dan fizikal).



2

COLLOQIUM ON ADVENTURE AND RECREATION

EVELYN LIM AI LIN | SHEENA BIDIN
MANOHAR MARIAPAN | SITI SURIAWATI ISA

2.1 Pengenalan

Sempena MOREC 2021, Colloquium on Adventure and Recreation (CAE) telah dianjurkan bagi membolehkan ahli akademia dari pelbagai bidang mengupas isu semasa rekreasi luar dalam waktu pandemik. Ia juga menyediakan satu platform untuk ahli akademia dan penggiat industri bertukar pandangan agar resolusi dapat dihasilkan dalam usaha mengaktifkan semula aktiviti rekreasi luar.

2.2 Sesi Pembentangan Panel

Dengan bertemakan 'Memperkasa Rekreasi Luar Pasca Pandemik', 4 ahli akademia telah berkongsi pandangan mereka dalam isu tersebut. Ringkasan pembentangan dan perbincangan adalah seperti di bawah:

2.2.1 Cabaran Rekreasi Luar dalam Era Pandemik

Prof. Dr. Azlizam bin Aziz
Jabatan Rekreasi dan Ekopelancongan
Fakulti Perhutanan dan Alam Sekitar, UPM

2.2.2 Cabaran Institusi Pengajian Tinggi Swasta dalam Bidang Rekreasi Kekal Relevan dalam Era Pandemik

Cik Jane Abi
Sekolah Hospitaliti dan Seni Kreatif,
Management and Science University

2.2.3 Pengurusan Luar: Kompetensi dan Kepimpinan

Dr. Omar Firdaus bin Mohd Said
Fakulti Sains Sukan dan Kejurulatihan
Universiti Pendidikan Sultan Idris (UPSI)

2.2.4 Prosedur Operasi Standard Rekreasi Luar Kebangsaan

En. Hisyam bin Che Mat
Fakulti Sains Sukan dan Rekreasi
Universiti Teknologi MARA (UiTM Shah Alam)

2.2.1 Cabaran Rekreasi Luar dalam Era Pandemik

Prof. Dr. Azlizam bin Aziz
Jabatan Rekreasi dan Ekopelancongan
Fakulti Perhutanan dan Alam Sekitar, UPM

Pandemik COVID-19 telah memberi impak kepada perkembangan dan pembangunan industri rekreasi luar. Tiga kumpulan sasaran yang perlu diteliti dalam menghadapi cabaran rekreasi luar dalam era pandemik ialah pengguna rekreasi, operator rekreasi dan agensi terlibat.

Amnya seseorang pengguna menjalani aktiviti rekreasi bagi merejuvenasi diri, memperoleh keseronokan, kepuasan diri, dan ganjaran sama ada dalam bentuk fizikal, sosial ataupun emosi. Semasa pandemik COVID-19, hasrat untuk melancong adalah tinggi terutamanya apabila prosedur operasi standard (SOP) dilonggarkan. Namun cabaran mereka ialah penentuan sama ada penyertaan dalam suatu aktiviti rekreasi adalah berbaloi dan pemilihan lokasi rekreasi tersebut adalah selamat. Selain itu, perlu disedari bahawa keinginan pengguna terhadap aktiviti rekreasi juga telah berubah. Kini, hidup kita bersifat narsistik di mana masyarakat memberi perhatian kepada usaha menonjolkan diri sendiri contohnya melalui paparan gambar aktiviti rekreasi di dalam platform media sosial seperti TikTok dan Instagram. Berpandukan Diffusion Innovators Model, golongan narsistik ini hanya membentuk lebih kurang 2.5% dari golongan pelancong. Walau bagaimanapun, suatu impak positif kepada kemunculan kumpulan narsistik ialah mereka ini menjadi pemangkin kepada kepada perubahan dan membuka peluang kepada inovasi dalam industri pelancongan.

Selain itu, pemahaman terhadap kesan pandemik dan perubahan keperluan serta kehendak penggiat rekreasi adalah penting supaya pihak operator boleh mengambil peluang ini untuk membuat perubahan untuk memastikan ia kekal relevan. Satu kajian secara atas talian telah dilaksanakan oleh Tourism Malaysia pada tahun 2020 bagi memperoleh pandangan masyarakat berkenaan perjalanan domestik di Malaysia selepas perintah kawalan pergerakan pasca Covid-19.

Kajian mendapati rakyat Malaysia mempunyai keinginan untuk melancong tetapi mereka memberi tumpuan kepada pelancongan domestik dan majoriti lebih cenderung membuat aturan perjalanan sendiri dan bukannya melalui agensi pelancongan.

Maka ini menimbulkan persoalan bagaimana operator pelancongan dan pemandu pelancong boleh kekal relevan seiring dengan perkembangan trend semasa? Untuk menjawab persoalan ini, adalah penting untuk menilai semula ganjaran-ganjaran yang pihak operasi dan pemandu pelancong sediakan bagi menarik pelancong tempatan. Antaranya ialah sejauh mana:

a. pengalaman pelancongan yang disediakan adalah unik dan memberi 'the one and only experience'?
b. pengalaman tersebut memberi 'feel good factor' kepada pelancong?
c. aktiviti pelancongan itu mampu menyumbang balik kepada orang lain dan komuniti? (e.g. kesukarelawan)
d. destinasi dan aktiviti pelancongan menyedia peluang kepada momen sosial media?

Di pihak agensi pula, tindakan perlu dilakukan untuk mengaktifkan semula industri pelancongan dan menyesuaikannya berdasarkan keperluan dan perkembangan semasa, iaitu:

a. pematuhan kepada prosedur operasi standard
b. memulih dan melindungi sumber rekreasi
c. melatih staf bagi memperkasa kemampuan kemahiran
d. menambah ruang untuk aktiviti rekreasi
e. mengubah kepada urusniaga tanpa wang tunai dan tanpa kontak.
f. mempromosi aktiviti rekreasi melalui galakan cara hidup sihat semasa pandemik

Secara ringkasnya, pandemik COVID-19 akan terus kekal bersama kita. Pengajaran yang diperoleh daripada pandemik ialah pentingnya pembangunan industri pelancongan domestik diberi perhatian. Penekanan kepada penghasilan produk yang unik dan mempelbagaikan usaha niaga harus dikembangkan bagi meminima impak pandemik terhadap pemain-pemain industri pelancongan.

2.2.2 Cabaran Institusi Pengajian Tinggi Swasta dalam Bidang Rekreasi Kekal Relevan dalam Era Pandemik

Cik Jane Abi
Sekolah Hospitaliti dan Seni Kreatif,
Management and Science University

Management and Science University (MSU) ialah sebuah universiti swasta yang menawarkan dua program rekreasi luar iaitu Ijazah Sarjana Muda Pengurusan Rekreasi Luar dan Diploma Rekreasi Luar. Subjek-subjek dalam program ini mengajar teori dan praktikal. Antara subjek-subjek berasaskan teori ialah Pengenalan kepada Rekreasi Luar, Geografi Pelancongan, Rekabentuk Fasiliti Rekreasi, Kepimpinan Rekreasi Luar, Rekreasi dan Kurang Upaya dan Pelancongan Rekreasi. Subjek-subjek yang bersifat praktikal ialah seperti renang, pengurusan ikhtiar hidup, operasi menyelamat, teknik pengajaran rekreasi luar, keselamatan rekreasi luar, pengurusan sumber rekreasi dan pertolongan cemas. Subjek-subjek praktikal diterapkan dilaksanakan secara mingguan dengan menerapkan elemen latihan di lapangan dan aktiviti simulasi. Walaupun ruang aktiviti di MSU adalah terhad tetapi lokasi MSU yang berhampiran dengan pelbagai kemudahan rekreasi seperti taman botani dan taman akuatik memudahkan urusan pelaksanaan amali luar. Pelajar digalakan untuk menyertai pelbagai program kemahiran rekreasi di luar kampus. Selain itu, pelajar turut menyertai kursus yang menawarkan sijil-sijil profesional dalam pelbagai dispilin rekreasi. Program pensijilan ini adalah penting bagi menambahnilai graduan MSU dalam bidang rekreasi luar di alam pekerjaan.

Program rekreasi luar MSU turut menganjur pelbagai program bersama agensi dan industri rekreasi luar di Malaysia. Antara program yang dianjurkan ialah program kejurulatihan rekreasi bersama PDRM, sijil OUTREC 1 and 2, sijil scuba diving, latihan professional dan program pensijilan mengikut tahap masing-masing. Melalui Outdoor Recreation Club (ORC), MSU, pelajar juga terlibat dalam program khidmat masyarakat seperti aktiviti trekking dan membersihkan laluan Bukit Kutu dengan kerjasama MOTAC. Pendedahan diperingkat global turut diberikan kepada pelajar melalui Program Kepimpinan Global di mana pelajar didedah dengan program rekreasi luar di luar negara, sesi perbincangan dan melaksana aktiviti dengan penduduk tempatan.

Apabila pandemik COVID-19 melanda dan perintah kawalan pergerakan dikuatkuasa pada 18 Mac 2020, pembelajaran secara bersemuka, aktiviti dan program rekreasi di lapangan terpaksa ditangguhkan serta-merta. Proses pembelajaran telah dilaksanakan secara maya. Namun pembelajaran secara maya menghadapi cabaran apabila pelajar mengalami krisis peralatan elektronik dan ekses internet, malah pihak universiti turut menghadapi cabaran dalam menyediakan kemudahan serta teknologi pembelajaran secara efektif. Pembelajaran secara maya menghasilkan situasi di mana kehadiran pelajar di ruang maya menghadkan interaksi sosial antara pensyarah-pelajar dan pelajar-pelajar menyebabkan mereka hilang minat untuk belajar. Situasi ini turut mengganggu kesihatan mental mereka terutamanya di kalangan pelajar yang lemah kerana mereka kurang kemampuan untuk menyata atau menyumbang idea terhadap tugasan secara efektif atau berkongsi permasalahan mereka. Pembelajaran secara maya juga menyebabkan pelajar kurang latihan dalam penulisan dan berlakunya penularan amalan 'copy dan paste', lantas merumitkan proses semakan. Ini menyebabkan pensyarah memerlukan penggunaan aplikasi yang dapat memudahkan pengesanan 'copy and paste' bagi memantau serta mengawal amalan tersebut.

Bagi memastikan proses pembelajaran pelajar kekal relevan dan bersesuaian dengan keperluan mereka, modul pembelajaran yang lebih fleksibel diamalkan. Walaupun proses pembelajaran secara bersemuka telah dilaksanakan dalam fasa peralihan, usaha untuk mengembalikan pembelajaran secara praktikal dicabar dengan peningkatan kos aktiviti dan sewaan peralatan. Oleh itu, para penggiat rekreasi diseru agar dapat mempertimbang dan menyediakan harga aktiviti yang lebih berpatutan dan tidak mengenakan syarat penyertaan yang terlalu ketat bagi memastikan usaha mendidik bakal penggiat rekreasi tidak terganggu dan usaha mengaktifkan industri rekreasi luar dapat diteruskan. Selain itu, wujud keperluan untuk menstruktur semula modul pensijilan untuk menarik lebih ramai peminat rekreasi luar.

2.2.3 Pengurusan Luar: Kompetensi dan Kepimpinan

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Dalam pengurusan rekreasi luar, kita menghadapi beberapa cabaran iaitu:

a. adakah kita mempunyai data statistik tentang aktiviti rekreasi luar?
b. adakah kita mempunyai data insiden aktiviti rekreasi luar?
c. apakah standard yang diamalkan dalam pelaksanaan aktiviti rekreasi luar?

Kekurangan maklumat ini mempengaruhi kompetensi pelaksanaan aktiviti rekreasi luar. Menurut Núñez, Romero, Sánchez & Aránega (2018), kompetensi ditakrifkan sebagai gabungan aspek pengetahuan, kemahiran dan ciri peribadi yang perlu dimiliki dan diamalkan untuk melaksanakan sesuatu pekerjaan atau jawatan. Jurulatih yang cekap perlu menguasai prinsip atau konsep asas sesuatu kemahiran. Boyatzis (2011) mendefinisikan kompetensi sebagai kebolehan dan keupayaan seseorang. Kebolehan dan kompetensi ini melahirkan niat seseorang untuk bertindak melakukan sesuatu pekerjaan. Institusi Aminuddin Baki (2015) mendefinisikan kompetensi sebagai nilai profesional, pengetahuan dan kemahiran yang perlu ada pada seseorang individu dalam organisasi. Hallinger (2011) kompetensi merujuk kepada pengukuran kriteria penilaian kendiri, dan mengawasi akses (rating) dan kadangkala penilaian rakan sebaya. Barry (2011) menyatakan bahawa, kompetensi bukan sekadar prestasi profesion sebenar, tetapi ia juga merujuk kepada penilaian kendiri (self-assessment), kebolehan (abilities) dan pengetahuan (knowledge) seseorang individu.

Berdasarkan definisi ini, adalah penting untuk mengetahui bagaimana penilaian kompetensi ditentukan dan apakah tahap-tahap kompetensi. Ini kerana pada masa ini tiadanya instrumen pengukuran di dalam negara bagi menentukan tahap kompetensi jurulatih atau penggiat rekreasi. Namun salah satu instrumen yang telah dibangunkan UPSI ialah Outdoor Competency Leadership (OCL-oMR) dan Outdoor Competency Leadership Model (OCL-oMR Model) bagi menilai kompetensi pendidikan luar di Malaysia.

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2.2.4 Prosedur Operasi Standard Rekreasi Luar Kebangsaan

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Fakulti Sains Sukan dan Rekreasi
Universiti Teknologi MARA (UiTM Shah Alam)

Perintah Kawalan Pergerakan (PKP) telah memberi pelbagai impak kepada bidang rekreasi dan pendidikan luar. PKP telah membantutkan proses pembangunan ekonomi di kalangan rakyat di mana ramai yang kehilangan sumber pendapatan terutamanya mereka yang bergiat sepenuh masa dalam bidang ini seperti jurulatih pendidikan luar, pengusaha rekreasi luar dan sebagainya. Penguncupan pendapatan bagi sektor industri sokongan dan aliran seperti barang keperluan untuk rekreasi dan pendidikan luar. Dalam pespektif sosial, PKP telah mengehadkan pergerakan individu terutamanya untuk berada di luar dan kawasan semulajadi serta mengganggu proses pembelajaran di IPT serta sekolah. Disebabkan oleh kawalan pergerakan dan pembelajaran secara talian, ia telah menyebabkan peningkatan kepada masalah kesihatan mental dalam masyarakat.

Sehingga ini, prosedur operasi standard yang sedia ada untuk bidang rekreasi luar ialah berpandukan Prosedur Operasi Luar Rekreasi Luar Pelajar Institusi Pengajian Tinggi oleh Kementerian Pendidikan Tinggi pada tahun 2018. Namun, tiadanya satu SOP untuk para penggiat rekreasi. Oleh itu, usaha untuk menghasilkan Prosedur Operasi Standard Rekreasi Luar Kebangsaan telah dimulakan pada hujung tahun 2019 supaya ia dapat memberi panduan kepada para penggiat rekreasi dan pendidikan luar. Penghasilan buku ini adalah penting bagi memastikan aktiviti rekreasi dilaksanakan secara selamat dan memenuhi tahap kompetensi yang memuaskan untuk pelbagai kumpulan penggiat rekreasi sebagai usaha memastikan kelestariam pembangunan rekreasi luar di Malaysia.

2.3 RESOLUSI KOLOKIUM:

Dalam konteks menangani peningkatan kos pelaksanaan aktiviti rekreasi luar, telah dicadangkan pengajar dalam bidang rekreasi memperoleh atau terdiri dari kalangan jurulatih rekreasi bertauliah yang membolehkan mereka mengendalikan kursus-kursus rekreasi di lapangan untuk pelajar-pelajar institusi pengajian tinggi. Melalui amalan ini, ia dapat membantu mengurangkan kos pelaksanaan aktiviti luar untuk para pelajar.

Buku Standard Operasi Prosedur Rekreasi Luar Kebangsaan diterbitkan pada tahun 2021. Buku ini telah ditulis berdasarkan ketetapan Majlis Keselamatan Negara dan Kementerian Belia dan Sukan. Namun edaran dan capaian buku ini adalah terhad. Oleh itu, para penggiat rekreasi dan pendidikan luar telah menggesa supaya memudahkan kebolehcapaian terhadap buku ini supaya para pelajar dan penggiat dapat berusaha ke arah pencapaian standad operasi yang terbaik. Ini adalah penting supaya para penggiat dapat membangun dan memajukan industri ini bagi memberi jaminan perkhidmatan terbaik kepada para pelancong dan mengaktifkan semula industri. Pada masa yang sama proses pemonitoran di lapangan adalah penting dan 'reward' kepada mereka yang mematuhinya.

PANELIS KOLOKIUM

PROF. DR. AZLIZAM AZIZ

Profesor di Jabatan Rekreasi dan Ekopelancongan, Fakulti Perhutanan dan Alam Sekitar, Universiti Putra Malaysia (UPM). Beliau juga aktif sebagai seorang Perunding Utama dan pakar rujuk untuk pelbagai projek rekreasi dan ekopelancongan, baik di dalam mahupun luar negara.

DR. OMAR FIRDAUS BIN MOHD SAID

Pensyarah Kanan Fakulti Sains Sukan dan Kejurulatihan, Universiti Pendidikan Sultan Idris (UPSI). Bidang kepakaran beliau adalah dalam pendidikan luar dan rekreasi

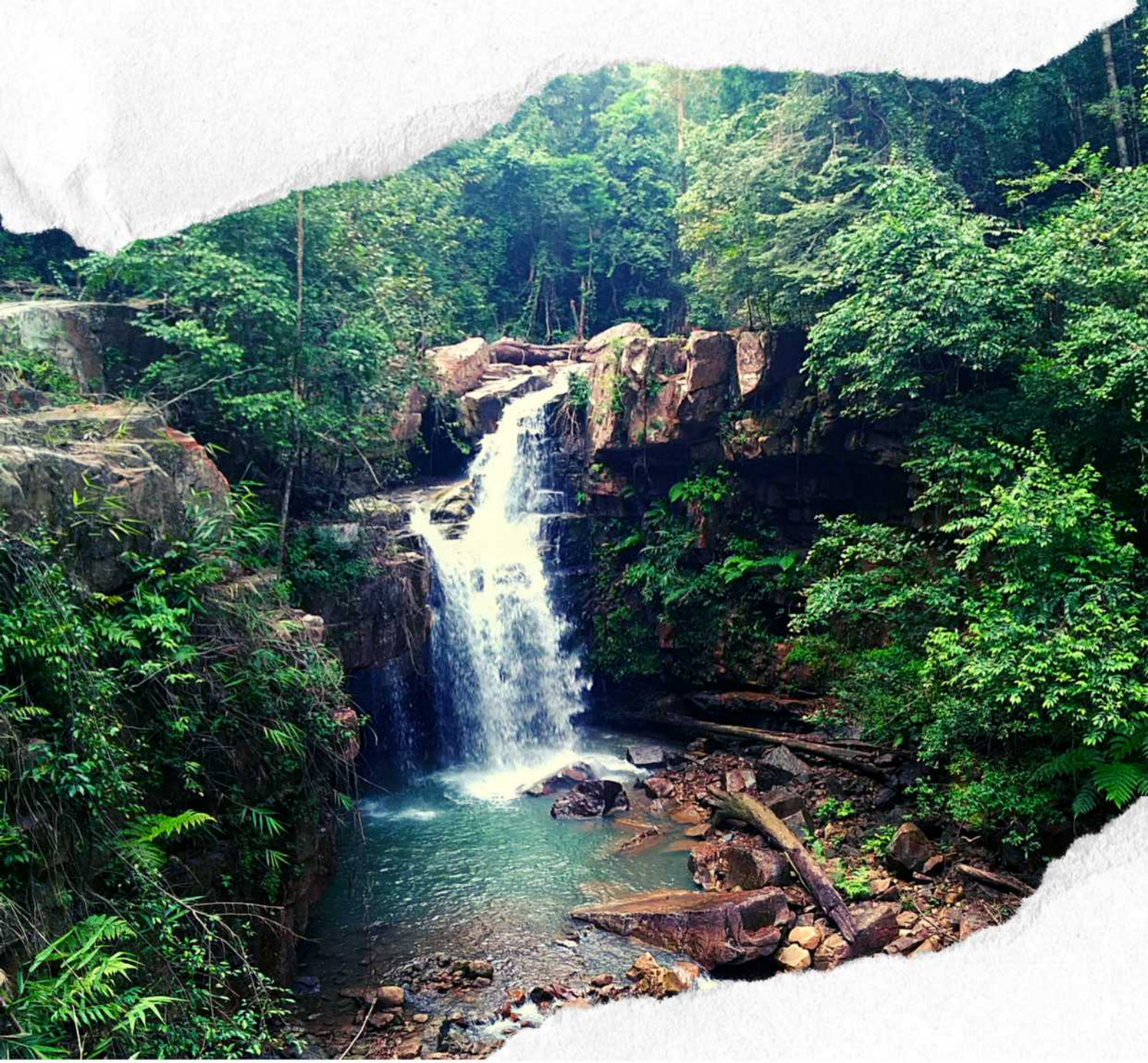
EN. HISYAM BIN CHE MAT

Pensyarah Kanan dalam bidang Rekreasi Luar di Fakulti Sains Sukan dan Rekreasi, Universiti Teknologi MARA (UiTM Shah Alam). Beliau aktif dalam bidang kejurulatihan rekreasi, terutamanya dalam kepimpinan, motivasi dan bina pasukan.

CIK JANE ABI

Pengurus Program/ Pensyarah Pengurusan Rereasi Luar di Sekolah Hospitaliti Dan Seni Kreatif, Management and Science University. Beliau mempunyai lapan tahun pengalaman dalam pengajaran subjek-subjek teori dan praktikal dalam bidang rekreasi dan pengurusan taman.

Gambar sekitar kolokium



3

PENYELIDIKAN

NOR AKMAR ABDUL AZIZ | MOHD HAFIZAL ISMAIL
SAM SHOR NAHAR YAAKOB

3.1. Pengenalan

Kini, aktiviti rekreasi luar semakin mendapat sambutan hangat di seluruh dunia. Aktiviti ini menjadi pilihan untuk mengisi masa lapang dan riadah setelah Malaysia mengumumkan untuk beralih ke fasa endemik. Aktiviti rekreasi luar ini dilihat semakin berkembang menjadi suatu industri yang mensasarkan kepada pembangunan kemahiran rekreasi, pengantara dalam pembentukan sahsiah dan dapat dijadikan sebagai penjana pendapatan. Maka tidak hairanlah, sesetengah penggiat rekreasi luar mula menjadikan bidang rekreasi luar ini sebagai karier atau kerjaya mereka.

Perkembangan sosio ekonomi, keprihatinan netizen terhadap kesihatan dan kepesatan penubuhan pelbagai persatuan dan organisasi (NGO) dalam rekreasi luar ini menjangkakan rekreasi luar akan terus berkembang di Malaysia. Dengan kuasa media sosial, peralatan yang mudah didapati dan banyak operator menawarkan servis dalam bidang ini membuatkan orang ramai tidak melepaskan peluang untuk mencuba dan seterusnya menerokai rekreasi luar.

Bab ini bertujuan memberi peluang kepada beberapa penyelidik untuk berkongsi hasil kajian mereka dalam bidang rekreasi luar. Kajian ini mempunyai empat pendekatan yang berbeza mengenai rekreasi luar. Kajian-kajian ini membincangkan mengenai strategi dan perkembangan rekreasi luar seiring dengan teknologi terkini dan juga mengikut kesesuaian pasca pandemik yang mempunyai beberapa isu dan cabaran. Secara keseluruhannya, walaupun penyelidik mempunyai isu dan permasalahannya yang tersendiri, namun secara tidak langsung penyelidik berjaya mengupas dan mencetuskan idea ke arah memperkasakan bidang rekreasi luar ini.

Diharap dengan perkongsian ini dapat membuka minda pembaca tentang pelbagai topik yang menjadi perhatian penyelidik rekreasi luar masa kini di Malaysia. Selain itu, isu yang dibincangkan seterusnya memberi ruang untuk menyusun strategi tersendiri bagi mengatasinya.

OPTIMIZE THE ACCURACY OF NUMBERS ON BIB MARATHON PREDICTIONS USING DEEP LEARNING

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Abstract

Today, deep learning introduces a major twist in the field of machine learning by making it more artificially intelligent with the rise of Artificial Neural Network (ANN). Digit Recognition is one example of a computer's capacity to identify printed numbers. The machine has difficult work since printed numbers are not flawless and can be in a variety of forms. The purpose of this study is to develop a digit recognition model using a Convolutional Neural Network (CNN). The objective is to detect and predict the numbers printed on bib marathon. This study trains the proposed model using the Modified National Institute of Standards and Technology (MNIST) dataset. There are 4 phases in this study which are, collect and prepare data, build and compiled the model, trained and evaluated, and forecast the outcome. The result shows the accuracy of the model is 98.00 percent in detecting and predicting numbers.

Introduction

Today, digit recognition is a common field in image processing. Recognition of digit has been around since the 1980s. There are many multiple daily tasks such as bank check processing, bank account number, invoice analysis, and postal mail reading using digit recognition. Digit recognition is a hard issue because there are many various characteristics and types of fonts. The main problem with digit recognition is the accuracy rate of recognition. Each font has its own set of criteria in style, resulting in various forms of variation and even size. There are also differences in terms of digit thickness that further complicate the classification of numbers.

The goal of this project is to develop a model that can detect and determine bib marathon numbers using the Convolution Neural Network (CNN). This study aims to create a model to recognize bib marathon number using CNN and develop a digit recognition prototype for proof of concept.

Background Study

Detecting and recognizing bib number in Marathon natural images is a challenging task because of unconstrained poses created by background, runner body movement, printed materials quality, and bib number font variations. Previous researchers have explored several multi modal approaches to overcome these challenging issues such as combining biometric and textual features (Roy et al., 2015), integrating torso and text detection (Shivakumara et al., 2017), deep learning racing bib number (RBN) (Wong et al., 2019), and YOLOv3 (You Only Look Once) algorithm (Rayhan & Lhaksmana, 2020). However, the findings of previous studies indicate the volume of dataset is important to train the machine learning algorithm for detecting and recognising RBN accurately.

Machine learning algorithm is necessary to resolve the computer problem (Alpaydin, 2020). Generally, a sequence of instructions is required to convert the input into the output. Some researchers call it a formula. Data has patterns, its input and output are beneficial to learn for further study. This formula of machine learning is applicable to detect trends and regularities in data. In an application embed with machine learning, it may accomplish a given instruction and start learning the pattern of data. Continuous learning will yield advance experience in performing the given instructions.

CNN is a type of deep learning architecture. This method is a multi-layer neural feed-forward network, can extract attributes from input data. CNN is trained using the neural network back-propagation technique. Even though learning sophisticated, high-dimensional, non-linear mappings from a vast amount of data is difficult, CNN has the capacity to perform the task. Thus, it requires very less pre-processing compared to traditional image categorization algorithms.

According to Yu et al. (2015), CNN learns the filters are hand-engineered in traditional algorithms. One of the benefits is automate extract invariant prominent characteristics, and shift and shape distortions of the input characters to a certain extent. Basically, CNN compresses the images into a format that is easier to process without losing important features for prediction. CNN are made up of numerous layers, with convolutional, pooling, and fully connected layers being the most common. The first layer is convolution, which collects features from an input image. Convolution learned visual features from small squares of input data, preserving the relationship between pixels. It's a mathematical process with two inputs, such as an image matrix and a kernel or filter. If the photos are too large, the Section Pooling Layers will limit the number of parameters. Spatial pooling, also known as subsampling or down sampling, reduces the dimensionality of each map while retaining crucial data. In a fully connected layer, the matrix is flattened into a vector and fed into the fully connected layer like a neural network. The feature map matrix will be converted to a vector. To create a model with completely connected layers, these features will be combined (Goh and Ab Ghafar, 2021).

Table 1: Comparison Table of Existing Digit Recognition

Approach	Summary	Advantages	Disadvantage	Reference
Stochastic and Gradient Descent	In this paper, authors proposed logistic regression for automatic digit recognition. Only two pair of digits is used in the experiment. Stochastic gradient descent model is used. Authors vary the training and testing data sample size to examine the model accuracy. Result show that the accuracy remains consistent across all sample size. The large samples used; the accuracies are higher.	It is easier to fit into memory due to a single training sample being processed by the network	Due to frequent updates the steps taken towards the minima are very noisy. This can often lead the gradient descent into other directions.	Chen (2018)
Support Vector Machine and Convolutional neural network	The aim of this paper is to develop a hybrid model of a powerful Convolutional Neural Networks ((CNN)) and Support Vector Machine (SVM) for recognition of handwritten digit from MNIST dataset. The proposed hybrid model combines the key properties of both the classifiers. In the proposed hybrid model, (CNN) works as an automatic feature extractor and SVM works as a binary classifier	Relatively memory efficient and more effective in high dimensional spaces.	Algorithm is not suitable for large data sets and does not perform very well when the data set has more noise.	Ahlawat and Choudhary (2020)

Convolutional neural network	The main objective of this paper is to create a better model for handwritten digit recognition. Convolution Neural Network and MNIST dataset is used. Authors has demonstrated ConvNet can be used to implement our model with CPU training. Authors has state that Convolution Neural Network provide better performance than other classifiers	Fast to train the model	The speech quality might be degraded	Hossain and Ali (2019)
Energy-based features	In this research, a Kannada handwritten digit identification method based on energy properties is suggested. There are no ground truth datasets offered to assess the occurrence of suggested showcases. As a result, an original dataset of Kannada handwritten digits is gathered, and the digital pictures are pre-processed using structural opening operation to remove noise and bilinear operation to normalize	Simplicity and stability	Difficult to keep track of all their rapidly fluctuating internal degrees of freedom	Mukarambi and dhandra (2020)
Corner Detection and Convolutional Neural Network	This research offers a handwritten digit identification approach based on the Harris corner recognition algorithm and a convolutional neural network for the automated and accurate recognition of handwritten form data ((CNN)). The Harris corner identification technique is utilized to recognize the form image's positioning markers, which specify the probable fill-in positions of handwritten numbers. The handwritten digit characteristics of the object region in the copy are detected using a 14-layer (CNN) shape and the ReLu act as the inflammation function	Keep the useful image information	Sensitivity to noise	Zhong et al. (2020)
Ensemble Learning	In this work, a straightforward novel methodology is proposed to perceive the transcribed digits. The essential objective of this work is acknowledgment of the transcribed digits by utilizing group learning. Gathering learning further develops assembly by diminishing the intricacy of the model. The appropriation of information in the arbitrary split and class-wise split for the base students has been considered.	Generate better forecasts and perform better than anyone contributing model.	More to create, train, and deploy.	Nandan et al. (2020)

The Table 1 shows the summary of literature about the digit recognition. The summary shows neural network is the tendency of image recognition field. When comparing different approaches in most studies, the technique that uses a neural network algorithm performs better than the others.

Methodology

This study utilizes the neural network technique. There are four main methodology phases. The first phase is to collect and prepare data. The model is then built and compiled in the next phase. The model is trained and evaluated in the third phase. The final phase is to forecast the outcome. Figure 1 shows the flowchart of research process.

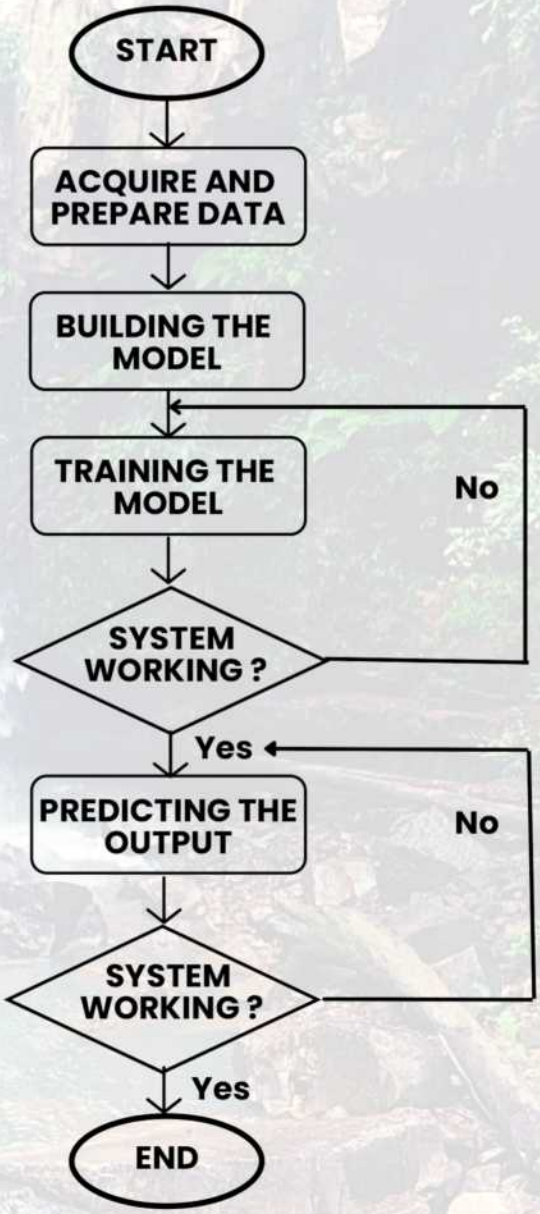

Figure 1. Research process flow chart

During the first phase, data is collected and prepared. The goal of this phase is to import the dataset. The selected data is modified National Institute of Standards and Technology (MINST). It was the subnet of NIST dataset LeCun (1998). Typically, this data set is used to evaluate image processing technologies. The Hello World data set is utilized in the field of computer vision because of the number of data points in the dataset and it is simplicity. A HelloWorld programmed is a generic phrase for an introduction programmed in a domain that demonstrates the subject's fundamental ideas.

This collection contains grayscale images of digits, each measuring 28 by 28 pixels. The photos have been adjusted to fit in the center of the bounding box. The dataset contains a training data set of 60,000 images and a testing data set of 10,000 images. There are 240,000 training images and 40,000 testing images in the extended MNIST dataset. The goal is to train a model to predict the label of a number from the selected dataset. There are ten different labels to choose from, ranging from number zero (0) to number nine (9). The model's output is a set of confidence levels for each digit.

Phase 2 is building a model. During this phase, an appropriate machine learning algorithm for the problem statement and data at hand is chosen. Then, taking numerous things into account, such as memory requirements, a specific algorithm within the category is established, prediction time, training time, ease of deployment, etc.

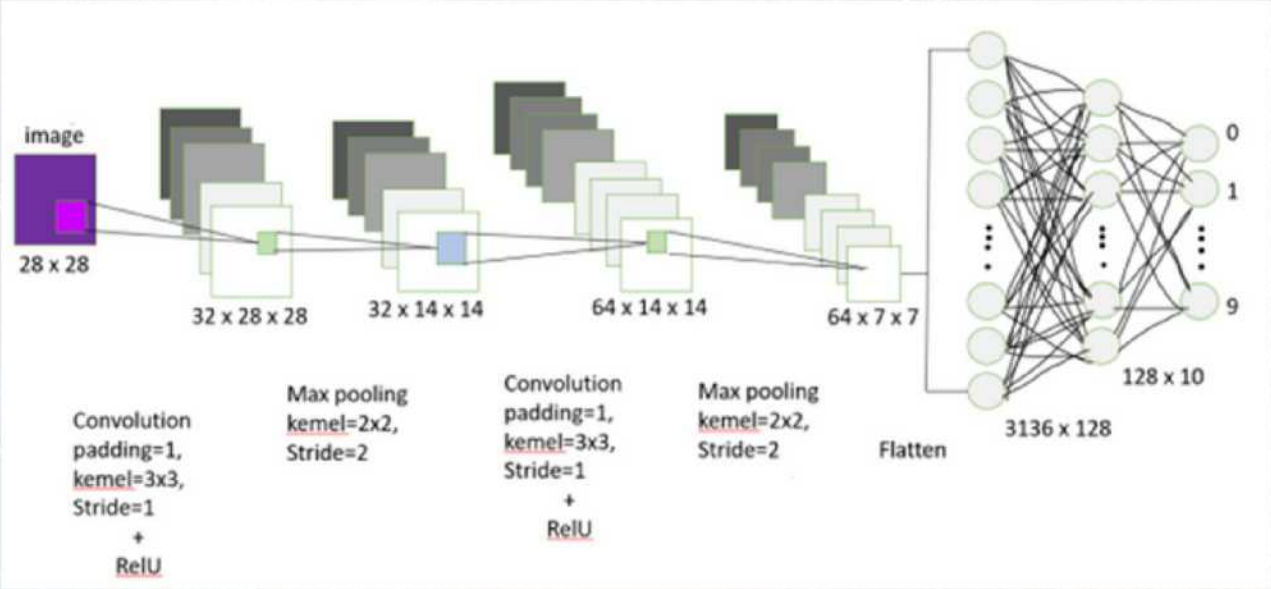

Figure 2. Research Model Architecture

In phase 2, each convolution layer with RelU activation function and a maxpool layer (fig. 2). Non-linearity is introduced by RelU, and noise is reduced through max-pooling. Because the images are grayscale, the first convolution layer uses a channel of dimension one. The size of the kernel was chosen to be 3x3 with a stride of 1. This convolution's output was set to 32 channels, implying that it extracted 32 feature maps from 32 kernels. The image was pad with a padding size of 1 to match the input and output dimensions. This layer's output dimensions were 32 x 28 x 28. It was then given RelU activation, followed by a max-pooling layer with a kernel size of 2 and a stride of 2. The feature maps are down-samples to dimension 32 x 14 x 14.

The input channel size for the second convolution layer was 32. Selected a 64-channel output size, which implies it extracted 64 feature maps. This layer has a kernel size of 3 and a stride of 1. Utilized a padding size of 1, again, to keep the input and output dimensions the same. This layer's output dimensions were 64 x 7 x 7. With a RelU activation and a max-pooling layer with kernel size 2 and stride 2 with a RelU activation. The down-sampled feature map dimensions were 64 × 7 x 7. Finally, the first convolution layer and the second convolution layer are employed, which are both fully connected layers. The first fully connected layer received a flattened version of the feature maps. As a result, it must have a dimension of 64 x 7 x 7, or 3136 nodes. This layer was connected to a 128-node layer that was fully connected. Because this was the final layer, the output dimension corresponded to the total number of classes, which was ten. So, have two fully connected 3136 x 128 layers, followed by 128 x 10.

The third phase is about training and evaluate the model. In this phase, the model is trained by using the data from the previous phase. The testing data set is used to evaluate the model. The testing dataset representative of the data. The estimate of how well the model will perform on the data the model has not seen during training can be obtained. Figure 3 shows the snippet of Python coding for model training.

```python
no_epochs = 100
train_loss = list()
val_loss = list()
best_val_loss = 1
for epoch in range(no_epochs):
    total_train_loss = 0
    total_val_loss = 0

    model.train()
    # training
    for itr, (image, label) in enumerate(train_dataloader):
        optimizer.zero_grad()

        pred = model(image)

        print(image.shape)
        print(pred.shape)

        loss = criterion(pred, label)
        total_train_loss += loss.item()

        loss.backward()
        optimizer.step()

    total_train_loss = total_train_loss / (itr + 1)
    train_loss.append(total_train_loss)
```

Figure 3. Training model coding

Phase 4 is predicting the output. In the last phase, the model is used to predict the outputs for the given data. The MNIST database of digits, available from this page, comprises a training set of 60,000 samples, and a test set of 10,000 samples. In a fixed-size image, the digits have been size-normalized and centered. The predicted label is shown above each image (fig. 4). From the results our model is predicting well.

```python
# visualize data
fig=plt.figure(figsize=(20, 10))
for i in range(1, 6):
    img = transforms.ToPILImage(mode='L')(mnist_trainset[i][0])
    fig.add_subplot(1, 6, i)
    plt.title(mnist_trainset[i][1])
    plt.imshow(img)
plt.show()
```

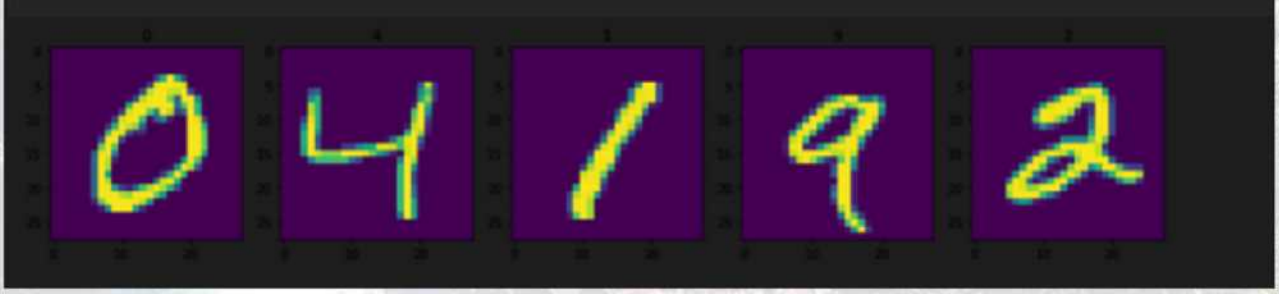

Figure 4. Result Model

Results

The experiment yields a digit prediction for each number ranging from number zero (0) to number nine (9). Figure 5 shows the test harness of dataset, where every fold is achieved more than 98.00 % accuracy

```
In [16]:  1  run_test_harness()

> 98.692
> 98.700
> 98.583
> 98.783
> 98.517
```

Figure 5. The figure shows the good result from the model

The model can predict the output successfully for number 1 until number 8. Example is given in Figure 6. It shows the digits 1 is successfully predicted as the given number 1.

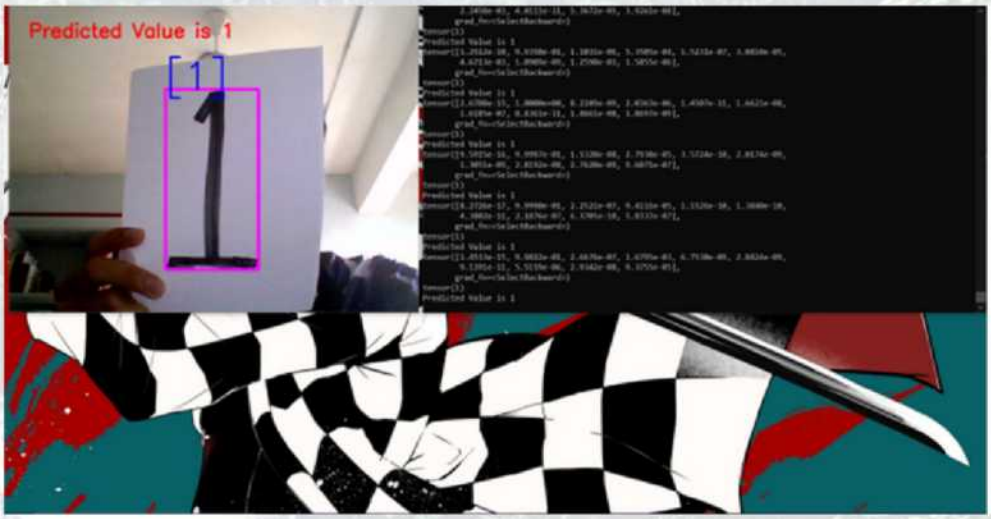

Figure 6. Prediction output number '1'

However, the study wrongly predicts number 0 and 9. These two numbers giving false prediction. The result shown in Figure 7 is an incorrect result for the numbers 0 and 9. This is due to various factors that cause the model to misread the digits, among them is that the number shape, and thickness.

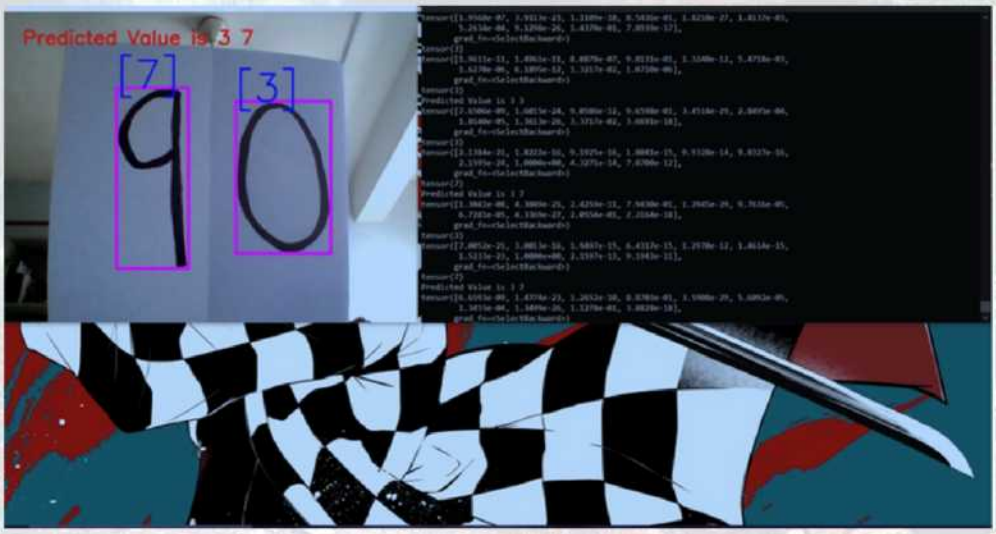

Figure 7. False Prediction Number '0' and '9'

Discussion

According to the results, CNN may reach 98% accuracy in recognizing digits. Some improvement has been applied to CNN model such as modify the model depth, fine-tune pixel scaling and learning rate. Other contributing factors are experiment setup with brighter light to facilitate the model to read the digits correctly, and the larger size of digit. The digit size must be clear and no overlapping. When attempting to address this problem, there are a variety of obstacles to overcome. The size, thickness, orientation, and location of the numbers in relation to the margins are not always consistent. The model has an average accuracy of 98.655 percent. It may predict number 1 until 8 successfully.

Conclusion

Digit recognition systems play a vital part in today's electronic data era. It facilitates the conversion of data into digital form. The users are concerned with the accuracy and speed with which the recognition process is completed. The model in this study was created with the goal of increasing recognition accuracy and decreasing recognition time. The results show CNN is applicable to recognize digits. The baseline model can produce a mean accuracy of 98.65% and above. Thus, the model still has a lot of room for improvement to achieve 100% accuracy.

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OPTIMIZATION OF DIET USING LINEAR PROGRAMMING TO DEVELOP A LOW-COST FOOD PLAN FOR ADULTS IN MALAYSIA

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Abstract

Poor dietary habits have been identified as one of the risks factors of common diseases in Malaysia. One of barriers to healthy eating is low income. This group is facing malnutrition and bad BMI. Therefore, using linear programming, this study is aimed to develop a healthy and balanced menu with minimal cost in accordance with individual palatability. A study involving 385 respondents i.e., Malaysia adults is conducted in four phases, which are data collection, data analysis, balanced diet creation and menu finalization. In addition, three linear programming models are created such as cost minimization model without any alteration, cost alteration model and menu alteration model. While comparing the outputs of these models, it is concluded that cost alteration model is the most suitable for this study. Thus, cost alteration model is used to develop a healthy and balanced menu with minimal cost in accordance with individual palatability.

Introduction

Balanced diet is associated with the concepts of diversity and simplicity, which are connected to the idea of healthy eating. Healthy dietary intakes are attained by consuming foods that has the necessary amounts of macronutrients and micronutrients (Lima et al., 2021; Verly-Jr et al., 2019). According to Drewnowski and others (2011), energy rich meals are often picked by the lower socioeconomic class. One of the contribution factors is the cheaper price of the food as financial resources of the people are limited. A variety of low-cost nutrient-dense meals were accessible, but they were not necessarily tasty or palatable to low-income consumers (Dooren et al., 2015).

Furthermore, the high cost of nutritious foods has been recognised as a major hurdle to healthy diet of the lower income group (de Mestral et al., 2020). In Malaysia, the low-income group is facing malnutrition, bad BMI (body mass index) and health issues (Shahar et al., 2019). Therefore, it is significant to reducing the prevalence of illnesses among Malaysia's low-income population is to encourage them to eat a nutritious, balanced, cheap, and pleasant diet.

The importance of the study is to develop palatable and affordable healthy food plan based on standard dietary guidelines. This ensures the low-income groups may consume according to recommended amount of nutrients on daily basis. The study is using linear programming for cost minimization and quantity control of macronutrients and micronutrients. Thus, this study focuses on the food intake of Malaysian adults.

Background Study

Linear Programming (LP) is a mathematical approach that generates optimum solutions that fulfil several constraints at the same time that can be used to answer problems of matching diets to nutritional and other limitations with little modifications). Most research (Alaini et al., 2019; Tharrey et al., 2017; Dooren et al., 2015) utilized nutritional and financial constraints to analyze dietary challenges and solutions. It is suggested to introduce acceptability restrictions; however, no study has offered the ultimate answer for calculating acceptability. There is currently just one research in Malaysia (Alaini et al., 2019) that uses linear programming to generate a balanced, optimum diet at the lowest possible cost. The study's major goal was to use linear programming to design a balanced, optimum diet to prevent cancer at the lowest possible cost. The study did, however, have a few drawbacks. The individuals in this study may not have been represented because they were not drawn at random from the Malaysian community, but rather from a local university's personnel and students. Therefore, the food menu produced are not diverse (Alaini et al., 2019).

However, there are some studies on development of balanced, low-cost meals using linear programming in developed countries (Dooren et al., 2015; Tharrey et al., 2017). In Dooren et al. (2015) study on a weight basis, the 206 items in their model cover only up to 80% of the original nationally consumed diet. Since some of the energy dense items may have a significant climate effect or price, the fact that the excluded products are typically more energy dense becomes a restriction to their study (Dooren et al., 2015). In addition, there are several studies in developing countries (Nykänen et al., 2018; Verly-Jr et al., 2019). According to Verly-Jr et al. (2019). The study's chosen set of nutritional consumption recommendations was a significant drawback.

The Recommended Dietary Allowance (RDA)s were created for the US community, taking into consideration local demographic and food consumption figures. As a result, it was unsuitable for a study of Brazilians (Verly-Jr et al., 2019). Table 1 shows the summary of tools used in previous studies.

Table 2. Summary of Previous Studies

Data Collection Method	Model Type	Model Tool	Analysis Tool	Nutrition Analysis Tool	Reference
Dutch National Food Consumption Survey 2007–2010	Linear Programming	Optimeal® software	-	Dutch Nutrient Database	(Dooren et al., 2015)
Food records in postharvest season in rural Malawi	Linear Programming	Google Spreadsheet Solver	-	World food dietary assessment system (version 2.0)	(Briend et al., 2016)
Randomized control trial	Linear Programming	Optifood software	-	Colombian Food Composition Tables, USDA National Nutrient Database for Standard Reference	(Tharrey et al., 2017)
Questionnaire	Linear Programming	Microsoft Excel Solver	SPSS	Nutritionist Pro™ software version 4.0.0	(Alaini et al., 2019)
Ghanaian Demographic and Health Survey 2014	Linear Programming	Microsoft Excel Solver	-	West African food composition tables (Food and Agriculture Organization of the United Nations (FAO)	(Nykänen et al., 2018)
National Dietary Survey (NDS), Household Budget Survey (HBS) 2008 - 2009	Linear Programming	SAS software	-	Food composition dataset of Brazilian nutritional survey	(Verly-Jr et al., 2019)

After considering all the options, Recommended Nutrient Intakes (RNI) for Malaysia 2017 is used as dietary guideline, food list is extracted from Malaysian Food Consumption Database (MyFCD), food price list of Federal Agriculture Marketing Authority (FAMA) is used to calculate the food price, Body Mass Index Classification (BMI) by World Health Organization (WHO) is used to analyze BMI of subjects, Microsoft Excel Solver is used to solve linear programming model and data analysis since it is free and familiar and Google Forms to create questionnaire in order to collect data from subjects.

Methodology

There are four phases of research methodology (Fig. 1). Phase 1 is data collection. Phase 2 data analysis. Phase 3 is model creation. Phase 4 is model finalization.

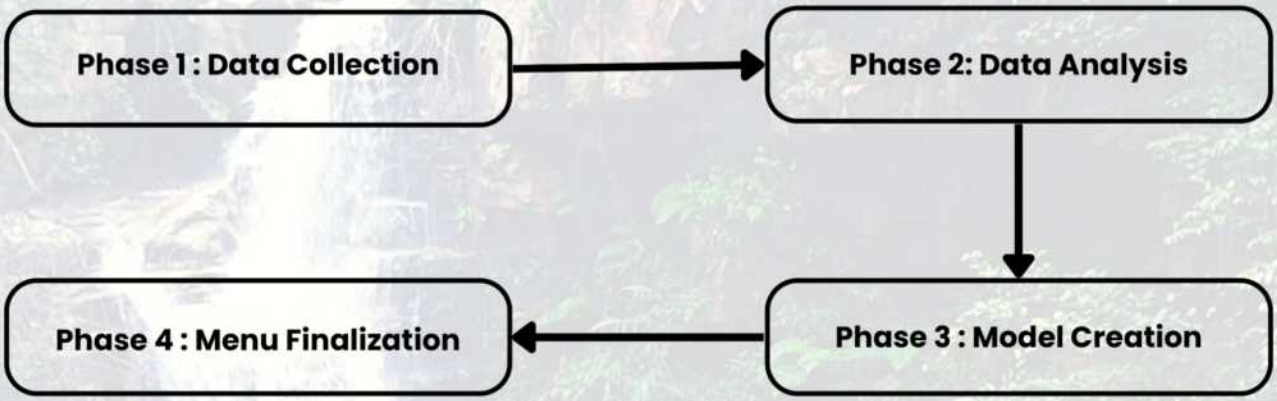

Figure 8. Research Phases

Phase 1 : Data Collection

A total of 385 healthy people aged 19 and above from Malaysia without gender favoritism is chosen at random. To analyze the participants' socio-demographic profile, a set of questions is given to them using Google Forms. Participants' age, gender, as well as their lifestyle is gathered. Using weight and height, BMI is determined and categorized into underweight, normal, overweight, and obese based on WHO BMI categorization. Three-day food records, in which respondents detail their food consumption for three days, is used to record and analyze eating patterns. Food list is then created based on the participants' palatability, and the prices for each food item is calculated from data of FAMA. Food cost is determined by the price per serving size.

Phase 2 Data Analysis

Respondents' eating habits are analyzed to create a diet that focuses on the participants' preferences. Then, using Microsoft Excel, anthropometric and dietary intake data is examined. All the information is analyzed before a linear programming model is built and run to produce balance, low-cost food plan for the subjects are produced. Food list is extracted from MyFCD with nutritional content, which includes calories, macronutrients, and some of micronutrients.

Phase 3 Model Creation

In this study, Microsoft Excel Solver is a tool to develop the three palatability models based on the Linear Programming formulation as below:

$$\text{Minimize: } z = \sum c_j x_j$$

$$\text{Subject to: } b_i \leq \sum a_{ij} x_j \leq b_i \text{ and } x_j \geq 0$$

where *z* is the cost of food item, *i* is the nutrients and *j* is the food item. The portion size of food item *(j)* is represented as *xj. aij* denotes the amount of nutrient *(i)* in one portion of food item *(j)*. cj is the cost of a portion of food item *(j)*. bi denotes the largest (upper bound) or smallest (lower bound) acceptable quantity of nutrient *(i)*.

The optimization algorithm is run to provide acceptable meals at the lowest feasible cost. A total of 3 menus are generated. All the three models use the above formulation, where in cost minimization model, no alteration is done. For cost alteration model, final cost of menu *(z)* is predetermined, while for menu alteration model, food items *(j)* in the list are altered. Table 2 shows nutrients constraints that are chosen based on the dietary guidelines of MDG 2010 and RNI 2017.

Table 3 : Nutrients Constraints

Nutrient	Lower Bound	Upper Bound
Energy, Kcal	1600	2000
Protein, g	42	100
Fat, g	38	68
Carbohydrate, g	212	300
Fibre, g	25	35
Sugar, g	0	50
Calcium, mg	1000	2500
Iron, mg	29	45
Phosphorus, mg	700	4000
Potassium, mg	4700	10000
Sodium, mg	500	2000

Palatability constraints were also included to ensure that the suggested menus were suited to the subjects' common food pattern. Subjects' energy needs are calculated earlier. The ideal energy of the subject is calculated using the Mifflin St-jeor Formula (Frankenfield et al., 2005):

Male: (10 × weight in kg) + (6.25 × height in cm) - (5 × age in years) + 5
Female: (10 × weight in kg) + (6.25 × height in cm) - (5 × age in years) – 161.

For an example, based on the average respondent details, this study is using a female who is 157cm weighs 46kg as a main subject. Based on the Mifflin St-jeor Formula, the main subject yields a total of 1252.25 calories per day. The value obtained from the formula is used as the minimum value while the maximum value is extracted from RNI 2017 according to age group. The maximum values of energy based on gender and age group is stated in Table 3. The maximum energy level is of a person with Physical Activity Level (PAL) 1.8.

Table 4 : Maximum values of energy based on gender and age group

Age	Upper Bound
Male	
18-29	2520
30-59	2470
>= 60	2280
Female	
18-29	2080
30-59	2130
>= 60	1990

Phase 4 Menu Finalization

A daily balanced menu is created based on the prescribed food portion. Palatability restrictions is also incorporated to ensure the recommended meals are appropriate for the participants' common eating pattern. Selecting foods from the list based on the respondents' dietary experience and avoiding repetition or huge quantities of specific meals is also examined to guarantee the menu's palatability.

Results

Anthropometric Measurements

Body Mass Index (BMI) is calculated for each respondent (fig. 2). Majority of the study population (79%) had normal BMIs between 18.5kg/m2and 22.9kg/m2, which is higher than the prevalence of normal body weight of healthy Malaysian adults of 45.6% (National Health Morbidity Survey, 2015).

On the other hand, 14% of the respondents have BMIs between 23kg/m2 and 27.49kg/m2, thus belonging to the overweight classification. Prevalence of overweight for healthy Malaysian adults was 30%, which is higher than the respondents (National Health Morbidity Survey, 2015). A total of 16% of the respondents are underweight, and the remaining 1% were classified as obese.

Palatability Menu

After analyzing dietary of respondents, four categories of palatability are identified. Respondents who prefer vegetarian Indian food, Indian food, Malay food and mixed food according to the models.

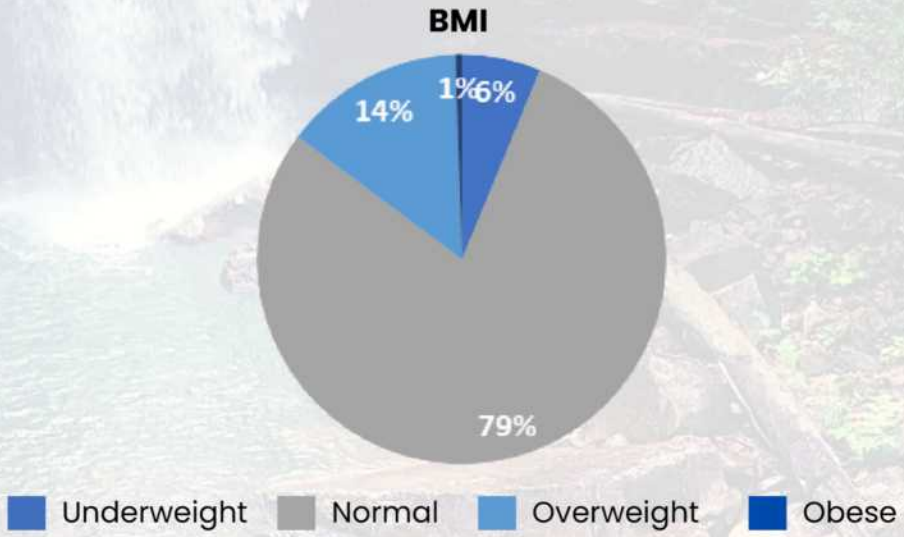

Figure 9 : BMI Classification of Respondent (%)

Cost Minimization Model

As minimization process was done without any preset value for objective function, menus (Table 4) are produced with the nutritional values (Table 5). Table 4 shows the prices of the menus are more than RM20.00 per day.

Table 5 : Menu produced from cost-minimization model)

	Meal	Breakfast	Lunch	Dinner	Price (RM)
Preferences	Indian Vegetarian	161g masala vadai, 50g yellow dhal gravy, 500g honeydew	50g yellow dhal gravy, 100g briyani rice, 18g papadam, 224g honeydew, 69g white dragon fruit	198g nuts putu, 37g yellow dhal gravy, 500g honeydew	20.60
	Indian	165g masala vadai, 100g chicken curry, 500g honeydew	100g Briyani Rice, 100g Curry Chicken, 33g Papadam	136g nuts putu, 89g chicken curry, 388g honeydew	23.40
	Malay	100g apam balik, 74g pandan crepe with coconut filling, 251g glutinous rice with pandan layer	102g bandung wheat noodles, 158g shrimp cooked in chilli, 100g glutinous rice with pandan layer	400g red bean congee, 55g chicken satay	21.50
	Mixed	79g masala vadai, 159g northern red snapper cooked in tamarind, 500g honeydew	180g bandung wheat noodles, 123g shrimp cooked in chilli, 500g honeydew	144g nuts putu, 52g pandan crepe with coconut filling, 408g honeydew	27.20

While, Table 5 shows that potassium requirement is not fulfilled for all menus, iron requirement is not fulfilled for Indian menu and calcium requirement is not fulfilled for vegetarian Indian and Indian menu.

Table 6. Nutritional content of menu produced from cost-minimization model

Nutrient	Indian Vegetarian	Indian	Malay	Mixed
Energy, Kcal	1823.27	2000	2000	2000
Protein, g	63.29	94.53	78.94	100
Fat, g	38	68	68	68
Carbohydrate, g	300	245.12	275.29	239.66
Fibre, g	35	35	25	25
Sugar, g	50	50	8.48	50
Calcium, mg	285.96	393.18	1000	1000
Iron, mg	29	13.42	30.38	30.67
Phosphorus, mg	968.42	1321.27	1531.57	1938.55
Potassium, mg	2723.78	3116.56	2727.24	4467.34
Sodium, mg	2000	1073.46	2000	2000

Menu Alteration Model

Table 6 shows menus for the main subject i.e., 23-year-old female who is 157cm tall and weighs 46kg. There are three menus been proposed. The menu was created based on respondent food preference (Table 6). In order to develop these menus, the food items chosen in Menu 1 was removed from the food list before creating Menu 3. Before creating Menu 3, items chosen in Menu 1 and Menu 2 were removed from the food list. This step was done in order to prevent repetition of food. The cost of menu was constant to show the effects of types of food on the nutritional content of the menu.

Table 7 : Mixed RM 10 menus for a 23-year-old female (157 cm tall and weighs 46 kg)

	Menu 1	Menu 2	Menu 3
Breakfast	100g Rojak, 114g Nuts putu, 56g Samosa.	190g Apam balik, 17g Glutinous rice with pandan layer.	192g Mung bean dessert, 200g Pandan crepe with coconut filling.
Lunch	159g Shrimp cooked in chilli, 100g Nuts putu, 41g White dragon fruit.	183g Bandung Wheat Noodles, 195g African Bream Fried in Chili	120g Threadfin Bream in soy sauce, 45g Fried rice.
Dinner	78g Rojak, 20g Masala vadai, 100g Nuts putu.	186g Apam balik, 17g Chicken satay.	80g Coconut milk rice, 202g Pandan crepe with coconut filling.

The requirement of potassium is not fulfilled in any menu, requirement of calcium is not fulfilled for Menu 2 and 3 while all the other nutrients are between maximum and minimum values. Table 7 shows that values of all nutrients except fat, iron, sugar and sodium deteriorates from Menu 1 to 3 as food items are being removed from the food list. This is because the most suitable food items are chosen in menu 1. When those items are removed from the food list, the model forced to choose the best fit food from the remaining items in the list. Therefore, the nutritional values are heading towards minimum value (lower bound).

Table 8 : Nutritional content of Mixed RM 10 menus for a 23-year-old female (157 cm tall and weighs 46 kg)

Nutrient	Menu 1	Menu 2	Menu 3
Energy, Kcal	2080	1784.74	1704.72
Protein, g	97.87	83.00	61.66
Fat, g	68	68	68
Carbohydrate, g	268.66	212	212
Fibre, g	25	10.61	25
Sugar, g	3.46	2.65	8.36
Calcium, mg	1000	229.24	133.45
Iron, mg	29	29	29
Phosphorus, mg	1772.99	1515.07	776.44
Potassium, mg	3138.25	2423.98	2011.46
Sodium, mg	1195.31	2000	866.70

Cost Alteration Model

Table 8 shows menus for a 23-year-old female who is 157 cm tall and weighs 46 kg. All three menus cost from RM 8 to RM 10. The menu was created based on the mixed food preference of the respondent. The price of the menu was reduced for each menu. Menu 1 costs RM10.00, Menu 2 costs RM9.00, and Menu 3 costs RM8.00. The food items in the food list were remained constant to show the effect of cost on the nutritional content of the menu.

Table 9: Mixed menus for a 23-year-old female (157 cm tall and weighs 46 kg).

	Menu 1	Menu 2	Menu 3
Breakfast	100g Rojak, 114g Nuts putu, 56g Samosa	182g Rojak, 100g, Nuts putu	83g Rojak, 100g, Nuts putu
Lunch	159g Shrimp cooked in chilli, 100g Nuts putu, 41g White dragon fruit	100g Shrimp cooked in chilli, 58g Nuts putu, 65g Samosa	100g Shrimp cooked in chilli, 33g Nuts putu, 66g Samosa, 49g Papadam
Dinner	78g Rojak, 20g Masala vadai, 100g Nuts putu	63g Shrimp cooked in chilli, 100g Nuts putu, 45g White dragon fruit	66g Shrimp cooked in chilli, 100g Nuts putu, 42g White dragon fruit

The requirement of potassium is not fulfilled in any menu while all the other nutrients are between maximum and minimum values. Table 9 shows that values of energy, protein, carbohydrate, and potassium deteriorates from Menu 1 to 3 as the cost of the menu decreases. The findings show the selected portion size of food decreases exponentially as the value of objective function is reduced. Thus, the nutritional values are heading towards minimum value (lower bound).

Table 10: Nutritional values of Mixed menus for a 23-year-old female (157 cm tall and weighs 46) kg).

Nutrient	RM 10	RM 9	RM 8
Energy, Kcal	2080	1863.26	1801.56
Protein, g	97.87	88.01	84.92
Fat, g	68	68	68
Carbohydrate, g	268.66	224.29	212
Fibre, g	25	25	25
Sugar, g	3.46	3.83	3.55
Calcium, mg	1000	1000	1000
Iron, mg	29	29	29
Phosphorus, mg	1772.99	1678.87	1808.88
Potassium, mg	3138.25	2850.25	2262.46
Sodium, mg	1195.31	1167.34	1584.58

Discussion

Mifflin St-jeor Formula calculates Body Mass Index (BMI) of the respondents to indicate the minimum value (lower bound) for energy requirement constraint in the model. The values obtained through this formula are more accurate compared to the energy requirement value provided in RNI 2017. In this study, the formula includes the height, weight, age and gender of an individual to calculate energy requirement. However, RNI 2017 excludes height and weight of a person. Besides, Mifflin St-jeor Formula increases the accuracy of the optimization model which leads to a more suitable menu for each subject. The respondents of this study are from various states of Malaysia.This factor gives more variety to the menus created and prevents any kind of biases in the results (Alaini et al., 2019).

Based on comparison study of the three 3 models, the cost alteration model appears to be the most accurate to fulfills more nutritional requirements, and the cost of menu is guaranteed to remain under RM10.00 since it is determined manually. Therefore, the cost alteration model is used to develop a balanced diet with low cost according to the palatability of respondents. The price is RM10.00 for each meal to ensure the nutritional requirements are not nearer to lower bound as nutrients in the food items sold in restaurants varies.

Getting a list of food items of various tradition with complete nutritional content from a verified source is very challenging. This study is using the food list was extracted from MyFCD which is a dataset of Malaysian food items with their nutritional content. There are only 120 food items that can be used for this study due to other data is raw food items. The limited number of food items with very limited nutritional content causes the model to produce non-feasible solutions. This affects the efficiency and accuracy of the model. The prices of the food items in the list are quite expensive, i.e., restaurant prices. Store bought food were chosen rather than home cooked food because working adults do not have the time for food preparation. That is the main reason they opt fast food, frozen food and junk foods. Foods that are cooked in restaurants freshly is deemed to be better than fast foods.

Conclusion

Linear programming is one of the effective tools in producing a balanced diet and can easily interpret dietary recommendations into a nutritional model according to local market prices. It formulates the current guidelines for balanced diet by creating a balanced and optimal diet at minimum cost with more specific details and accuracy. In addition, this study focuses on the nutrients needed at minimal cost, the menus to be produced will be ideal for people who want to maintain healthy eating habits but experience financial difficulties.

In the future, this research can be enhanced and expanded. Some changes have to be made in order to improve the quality of this study and to aid other interested researchers in undertaking more research on linear programming, balanced diet and nutrition for other age groups.

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TOURISTS' RESILIENCY: TRAVELLING DESPITE CRISIS

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Abstract

Over the years, tourism has been one of the key product for many nations around the world. It became as one of the main contributor to the economic for many nations including Malaysia. As nature of the business required people to travel to experience and consume the product, crises is seen as challenges in tourism industry which disrupt the organizational functionality. It carries risks and uncertainty to travel plans and lead to potential cancellations subsequently reducing revenue. There were many crises that occurred prior to recent Covid 19 pandemic such as natural disaster and terrorism and some crises occurred within tourists such as family emergency. Health concern, safety and security concern are some of the risk pertaining to crisis. As crisis subdued, tourism industry is hoped to gain its operation back to normal. However, the market is often uncertain as the readiness of the tourists to fulfil the demand is still in question. Hence, it is important to identify the tourists segment to be resilient towards crises who will go with the planned travel. The aim of this study is to explore the concept of resiliency among tourist that facilitate a steady demand and supply in the market and harness on the characteristics of such tourists' segment to create effective promotions to attract them to the destination.

Introduction

Tourism industry has been one of the vital contributor to the economic growth in many countries including Malaysia. It became the third-largest export category after fuels and chemicals. It accounted up to 7% of global trade prior to Covid 19 pandemic in 2019 (UNWTO, 2020). Although it had a massive contribution to the economy, this industry is highly reactive towards crises (Hajibaba et al., 2018). Ultimately, crises resulted to change in travel behaviour for both short and long term (Karl and Schmude, 2017). Crises are generally defined as challenges that happened unexpectedly and affect the

economic which attest the organizations and nation ability to cope with it (Elsubbaugh et al., 2004). On the other hand, resiliency is defined as the survival ability of organizational entity to possibly thrive amidst crisis (Seville et al., 2008). Resiliency is needed to recover from the aftermath of any unexpected events in order to gain functionality. Therefore, crises and resiliency is often highlighted in tourism study regards to viability of the industry to withstand changes.

Throughout the modern era, numerous crises had strike tourism industry and became a topic that often discussed in researches. Prior studies had categorized crises in different groups that can either be internal and external to tourists. The external crisis is unexpected events that has impacts for a great number of people or a region for example 9/11 in 2001 and the Global Finance Crisis. As for internal crisis, it usually affects the particular tourist and people who travel with them such as family emergencies or personal health problems. Both internal and external crisis had negatively impact the tourism industry since it changed the behaviour travel both in short as well as long term. It potentially leads to cancellation of bookings. Crisis is often intertwined with risks which influence the decision-making process when choosing a destination. It is due to concern for basic safety needs such as health concerns and safety. The circumstances are unfavourable to the tourism industry as it needs demand and supply for the market to function. Therefore, risen the question of what type of tourists are most needed during or post-crisis state in order to create a steadfast demand and supply chain.

It was proposed that tourists with higher levels of risk propensity are inherently more resistant to crises than those who are not (Hajibaba et al., 2018). The study later suggested that crisis-resistant tourists be defined and theoretically conceptualized in order to harness this market segment towards reducing crisis-vulnerability of tourism businesses since this segment of tourists will retain their plan to travel thus avoiding cancellations. Numerous studies on consumer behaviour with regard to crisis and risks in tourism give an insight that certain risks are more salient for some tourists. Therefore, a segment of tourists emerged where they differ in risk perceptions. The importance of knowing the targeted segment market is to convey effective marketing and to communicate with them towards steady demand during or post-crisis (Hajibaba et al., 2018). This paper is a preliminary study before a segmentation of tourists is determined from collected data.

Hence, the aim of this paper is to explore the concept of tourists' resiliency that can be harnessed to explicate trends for demand in tourism activities amid or post crises that occurred internally or externally.

Crisis and Risk in Tourism

Risk and crisis are often found to be interchangeable when describing unprecedented events in tourism. Both of them carry probable impact on tourists as well as the destination. As a crisis take place in the destination or within the tourist, it carries an inevitable risk. Thus, the risk is defined as the valuation of the possibility that certain events occurred have a negative impact (Weber & Bottom, 1989). Within the risk, uncertainty rise when tourists are exposed to an overflow of information that they are unable to process and understand (Crompton, 1992). Uncertainty plays a role in tourists' judgement towards an event that occurred in the destination whether in a specific time frame of an event or the ability for them to execute their planned travel due to some degree of personal constraints such as personal financial situation. The way tourists evaluate the impact of the risks differs from one to another. Hence, this creates a way of reflecting the risks which bring to risk perception. Risk perception is denoted as the perception of the situation in the context of risk such as the individual's self-assessment of the perspective and likelihood of any negative effect of an event which is expected to influence the decision-making process when choosing a destination (Karl, 2016). In the example of September 11, the attacks had proven that tourists' avoidance to international travel when they perceived the safety risk as significantly intolerable. They may seek to substitute their travel plan instead of cancelling it. The changes is depending on their valuation of risks on the travel plans. Numerous studies had connected risk perception to destination choice that focused on the type of risks such as natural disasters, health risks, criminality, political instability or terrorism had shown several factors such as sociodemographic variables influenced risk perception of the destination. Evidently, Hajibaba et al. (2015) found risk perception differs to the age group of the respondents lead different destination choices. Other than that, research by Park and Resisinger (2010) found education level contributed to the individual's risk perception.

Crises vary in how the event happened. Parson (1996) characterized crises according to their occurrence. The immediate crises happen almost instantly with little to no warning to the organization or government. Examples of immediate crises are natural disasters such as the tsunami that hit the coastal area in South and South East Asia countries in 2004 and the tragedy of MH170 in 2014. Emerging crises occur slowly with the potential to contain and stop the event by the government or the responsible party. A notable example of emerging crises is pandemics such as SARS which was identified in 2003 in China and spread to several countries. While the recent outbreak that has a larger impact than SARS is Covid 19 which forced the borders to close and halted travel entirely. Sustained crises are events that occurred for a longer period of time which causes a greater or long-term impact on a nation and its main industry such as agriculture, manufacturing and tourism. Such an example can be seen in inflicted prolonged war countries such as Syria and Somalia.

Although tourism destinations had overcome crises each time crisis occurred, it hinders tourists from travelling to the destination. The 2004 tsunami in Thailand that caused more than 5 000 people lost their lives many of them are tourists, negatively impacted the famous beaches of Thailand. The impact of tsunami is not only regarded as a natural hazard to the infrastructure but a risk that threatens the socioeconomics of the affected areas and the locals. Immigration Bureau of Phuket Province produced a data that stated the overall international tourist arrivals at Phuket International Airport from January to May 2005 decreased by 68 percent from the same period of months in previous year. Consequently, causing about 2.5 million US$, or 20 percent lost from the expected revenue for the year 2005 (Ichinosawa, 2006).

The steep decline in tourist visits not only happened for international tourists but for inbound tourism as well. In one of the largest and prominent tourist's area in Phuket, Patong beach had suffered a slow recovery of livelihoods since the demand for tourism dropped. In most recent pandemic, Covid-19 had left a devastating impact on tourism industry. One of the main reason is the intervention of governments that resulted to the lockdown and closure of borders. This caused a sudden disruption to mobility worldwide and affect the major player in the tourism supply chain such as transportation, hotels and resorts. It is reported that Europe tourism had suffered an estimated loss of €400bn due to the pandemic (Nicolàs, 2020). Ioannides and Gyimóthy (2020) stated that thousands of local businesses of all sizes that earned either directly or indirectly on the visitor economy have suspended their operations.

There are indications that many of them will likely never reopen due to the loss of revenue. The shutdown of numerous communities and the implementation of major restrictions on border crossings has virtually eliminated the tourism economy in communities throughout the world (Goodwin, 2020). Meanwhile, 170,084 hotel room bookings in Malaysia had been cancelled between 11 January 2020 to 16 March 2020. The cancellations which were directly a result of the outbreak had caused a loss of revenue up to RM68,190 364 (Foo et al., 2020).

Hall (2015) anticipated the possibility of a global pandemic playing out as the "perfect storm", that interlinked social, cultural, psychological and economic effects of a crisis that lead us along unforeseen trajectories. Furthermore, there is already growing speculation especially in the mass media that the pandemic might trigger an enduring shift in market behaviour, which could radically transform global travel patterns (Irwin, 2020). Since the outbreak of Covid-19, the imposed mobility restrictions have been unprecedented on a local, regional and global scale. Due to cancellations or postponed events, places such as museums, hotels and beaches that had suffered over visitation became quiet ultimately. Effects on the economy of these places had been devastating since they depend heavily on tourism arrivals (Kimmelman, 2020). We recognize that in the past crisis such as outbreaks of epidemics, the tourism industry had usually bounced back which demonstrated the sector's remarkable resilience to mitigate sudden breakdowns in demand or supply (Novelli et al., 2018; Papatheodorou et al., 2010). Polyzos et al. (2020) suggest that recovery of arrivals to pre-crisis levels can take from 6 to 12 months and this can have significant adverse effects not only on the tourism industry but also on other sectors that interact with it.

Resiliency to Travel amid or Post Crisis

As the crisis subsided, the tourism industry is in hoped for the market to bounce back to its pace pre-crisis. However, the crisis may have a long-lasting impact on the impacted destination. The confidence level of tourists is diminished when the destination is affected by a crisis causing avoidance to travel. In this situation, the most needed tourists are the one who is resilient to crisis since they are more likely to go with planned travel and endure the risk (Hajibaba et al., 2015).

The term resilient is coined from studies on organizations. Resilient is defined as the organization's ability to survive and thrive in a time of crisis (Seville et al., 2008).

Familiarity is one of the important aspects when it comes to risk and uncertainty since the destination characteristics and tourists interacted during the process of choosing a destination (Karl 2016). For instance, familiarity-seeking tourists are most likely a well-known destination. Therefore, resilient tourists can be analogously described in Plog's (1974) tourists' typology in the development of a destination where novelty seekers dominate the beginning of a destination's lifecycle followed by familiarity seekers at the end. The same goes with resilient tourists who endure risks and be the first to react when the market is offered.

This opens an opportunity for tourists who are less likely to absorb risks to observe and valuate the outcome of resilient tourists' experiences. They can watch and learn should any uncertainty rise. For example, from the data collected by the Ministry of Tourism Malaysia from a survey on domestic travel in Malaysia, 32.1% of respondents are ready to travel domestically a month after Movement Control Order is lifted (Tourism Malaysia, 2020). Movement Control Order (MCO) is referred to as a partial lockdown that prohibits mass movements and gatherings at all places nationwide including religious services and requires closure of all business premises except manufacturers, suppliers, retailers, and food outlets (Prime Minister's Office of Malaysia, 2020). Although the data indicate their readiness to travel, it reflects their responses for a specific event which is Covid 19 and in a specific time frame. Different approaches had been taken by researchers to forecast demands in tourism during crises for management to strategize their marketing and promotions. Pappas (2021) found two configurations that lead to holiday intention by using fuzzy set qualitative analysis. The configurations are holiday risks and the impact of Covid-19 on their travel and holiday plans. Additionally, Zenker et al. (2021) developed a construct known as the Pandemic (Covid-19) Anxiety Travel Scale or PATS to measure the intra-personal anxiety of travellers and non-travellers. The study found 5 items out of 8 from PATS to be reliable to measure personal anxiety during planning or travel.

This study however, intended to propose the resiliency of tourists in Malaysia in a non-specific event to build a profile that can be as a market reference in any event of crisis.According to Hajibaba et al. (2015), crisis resistant tourists is conceptualized as a stable behaviour across all forms of crises which they are exposed to. It is seen as one of the proactive approach to hinder market disruption. This stability of behaviour is refers to not cancelling the trips or booking trips with acknowledging the risks and knowing the adverse factors of continuing with pre-planned travels.

Guiding Theoretical Framework and Proposed Conceptual Framework

The theoretical framework that is used as guidance to develop the proposed framework for this study is the prominent Theory of Planned Behaviour. The perception of risk can be determined by perceived behavioural control. Resistance to change is recognized as a personality trait (Seville et al., 2008). Personality trait is defined as the characteristic of an individual that wields prevalent influence on a broad range of trait-relevant responses. It is assumed to be behavioural manifestations of the underlying trait that leads to responses and behaviour. Expression in behaviour is expected to be found in the characteristic of personality traits (Ajzen, 2005). High resistance individuals would engage with trip plans despite knowing the risks occurred due to their cognitive and emotional cost of making changes considered as inconvenient although their risk propensity are considerably low (Hajibaba et al., 2015). Hence, the conceptual framework for this study is shown in Figure 1 below.

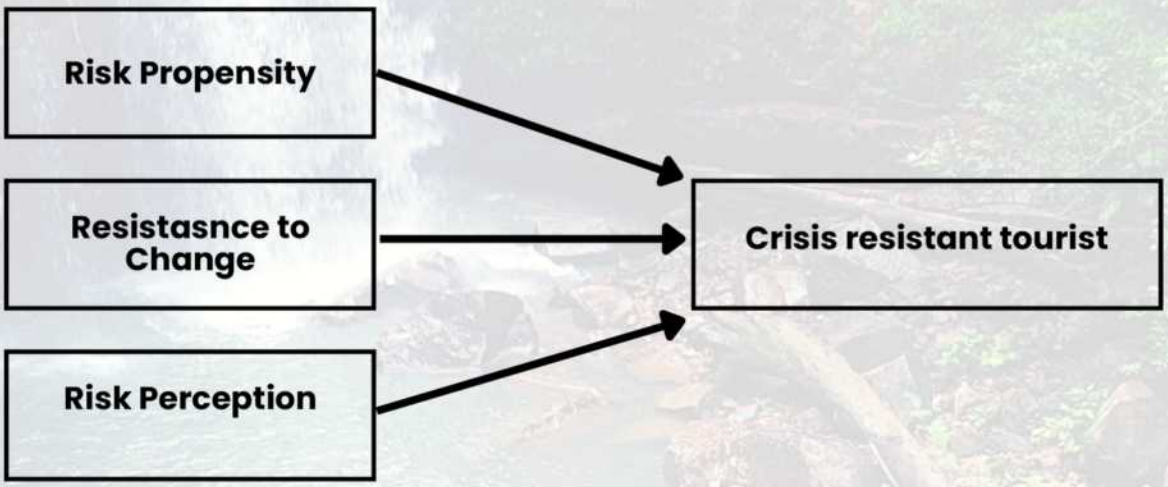

Figure 1. Conceptual Framework of Crisis Resistant Tourist

Materials and Methodology

The recommended methodology for this study will be a survey conducted in fieldwork using an open and close-ended questionnaire. Conceding with the current Covid 19 situation, online surveys were most likely to be used in collecting data because online surveys minimized physical contact between surveyor and respondents. Additionally, it captures representative samples similar to other survey techniques but also allows the collection of substantial sample sizes and relatively low cost. (Dolnicar, 2009).

Managerial Implication of Knowledge

The importance of resilience had been discussed in the growing bodies of crisis and disaster management in tourism. While numerous studies focused on the reactive response towards recovery, only a handful propose proactive strategic planning. One of the effective management steps is to develop resiliency both for destinations and tourists. Resiliency is seen as a vital ability for the destination to withstand crises internally and externally (Hajibaba et al., 2018). It is critical to building resiliency in tourism destinations but with understanding tourists who would endure the risks of travelling not only during external crises but also personal ones would avoid cancellations of planned trips. Concurrently, Hajibaba et al. (2018) found that there are two dimensions of behavioural resistance which are "going despite" and "not cancelling because" which are linked with high risk propensity and high resistance to change that can be the possible explanation for crisis resistant travel behaviour. Further detailed investigations found that adventure travellers are the ones more crisis resistant and relatively young. The activities involved are related to sports and health such as mountain biking and hiking. Knowing the characteristics of this segment of tourists can be an advantage to tourism providers to understand what type of tourists will be the first to engage with the activity during or after the event of crisis. Utilizing the information to create certain attractions for them to increase resistance can generally reduce cancellations. As suggested by Sánchez-Cañizares et al. (2020), the crucial role of tourism advertising is to influence travellers' attitudes to coincide with their feeling of pleasant and safe travel experience and as to reduce the perception of the risk as a result from the fear of infection with Covid 19.

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PARENTS SAFETY AWARENESS AND KNOWLEDGE OF CHILDREN IN WATER RECREATION ACTIVITIES AT DARUL EHSAN AQUATIC CENTER, SHAH ALAM

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Abstract

Recreational water activities are often associated with various risks and accidents that occur in children. This study was conducted to determine parents' awareness of water recreational activities and parents' knowledge of the safety of their children's participation in water recreational activities at Darul Ehsan Aquatic Center. The study shows that parents' knowledge about their children's safety in water is positive and they allow their children to participate in water recreational activities, but they have little knowledge about the actions to be taken in case of emergency. Most parents are aware of the danger of drowning to their children. Therefore, the trend of water hazards is quite worrisome. The study can help to raise parents' awareness of water safety, and the results of the study can also help to reduce the number of cases or accidents related to the trend of water accidents.

Introduction

People are increasingly pursuing activities related to water because people are becoming more and more enthusiastic about the water world and need people's inclinations to fulfill their satisfaction, refresh themselves and enjoy their time. Water recreation activities are activities associated with the aquatic environment, such as lakes, rivers, beaches, pools, and miles. Water recreation activities are officially defined as activities where you are frequently underwater with your whole body or face, wetted by spray, and likely to swallow water. To ensure safety, you must prepare yourself before visiting water areas. According to Pharr et al. (2018), families with children under the age of 10 are the most common family group to gather for swimming.

Unfortunately, incidents can occur if people are not aware of the environment, especially when children are playing near the water. Parents may have the intention of letting their children play alone without parental supervision. Children who are too excited sometimes forget about the risk and this leads to an incident. Awareness of the environment and accidents is neglected today, and people begin to ignore it, which promotes the emergence of risks. In addition, lack of knowledge and understanding of water conditions, ignorance, disregard or misjudgment of dangerous water conditions, lack of supervision, and lack of awareness of education in water safety, personal survival, and life-saving techniques can lead to the incident. The informal parent education program with swimming lessons for young children can raise the awareness of parents (Moran & Stanley, 2006). According to Coffman (1991), drowning is the most common cause of accidental death in infants and children, but parental education can prevent the risk of drowning.

In Malaysia, there are many class lessons that parents can use as an alternative to increase safety awareness during recreational water activities. Swimming lessons are a very effective way to raise awareness in their children. Swimming lessons are designed to help adults and children survive in the water and refresh their skills for competitions. In addition, swimming lessons are conducted in Malaysia with swimming activities for adults, children and special children. The swimming instructor teaches them how to swim until they can survive and live in deep water (Romero, 2019). Knowledge of water safety, especially for children, and promotion of water safety awareness are necessary to prevent incidents. Authorities must ensure that the construction of water recreational facilities is properly designed and that they are equipped with modern water safety features and equipment. They also need to coordinate data collection and information on drowning accidents and near-drowning incidents in Malaysia (Lee, 2014). According to Lee (2018), despite the lack of facilities in rural areas, water safety awareness programs need to be intensified on all fronts, including in schools (Lee, 2018).

Water safety awareness indicates the extent to which children and parents have been made aware of recreational water activities. Inadequate awareness of water safety can lead to a fatal incident. Most cases of drowning during aquatic activities are due to parental neglect. According to Cody et al. (2004), one of the primary risks for drowning in virtually all incidents involving children is lack of adult supervision. Parents should not let their children play with water unsupervised, even if the children enjoy playing with water. If children are too excited in the activities, the incident may happen without parental supervision, even if there is a life saver, but parents are the closest to the children. So, parents are the important person to ensure the safety of their children. According to Noor et al. (2020), 21.6% of respondents, drowning is not one of the unintentional injuries that lead to death. However, most parents reported that their children had almost drowned at some point (16.1%) and only 12.2% of children had taken a swimming lesson (Noor et al., 2020). Parental awareness is critical and lack of knowledge about water safety is also the cause of child drowning.

The Darul Ehsan Aquatic Center in Selangor is one of the most popular swimming pools for public and competitions. There are few cases of children drowning there, but there have been no deaths. The efficiency and quick action of the lifesavers in resuscitation have saved the lives of children. Most drowning victims are children who do not know how to swim and come just for fun. In most cases, a depth of 1.2 meters in an outdoor pool is enough to put children under the age of 10 in danger. It is important to study the safety awareness of parents in order to minimize the number of incidents. Therefore, this study was conducted to determine parents' awareness of water recreation activities, parents' safety, and children's participation in water recreation activities at Darul Ehsan Aquatic Center. This study will help management determine parent awareness of water safety during recreational activities. The results of this survey will be useful for the future management of Darul Ehsan Aquatic Center in Selangor.

Methodology

Study Site

The Darul Ehsan Aquatic Center was built and handed over to the Selangor Sports Council in August 1998. To date, this aquatic center is managed by Darul Ehsan Management Facilities Sdn. Bhd. The area of this park is 3.69 acres and is open to the public. This recreational area is open from Tuesday to Sunday during the hours of 9 am to 8 pm, however, a fee is charged to enter this swimming pool. The area consists of recreational facilities such as outdoor, indoor and children's swimming pools, playgrounds, restrooms, bathrooms, gift stores, cafes and others. The facility is located about 4.1 km, or 10 minutes, from the center of Shah Alam. In addition, the area is open for swimming competitions, swimming lessons and water recreational activities. This place was chosen because the area is well known and located between Klang and Shah Alam. This area is suitable and appropriate because most parents and children spend their time here on weekends to relax and take swimming lessons. In addition, it is also known as one of the areas where water recreation activities take place, which is suitable for the objective of this study.

Figure 1.
Outdoor swimming pool at Darul Ehsan Aquatic Centre
(Source: Google Image, 2021)

Data Collection

According to Bhat (2004), data collection is the most important phase of the study, regardless of the research area. In this study, a purposive sample was used and the priority of data collection is parents whose children have ever been in contact with water and parents' awareness of water safety. This method is used to estimate the parameters of the population in a specific group of people. The study focuses on the group of parents who bring their children to Darul Ehsan Aquatic Center for swimming and recreation.

The questionnaire was structured according to a quantitative approach and was developed to determine parents' safety awareness regarding children during recreational water activities during data collection. The questionnaire was used as measurement tool and a 370 set of the questionnaire were distributed to the participants. The sample size for this study was determined using the Ryan formula (Ryan 2013). Multiple choice questions and questions on a four-point Likert Scale ranging from one "strongly disagree" to four "strongly agree" were used for responses. It is intended to represent parents' awareness of water safety and children's participation in water recreational activities.

The questionnaire was distributed through social media platforms using Google forms. It is also written in two languages, Bahasa and English. This method makes it easier for respondents to understand the questionnaire and saves time in distributing the questionnaire. The data obtained were converted and inserted into Statistical Package for the Social Sciences (SPSS) version 26, a statistical analysis software. Two methods of analysis were used: descriptive analysis and one-way analysis of variance (ANOVA).

Results and Discussion

Socio-demographic Characteristics

Table 1 shows the result of the socio-demographic profile of the respondents. There are some factors that make up the socio-demographic proportion of the respondents. These are gender, age, education, occupation, income and age of children. As for the gender of the respondents' parents, of the 171 respondents who filled out the questionnaire, 29.8% are male and 70.2% are female.

For the age group, the age range was divided into 5 classes. Based on the distributed survey, the age group between 25 - 34 years has the most respondents with 35.1%, followed by the age group 35 - 44 years with 29.8%. The age group 55 years and older has the lowest frequency with 3.5% of respondents. The majority of respondents with a percentage of 45.6% have a university degree as their highest education. Followed by diploma education with 25.7% of respondents and the lowest frequency of 2.3% of respondents who have a doctorate degree. Primary education and informal education had the same frequency with 6% of respondents each.

In addition, 43.9% of respondents are employed in the private sector followed by 21.1% of respondents who work in the public sector. Respondents who are housewives are also quite numerous with 18.1%. A total of 11.1% of respondents are self-employed and the least are those unemployed or retired (5.8% of respondents). Table 1 also shows the distribution of respondents' monthly income. The highest income of the respondents is above RM4100 with 32.2% of the respondents. The second highest income is between RM2100 and RM3000 with 25.7% of the respondents, followed by 15.8% of the respondents who have no monthly income. 14.6% of the respondents have income below RM2000. Finally, the lowest percentage is 11.7% with an income of RM3100-RM4000.

Most respondents have one child with 26.9% . The percentage of respondents who have two or three children is the same at 22.8%. While 16.4% of respondents have four children and the lowest percentage is respondents who have more than four children with 11.1%. The distribution of respondents' children by age group is also an interesting finding of the study. Most of the children are between 4 and 6 years old (45%), which could be due to the young age group of the parents. This is followed by the 7 - 9 age group with 43.9% of children and the 10 - 12 age group with 39.8% of children. The lowest frequency in the age group of children is 13 - 14 years old with 14.6% of children.

Table 1. Sociodemographic Profile

Sociodemographic profile	Frequency	Percentages (%)
Gender		
Male	51	29.8
Female	120	70.2
Age		
18 – 24	24	14.0
25 – 34	60	35.1
35 – 44	51	29.8
45 – 54	30	17.5
55 Years and above	6	3.5
Education Level		
Informal education	1	6
Primary school	1	6
Secondary school	18	10.5
Certificate	13	7.6
Diploma	44	25.7
Degree	78	45.6
Master	12	7.0
PhD	4	2.3
Profession		
Government sector	36	21.1
Private sector	75	43.9
Self-employed	19	11.1
Housewife	31	18.1
Unemployed or retired	10	5.8

Income		
None	27	15.8
Below RM2000	25	14.6
RM2100 – RM3000	44	25.7
RM3100 – RM4000	20	11.7
Above RM4100	55	32.2
Number of Children		
One	46	26.9
Two	39	22.8
Three	39	22.8
Four	28	16.4
More than four	19	11.1
Children Age		
1 – 3 years old	54	31.6
4 – 6 years old	77	45.0
7 – 9 years old	75	43.9
10 – 12 years old	68	39.8
13 – 14 years old	25	14.6

Parents' Awareness on Water Safety

Table 2 shows that 83.6% of parents have a high awareness of water safety, they use safety equipment for their children (72.5%), they are aware of the risk in recreational activities (95.9%), but most parents do not participate in a water safety lessons (72.5%). This is related to the fact that the respondents have experienced an accident during water activities. These were 92 respondents who had slipped and fallen (53.8%), with most accidents involving their children and followed by cramps with 22.8%. Drowning accidents ranked third with 19.9% of respondents and 0.5% of accidents occurred due to electrocution in the pool area. None of the children ever had an accident with a traumatic brain injury.

Parents should pay more attention to their children's activities because accidents have happened to their children in the pool in the past. We see that most children slip and fall in the pool, which is very disturbing for parents because these injuries can be fatal. Children who get tangled in water can drown, and parents indicated that their children have already drowned. This could be a reason why parents supervise their children extensively because they fear that accidents could happen again.

Table 2.Parents' Awareness of Water Safety Activities

Parent's Awareness of Water Safety Activities	Frequency	Percentages (%)
Do you know the awareness of water safety?		
Yes	143	83.6
No	28	16.4
Involved in water safety awareness program		
Yes	57	33.3
No	114	66.7
Using water safety equipment for my children		
Yes	124	72.5
No	47	27.5
Aware of the existence of risk while doing recreational activities		
Yes	164	95.9
No	7	4.1
Type of Accident Occur during Water Recreation Activities		
Drowning	34	19.9
Cramp	39	22.8
Electrocution	1	0.5
Traumatic brain injury	0	0.0
Slip and fall	92	53.8
Getting caught in a pool drain	5	2.9

Parents' Knowledge on Water Safety Activities

This section is about parents' level of knowledge regarding water safety activities in the swimming pool. This scaled questionnaire intends to provide answers from the analysis of parents' knowledge about their children's safety. The level of knowledge is measured by the mean and percentages of responses to perceptions ranging from "Strongly Disagree" (SD), "Disagree" (D), "Agree" (A) to "Strongly Agree" (SA).

Table 3 shows that the highest mean value, with a mean of approximately M = 3.65, came from the variable that the respondent applied knowledge about water safety and safety precautions during water activities. The overall percentage of strong agreement is the highest at 67.3%. The lowest mean is parents never lose sight of their children in water recreational activities with a mean of M = 1.88, and the highest percentage with 46.2% strongly disagree that parents never lose sight of their children in the pool. Morrongiello et al. (2013) found that parents know that taking safety precautions can reduce the risk of child drowning. The lowest score is M = 1.60, the highest percentage of 71.3% strongly disagree and 65.5% strongly disagree that parents do not underestimate their children's risk of drowning and that parents never leave their children alone without adult supervision during water activities. Parents were also clear that they are not confident in performing cardiopulmonary resuscitation (CPR), with the highest percentage of 31.6% disagreeing with the statement. Parents also indicated that they supervise their children within 10 m of them. The highest percentage of 43.3% fully agreed (M = 3.06).

This study revealed positive responses to parents' knowledge of their children's water safety. The majority of parents, with an overall score of M = 2.546, indicated that they are aware of their children's involvement in recreational water activities. In addition, parents indicated that they exercise a high level of supervision when their children drown. This indicates that parents are most likely concerned about their children's activities and take precautions before activities.

Table 3. Mean and percentage of parents' knowledge on water safety activities.

Item	Percentage (%)				
	SD	D	A	SA	Mean
Apply water safety knowledge and safety precautions when involved with water activities	6.00	6.00	31.6	67.3	3.65
Underestimate children's drowning risk	71.3	11.7	2.3	14.6	1.60
Lack of knowledge on water safety	18.7	22.8	42.1	16.4	2.56
I know the level of supervision should be exercised in children drowning risk.	3.5	24.0	32.7	39.8	3.09
Supervision interrupted temporarily	12.3	16.4	39.2	32.2	2.91
Leave children without adult supervision	65.5	16.4	10.5	7.6	1.60
Losing track of children	46.2	26.9	19.9	7.0	1.88
Provide close arms reach not more than 10 feet	13.5	10.5	32.7	43.3	3.06
Know to implement Cardiopulmonary Resuscitation (CPR)	17.5	31.6	28.1	22.8	2.56
	Overall Mean Score				**2.5465**

Conclusion

This study showed that parents have awareness of water recreation safety and that the majority of parents have a high level of education, which may influence safety knowledge. Since their children cannot swim as well, parents pay more attention to their children's activities. Encouraging parents to learn CPR could have a great benefit to the family and community. Most parents are aware of the danger of drowning to their children. Moreover, parents never underestimate child drowning and always take precautions and fully supervise their children. Overall, it is becoming increasingly important to promote a well-structured water safety awareness program for parents. A message that educates parents about the risk of drowning could prove useful in influencing parental safety behaviors. Water safety awareness, first aid skills, and comprehensive supervision should apply to all parents to prevent accidents among their children. In addition, Darul Ehsan Facilities Management Sdn Bhd can post more signs about the safety procedures and hazard warnings around the pool area and provide more lifeguards for the indoor and outdoor pools. Finally, the Life Saving Society of Malaysia (LSSM) can provide a water safety program for parents and the public.

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PAMERAN POSTER

Pameran Poster di ruang legar Bangunan Bangunan Pejabat Timbalan Naib Canselor Penyelidikan dan Inovasi

PAMERAN POSTER

Sesi penilaian poster oleh para penilai

4

BENGKEL JARINGAN INDUSTRI: PERANCANGAN DAN PEMBANGUNAN PELAN PERNIAGAAN

MOHD ASWAD BIN RAMLAN | AZITA AHMAD ZAWAWI

4.1 Pengenalan

Bengkel Jaringan Industri telah dijalankan pada 19 Disember 2021 bersempena penganjuran MOREC 2021. Penganjuran bengkel ini adalah merupakan satu inisiatif bagi memberi pendedahan serta peningkatan kompetensi peserta di kalangan ahli industri dalam aspek penyediaan pelan dan perancangan perniagaan. Sesi bengkel yang dikendalikan oleh Ts. Dr. Mohd Hafizal Ismail ini memberi pendedahan kepada beberapa perkara asas dalam memastikan perancangan dan pembangunan pelan perniagaan dapat dibangunkan dengan baik dan selaras dengan matlamat industri dan kehendak bakal pengguna.

Bengkel yang telah disertai seramai 40 orang peserta ini telah memberi penekanan khusus kepada konsep BLIND sebagai langkah asasdalam perancangan pelan perniagaan. Ianya adalah bertujuan bagi melatih peserta tentang bagaimana mengenalpasti latarbelakang dan kehendak pengguna agar dapat disesuaikan dengan perkhidmatan yang ingin ditawarkan. Ianya juga turut menerapkan pengenalan kepada elemen bahaya dan potensi risiko yang mana peserta perlu mengenalpasti dan merancang langkah pencegahan awal bagi mengurangkan risiko tertentu. Bengkel yang dijalankan secara hands-on dan interaktif ini turut memberi peluang kepada peserta untuk meneroka konsep BLIND ini dengan lebih mendalam lagi melalui aktiviti perbincangan dan tugasan berkumpulan. Setiap kumpulan kemudiannya perlu membentangkan hasil perbincangan dan idea untuk dinilai dan ditambahbaik oleh penceramah dan rakan-rakan peserta yang lain.

4.2 Justifikasi Output Bengkel

Bengkel Perancangan dan Pembangunan Pelan Perniagaan ini dilaksanakan bagi memenuhi keperluan industri rekreasi dan ekopelancongan negara bagi meningkatkan kemahiran dan keupayaan dalam perancangan dan pembangunan pelan perniagaan. Bengkel ini juga memperkenalkan konsep BLIND yang mana memberi penekanan kepada mengenalpasti dan mengambil kira faktor kehendak dari kacamata pengguna. Melalui pelan perniagaan yang didorong dan beroreintasikan pelanggan, peluang aktiviti rekreasi dan ekopelancongan yang bersesuaian dengan kehendak pengguna dapat dipertingkatkan. Ini seterusnya akan menggalak dan meningkatkan lagi penglibatan dan permintaan aktiviti berteraskan rekreasi dan ekopelancongan di kalangan masyarat di Malaysia.

4.3 Konsep BLIND

Secara umumnya, peserta diterapkan dengan lima aspek penting dalam konsep BLIND iaitu: Broad, Leverage, Instinct, New, Danger. Konsep Broad membawa pengertian bawah kumpulan sasaran atau pengguna yang berpotensi adalah merangkumi kelompok dengan latar belakang yang pelbagai. Pihak industri hendalah mengenalpasti siapa golongan sasaran dan perlu menyediakan penawaran yang bersesuaian kepada golongan sasaran ini. Konsep Leverage mengajak peserta untuk melihat apakah pakej atau perkhidmatan yang boleh ditawarkan bagi menarik minat golongan sasaran supaya datang kesanggupan untuk membayar (willingness to pay) bagi mendapatkan perkhidmatan tersebut. Produk atau perkhidmatan yang ditawarkan itu mestilah mampu menarik minat dan memberi manfaat (interesting and beneficial) kepada golongan sasaran. Konsep Instinct pula melihat kepada naluri dan kehendak golongan sasaran dan usaha untuk merangka strategi pemasaran yang bertepatan. Konsep New memberi penekanan kepada kepentingan menyediakan informasi dan penerangan secara terperinci kepada golongan sasaran yang dianggap "baru". Ini penting bagi memastikan pengguna jelas tentang perkhidmatan dan jenis produk yang akan mereka dapat. Konsep terakhir adalah "Danger" pula menitikberatkan keperluan untuk melihat potensi risiko yang ada pada persekitaran, peralatan dan juga risiko bahaya dari faktor manusia itu sendiri.

4.4 Kesimpulan

Bengkel Jaringan Industri ini boleh dianggap sebagai satu usaha ke arah membangun dan mempertingkatkan kualiti produk serta perkhidmatan dalam industri rekreasi dan ekopelancongan di Malaysia. Secara khususnya, ianya dilihat dapat membantu meningkatkan kompetensi peserta dalam aspek perancangan dan pembangunan produk dalam memastikan apa yang dirancang dan dilaksanakan bertepatan dengan kehendak industri dan pasaran. Justeru, diharapkan hasil daripada sesi perkongsian dan bengkel ini dapat digunakan sebagai panduan bagi perancangan dan pembangunan pelan yang strategik dan berdaya saing agar dapat melonjakkan lagi industri rekreasi dan pelancongan di Malaysia ke tahap yang lebih tinggi.

Gambarajah 4.1.
Peserta mendengar taklimat daripada penceramah Dr. Mohd Hafizal Ismail

Gambarajah 4.2.
Peserta menjalankan sesi perbincangan dalam kumpulan

Gambarajah 4.3.
Peserta membangunkan pelan perniagaan berdasarkan konsep BLIND

Gambarajah 4.4
Peserta membentang hasil tugasan beserta sesi soal jawab.

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