



7TH INTERNATIONAL CONFERENCE MISHEEL INSTITUTE-2024

Conference Proceedings
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INTERNATIONAL INSTITUTE
OF MANAGEMENT AND HUMAN RIGHTS



MONGOLIAN UNIVERSITY OF SCIENCE
AND TECHNOLOGY
SCHOOL OF TECHNOLOGY IN DARKHAN-UUL

TSICMI-24

2024.5.31~6.5 BUSAN, SOUTH KOREA



Korea Internet
e-Commerce Association
한국인터넷전자상거래학회



Call for the papers

“The Seventh International Conference MIYR 2024”

Seoul, South Pusan

2024.05.31~06.05

Welcome to the International Conference for Researchers

TSIC-MIYR- 2024 is being organized by:

- Misheel Institute for Young Researchers (MIYR)
- International Institute of Management and Human Rights(IIMHR)
- School of Technology in Darkhan-Uul, Mongolian University of Science and Technology

Aim of the conference:

The conference aims to build an international platform for the researchers to share their research findings with global audience, to improve the connection between theoretical and practical knowledge, to offer a networking opportunity for researchers and industrial participants, company representatives, to open opportunities to participate in projects and programs.

International Conference for Young Researchers welcomes submissions on areas including (but not limited to):

Topic 1. Information Technology

Topic 2. Bio Technology

Topic 3. Humanities

Topic 4. Physical sciences and Engineering

Topic 5. Health sciences

Topic 6. Social sciences

Topic 7. Environmental sciences/Geology

Topic 8. Others

General evaluation criteria for the best work:

- ✓ Theory and methodology used for the research is appropriate and scientific
- ✓ Methodology used for the research is clear and data used for analysis are appropriate
- ✓ Suggested idea/solution is practical
- ✓ Presentation can be prepared by group or individual researcher. Has to have a supervisor.
- ✓ Presentation should be 15minutes, 5 minutes Q&A session in ppt format.
- ✓ Article writing standards of the institute has be strictly followed

Important Dates:

- Abstract submission deadline(1-2p): ***April, 15, 2024***
- Full paper submission deadline(8-15p, MC-Word): ***April 30, 2024***
- Conference dates: ***May 31~June 1, 2024***

All Award /Gifts and certificates all presentations/

Grand Prize Award: Certificate and 400,000₪

Doctorate student awards:

First Prize 300.000₪

Second Prize Certificate and 250.000₪

Third Prize Certificate and 200.000₪

Master student awards:

First Prize 300.000₪

Second Prize Certificate and 250.000₪

Third Prize Certificate and 200.000₪

Conference committee:

- Ph.D. Gantumur Khongorzul, lecturer, Department of Industrial Management, Gyeongsang National University, South Korea, Misheel Institute Founder.
- Ph.D Choi Mihee, Professor, Department of Rehabilitation, Masan University
- Ph.D WonJong Kim, Assistant Professor, Department of Industrial Management, Gyeongsang National University, BERI, South Korea, Misheel Institute Board Member.
- Ph.D. Doctorant Batmunkh Shurentsetseg, Department of Industrial Management, Gyeongsang National University, South Korea, Misheel Institute Board Member.
- Ph.D. Choijin Zolzaya, Associate Professor, Head english Department, School of Foreign Languages, Mongolian University of Science and Technology, Misheel Institute Board Member.
- Ph.D G.Nyamsuren, Associate Professor, Department of Humanities, School of Applied Sciences, Mongolian University of Life Sciences.

Supporting Organization:

- GME Remittance
- TOPIC CENTER Korean Language Academy
- Good Daddy

Please send following documents to misheelinstitute@gmail.com

*Abstract and full paper, *Registration fee receipt, *Application form

Phone Number: 010-8519-2072/Korea/, 7785-8388/Mongolia/

“ VII дугаар Олон улсын хаврын хурал- Мишээл хүрээлэн 2024”

5- дугаар сарын 31~ 6-дугаар сарын 1ны өдөр, Солонгос улс Бусан хот

“Залуу Судлаачдын Мишээл Хүрээлэн”-гээс зохион байгуулж буй олон улсын болон монголын их дээд сургуулиудын магистр, докторант мөн залуу судлаачдын дунд эрдэм шинжилгээний шилдэг илтгэл, бүтээлийг шалгаруулах “ VII дугаар Олон улсын хаврын хурал Мишээл хүрээлэн 2024” нь 2024 оны 5-дугаар сарын 31~ 6-дугаар сарын 1ны өдөр зохион байгуулна.

Хурлын зохион байгуулагчид:

- Залуу судлаачдын мишээл хүрээлэн
- Олон улсын хүний эрхийн хүрээлэн, Солонгос
- ШУТИС- Дархан уул аймагдахь технологийн сургууль

Хурлын гол зорилго: Оюутнуудыг Олон улсын судалгаа шинжилгээний ажилд идэвхитэй оролцуулах, тэдний эрдэм шинжилгээний ажил, бүтээлийг нийтэд таниулах, дэмжих, бүтээлч сэтгэлгээг бий болгохоос гадна багш оюутны хамтын ажиллагааг хөгжүүлэх, онол практикийн мэдлэгийн уялдаа холбоог сайжруулах, оюутнуудын бүтээлийг ажил олгогчдод танилцуулах, төсөл хөтөлбөрт хамруулах боломж бололцоог бий болгоход оршино.

Салбар :

МТ - Мэдээллийн Технологи
БТ - Био Технологи
ХУ - Хүмүүнлэгийн Ухаан
ИТ - Инженер Технологи
АС - Анагаахын Салбар
НУ - Нийгмийн Ухаан
БГ- Байгаль/Газарзүй
ХА - Хөдөө аж ахуй
БС - Бусад салбар

Шилдэг бүтээлд тавигдах ерөнхий шаардлага:

- ✓ Судалгааны ажил нь шинжлэх ухааны онол, арга зүйд үндэслэгдсэн байна.
- ✓ Судалгаа шинжилгээний тодорхой арга зүй, арга техникийг хэрэглэсэн байхын зэрэгцээ тооцооллыг бодит өгөгдөл дээр тулгуурлан хийсэн байна.
- ✓ Илтгэлд дэвшүүлсэн санаа оновчтой, практикт хэрэгжих боломжтой байх.
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- ✓ Илтгэлийг PPT хэлбэрээр бэлтгэх ба илтгэх хугацаа 15 минут, хэлэлцэх хугацаа 5 минут байна.
- ✓ Өгүүллийг хүрэнлэнгийн “Өгүүлэл бичих стандарт”-ын дагуу бичиж ирүүлнэ.

Өдөр:

- Хураангуй авах хугацаа(1-2р): **2024-04.15**
- Бүрэн өгүүлэл авах хугацаа (8-15р, MC-Word) : **2024- 04.30**
- Хурал болох өдөр: **2024-05.31~06.01**

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II байр Батламж, 250.000 төгрөг

III байр Батламж 200.000төгрөг

Master student Awards:

I байр Батламж, 300.000 төгрөг

II байр Батламж, 250.000 төгрөг

III байр Батламж 200.000төгрөг

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Дэмжигч байгуулга:

- GME Remittance
- TOPIC CENTER Korean Language Academy
- Good Daddy

Судалгааны ажлын хураангуй 1ш, бүртгэлийн хураамжийн баримт 1ш, Анкет 1ш-ын хамт misheelinstitute@gmail.com илгээнэ. Холбоо барих:010-8519-2072/Солонгос/, 7785-8388/Монгол/

THE 7th INTERNATIONAL CONFERENCE MIYR 2024

MAY 31~ JUNE 1, SOUTH KOREA BUSAN

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Conference schedule

Section 1. Education, Online Presentation (5/31)

09:00~09:30	Participant registration	
	Gantumur Khongorzul, CEO, Misheel Institute for young researcher's Kwon Youngnam, CEO, International institute of management and human rights President, School of Technology in Darkhan-Uul, Mongolian University of Science and Technology	
Time Paper ID	Paper Title	Presenter
EDOT-09 09:30~09:45	Supporting equal access to education through the teacher exchange program	Baatar Tsogzolmaa Urtnasan Munkhtsetseg
EDOT-10 09:45~10:00	Some results of using multimedia for teaching biology course	Naran Amgalanbaatar Urtnasan Munkhtsetseg
SSED-27 10:00~10:15	Using rubrics to test students' performance	Osorjamaa Nandin-Erdene
SSED-29 10:15~10:30	The Impact of Adolescents Self-Assessment on the Attainment of Happiness	Erdenebileg Odontuya Delgerjav Munkhnasan
SSED-32 10:30~10:45	Preventing teenage students from peer bullying as a class tutor	N. Amarjargal B. Enkhmaa
SSED-23 10:45~11:00	Some Results of Teaching Business English using PBL	Bat-Ulzii Suvd-Erdene
SSED-47 11:00~11:15	Analyzing criteria of learning outcomes chemistry in secondary school	Bat-Ulzii Suvd-Erdene Zorigt Battungalag
SSED-24 11:15~11:30	A comparative analysis of children's ability to retain information: Case for normal and autistic children at 8-10 ages	Dorjbat Davkharbayar
Coffee Time-11:30~12:00		

Section 2. Business, Online Presentation (05/31)

/Mongolian time/

Time Paper ID	Paper Title	Presenter
SSBA-13 12:00~12:15	Arts and cultural marketing: Systematic literature review and future research agenda	Baasanjargal Purev Natsagdorj Baasanjav
SSEC-33 12:15~12:30	Analysis of factors affecting the growth of foreign investment	Sosorbaram Galbadrakh
SSEC-45 12:30~12:45	Cost, volume, profit analysis of herder household (Example on Bugat soum of Bulgan province)	Badarch Khishigdavaa L.Battsengel E.Regzendorj
SSBA-48 12:45~13:00	Ways to increase the attitude of employees to work	Bataa Otgontugs
SSBA-49 13:00~13:15	A study of the elements influencing human resource sustainability	Dagvasambu Munkhjargal
SSBA-50 13:15~13:30	Determining normative levels of indicators for the company's assets and capital structure	Ganbat Lkhamdulam, Sodnomdavaa Tsolmon
SSHS-17 13:30~13:45	Group and individual psychotherapy for depression level reduction /In the case of teenage mothers/	Jyekyei Kalamkhas
SSOT-20 13:45~14:00	Future development trend of sukhbaatar district, Ulaanbaatar city	Altankhuyag Buyankhishig Agvaanjigmid Bolormaa
SSPT-22 14:00~14:15	Analysing students political attitudes: case for age group 18-25 in Darkhan-Uul province	Dariimaa Dungaamaa
ITET-08 14:15~14:30	An analysis of the factors affecting interruption of overhead power line	Urtnasan Munkhtsetseg, Bold Gereltuya
14:30~14:45 Last Greeting (Discussion)		

Section 3. Other, Online Presentation 05/31 /

Mongolian time/

Time Paper ID	Paper Title	Presenter
OTSL-01 14:45~15:00	On analysis of the supply of mining equipment through system dynamics	Lkhaasuren Batbold, Davaanyam Batnasan
HSLs-06 15:00~15:15	A research on writing errors of students learning English	Nyamsuren Selenge
HSLs-11 15:15~15:30	Some observation in the Mongolian & English Intensified Adjectives	Badamsuren Ganbold
HSLs-15 15:30~15:45	A Study of the animal metaphor for emotional expressions	Zolzaya Choijin
HSLs-03 15:45~16:00	The ways to translate some English verbs in the frame of the context	Dorjbat Khugjmaa
BTNS-18 16:00~16:15	Satellite based surface evapotranspiration estimation in Mongolia	Erdeneshoo Orolmaa, Sanjaa Tuya
BTOT-37 16:15~16:30	The effect topography in prediction of wheat yield	Erdenetuya Boldbaatar Tuvshinbayar Danzan Munkhjargal Ochirbat
MSGM-34 16:30~16:45	Relationship between oral health knowledge and dental caries during pregnancy	Ganbaatar Nomin, Altansukh Suvdanchimeg, Sharkhuu Munkh-Od, Batbold Bayarmaa, Baatarjav Tselmeg, Bayarmagnai Namuun, Bazar Oyuntsetseg
MSGM-35 16:45~17:00	Dental caries association between socioeconomic and some other factors in pregnant women in Mongolia	Altansukh Suvdanchimeg, Sharkhuu Munkh-Od, Batbold Bayarmaa, Baatarjav Tselmeg, Bayarmagnai Namuun, Bazar Oyuntsetseg, Ganbaatar Nomin
SSED-07 17:00~17:15	Empowering young male volleyball players: a training strategy for explosive strength	Batbayar Tegshbayar Suvd-Erdene Bat-Ulzii
17:15~ Last Greeting		

Poster Presentation (06/01)		
Paper ID	Paper Title	Presenter
SSED-51	Teaching Volleyball Techniques to boys aged 11-12 years	Batbayar Tegshbayar, Suvd-Erdene Bat-Ulzii
ITME-19	Utilizing a regulated technique for introducing sulfur into molten steel	Khureltogoo Khaltar
SSED-21	Analysis of students' satisfaction with 1+3 program at School of Technology in Darkhan-Uul, MUST	Purevtseren Nyambayar

South Korea, Busan 2024.6.1

Oral presentation

/Korean time/

10:30~11:00	Participant registration	
11:00~11:30	Gantumur Khongorzul, CEO, Misheel Institute for young researcher’s Kwon Youngnam, CEO, International institute of management and human rights President, School of Technology in Darkhan-Uul, Mongolian University of Science and Technology Choi Mihee, Editor Chief, Misheel Institute for young researcher’s	
Offline presentation in Seoul (06/01)		
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SSED-52 11:30~11:45	Globalization and education movement	Sandagsuren Enkhtuya Battumur Gerelmaa
SSBA-42 11:45~12:00	Rural center revitalization project resident capacity building education Analysis of resident satisfaction before and after	Lee Young Ja Oh Jean Sin
SSBA-40 12:00~12:15	Exploring the Impact of Entrepreneurial Psychology and Behavior on Management and Performance in the Food Industry	Yu Jiay Gantumur Khongorzul Oh Jean Sin
SSBA-41 12:15~12:30	A study on the confidence of disabled athletes	Choi Mihee Lee Hanchun Shim Hyuchon Gantumur Khongorzul
SSBA-05 12:30~12:45	Exercise rehabilitation sports ODA for Mongolian sports universities Business satisfaction survey	Choi Mihee Kwon Daehan Gantumur Khongorzul
SSBA-02 12:45~13:00	A study on the impact of smart plant key factors on strengthening competitiveness	Choi Mihee Kim Taeryo Gantumur Khongorzul
BTOT-30 13:00~13:15	Risk assessment on the Effects of dust concentration on climate change in some areas of Govi Desert	Yanjmaa Battsetseg, Danzansambuu Amarjargal
SSBA-26 13:15~13:30	The Impact of Entrepreneur's Age on Serial Entrepreneurship Speed: The Moderating Effect of Positive gains after failure	Enkhbaatar Uyanga Choi Jayoung
13:30~14:00 GME Co., Ltd Introduction and Good Daddy Co., Ltd Coffee Time		
SSEC-16 14:00~14:15	Terms of cashmere product export	Terbish Azbayar Sukhbaatar Tuul Gansukh Nyamsuren
SSHS-25 14:15~14:30	Conducting an empirical investigation into the utilization patterns and effectiveness of health applications	Davaasuren Enkhjin Sukhbaatar Gantseteg Dambasanjaa Tsolmontuya Odsuren Bold-Erdene Erdenechuluun Narantungalag Bavarsaikhan Narmandakh

MSGM-43 14:30~14:45	Analysis on Efficiency and Productivity Changes of Regional Public Hospitals in Mongolia with Data Envelopment Analysis and Malmquist Indices Models	Changhee Kim Bolorchimeg Uranchimeg
HSTS-28 14:45~15:00	Some human resource issues in the tourism industry:	Batjargal Nyamtsetseg, Sanj Otgonsuren
BTNS-44 15:00~15:15	Use of Mongolian Natural Zeolite in Agricultural	Bayarsaikhan Battsetseg Sukhbaatar Saruul Tugjjav Oyunchimeg
BTOT-04 15:15~15:30	Vegetable Import Survey./On the Example of potato cultivation/	Bolormaa Nomin Khongorzul Jargalsaikhan
SSED-53 15:30~15:45	Comparative study of the methodological environment of educational technology innovation	Dashdorj Enkhjargal
15:45~17:00 Discussion Last Greeting and Coffee Time		

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OTSL-01

Analyzing Supply Support of Spare Parts with System Dynamics

Batbold Lkhaasuren, Batnasan Davaanyam

Mongolian University Science and Technology, School of Applied Sciences

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Abstract: To realize “Focus Logistics” with low cost, from the macroscopical and systematic view and considering the whole procedure of spare parts supply support including production, order, supply, store, use, recovery (for the repairable), and retirement, System Dynamics (SD) theory was applied to analyze the properties of dynamics in supplying flow of spares parts. The general model was built for spare parts supply support procedure and relevant data was simulated. Based on the current condition and strategy of supply support, it was evaluated and predicted that the amount of equipment and relevant expenses which are needed by the specific military unit in the sometime of future. Through cyber-aid strategy adjustment and simulating experiment, the optimum support strategy for “high efficiency and low cost” could be found, and specific advice based on different time and conditions could be proposed, such as the frequency and amount of order at different time.

System Dynamics is applied to dynamic research on spare parts supply support. The model built can describe the dynamic structure of the spare parts supply support system to some degree, make decision simulations and multi-variant comparisons conveniently and flexibly and propose specific advice based on different time and conditions. The model is generally fit for spare parts supply support in military equipment. Slightly modified, the model can also be applied into the coordination of supply chain system’s structures and functions and the dynamic development of the system in a medium and long term in civil-use areas such as motor vehicles and household appliances. But there are also some deficiencies in the model. Paying more attention to the long term, integrated and tendency description of the system, the model provides satisfactory solution instead of optimum solutions more often. About the design of the model, some parameters are hard to quantify accurately, causing a high randomness in the quantification process of parameters.

Keywords: system dynamics; integrated logistics support (ILS); spare parts; supply support

SSBA-02

A study on the impact of smart plant key factors on strengthening competitiveness

Choi Mihee, Kim Taeryo, Gantumur Khongorzul

Department of Rehabilitation, Masan University, South Korea

Corresponding author: Choi@masan.ac.kr

Abstract: This study focuses on the key success factors for smart plant construction: organizational factors (Leadership of top management, competency development of organizational members), technical factors (technology relevance, safety and risk taking), and the relationship between the above factors with expectations for competitiveness enhancement has been tested through structural equation model analysis. For the empirical analysis, a survey has been conducted. The results of the study are as follows. As a result of the structural equation model analysis for the research model, it was confirmed that competency development of organizational members, technology relevance and government support have a significant influence on the expectations for competitiveness enhancement. And Leadership of top management, safety and risk taking and influence of business partners have a not significant influence on the Expectations for competitiveness enhancement.

Keywords: Organizational factor, Technical factor, Expectations for competitiveness enhancement

1. Introduction

전 세계적으로 4차 산업혁명은 경제·산업 분야에 큰 변화를 가져오고 있으며, 그 중심에는 독일의 ‘Industry 4.0’, 과 미국의 ‘첨단제조 파트너십(AMP)’, 중국의 ‘제조업 2025’ 등에 세계 주요국들은 산업 정책을 통한 산업 경쟁력을 강화하고 있다. 또한, 한국도 4차 산업혁명 시대에 능동적으로 대응하기 위해 4차 산업혁명 위원회를 설치하는 등의 정책이 마련되고 있다[1]. 유럽에서는 인더스트리 4.0(Industry 4.0)이라는 개념으로 제조업과 같은 전통산업에 정보통신기술을 결합한 스마트 플랜트 구축이라는 혁신적인 변화가 진행 중이다. 인더스트리 4.0에서의 대표적인 기술로는 사물인터넷(IoT), 빅데이터, 인공지능(AI) 등이 있다. 유럽의 글로벌 에너지 기업들은 이러한 기술들을 플랜트 설비관리에 접목, 가상시뮬 운전, 예측진단, 인공지능 기반의 결함 검사 등으로 활용함으로써 생산성을 획기적으로 높이고 있다[2]. 국내 기업들도 이러한 변화에 적극적으로 대응하기 위해서는 유럽의 선진 기업들의 도입사례를 자세히 검토하여 이를 바탕으로 장기적인 전략 수립이 필요하다.

스마트 플랜트에 관한 선행연구들을 살펴보면, 인더스트리 4.0시대의 스마트 팩토리[3~6], 4차 산업혁명 및 스마트 플랜트[7~9], 중소기업의 스마트 팩토리[10], 스마트공장 수용 요인 및 성과 분석[11]등의 기술적

측면이 선행연구는 다수이며, 이러한 기술의 적용만으로 디지털 기업이 이루어지는 것은 아니다. 기업의 성장에는 기술의 도입뿐만 아니라 조직, 인적 자원 측면에서 요소와 환경 측면 적 요소가 동시에 고려되어야 한다는 것을 알 수 있다. 기업의 경영진, 관리자, 분석가 등을 대상으로 Deloitte[12]에서 실시한 조사에 따르면, 스마트 팩토리 및 밀접한 관련을 지닌 디지털 환경으로의 성공적인 변화를 위하여 조직이 갖추어야 할 중요한 역량에 관한 물음에 18%의 응답자만이 기술적 역량이 중요하다고 응답하였으며, 나머지 82%에 해당하는 응답자는 조직·경영적 측면에서의 관련 사항들이 중요하다고 응답하였다. 이를 통해 디지털 기업으로의 전환은 단순히 더 나은 기술만을 적용하는 것이 아닌 기업의 문화와 사람, 구조, 과업을 잘 조화시키는 것에 초점을 두어야 한다는 것을 의미한다[13].

2. Theoretical background

2.1 4th Industrial Revolution

미국의 4차 산업혁명과 관련한 산업인터넷 컨소시엄(Industrial Internet Consortium, IIC)에서는 ‘더 나은 경영·사회적 성과를 예측, 통제, 계획하기 위해 사용되는 복잡한 물리적 설비 및 장치와 네트워크 센서 및 소프트웨어를 통합하는 것’이라 인더스트리 4.0의 개념을 정의하고 있다. Chung & Kim[19]은 ‘자동화된 데이터 교환과 제조기술능력을 갖춘 수많은 시스템의 집합’으로 인더스트리 4.0을 정의하였으며, Deloitte[12]은 ‘CPS에 의한 생산 및 물류 부문의 기술적 통합’으로 인더스트리 4.0의 개념을 설명하였다. Simons et al.[20]은 ‘생산 현장에서의 향상된 자동화 기술과 IT 시스템의 완전한 통합’이라고 언급하였다. Schröer[21]은 인더스트리 4.0을 ‘디지털 혁명(Digital Revolution)’이라는 용어로 대응하여 설명하기도 하였다.

2.2.1 Organizational Factors

Diericks & Cool[28]은 조직역량을 ‘기업이 경쟁사보다 더 좋은 성과를 거두기 위해서 자원을 조달하고, 개발하며, 그리고 배분하도록 해주는 비정형적인 메커니즘’으로 정의했다. 구정대[29]는 보편적인 의미에서 조직역량을 ‘조직의 경영자원을 효과적으로 배치하고 활용할 수 있는 노하우나 능력’으로 정의했다. 기업자원의 특성은 가치가 있으며, 희소하고, 모방할 수 없으며, 그리고 대체할 수 없다는 것이다. 이러한 특성으로 인해 자원은 기업이 경쟁력을 갖는데 중요한 요소가 되며, 자원의 창출과 활용 수준에 의해 기업의 경쟁우위가 결정될 수 있다. 즉 기업은 자원을 활용하는 전략을 수행함으로써 지속적인 경쟁우위를 확보해 나갈 수 있다[30]. Simons[31]는 ‘조직역량을 조직학습과 혁신’으로 정의하고, 기업을 변화시키는 중요한 동인으로 조직역량을 강조하였다. 한편 일부 학자는 조직역량은 유형이 아닌 내재한 속성에 따라 분류하기도 한다. 김봉진[32]은 ‘기존역량은 기업이 기존에 갖고 있던 역량이나 기술을 활용하여 개선과 점진적 변화를 끌어내는 능력이고, 신역량은 역량, 자원, 기술, 프로세스와 같은 대상을 새롭게 탐구하고 개발하여 급진적 변화를 끌어내는 능력’이라 하였다. 조직역량은 조직을 구성하는 개인역량에 좌우된다. 조직 개개인이 활용역량이나 탐험역량을 발휘한다면 이는 곧 조직역량으로 실현된다.

H1a: 최고경영자의 의지는 기업의 경쟁력 강화에 대한 기대에 긍정적인 영향을 미칠 것이다.

H1b: 조직원 역량 개발은 기업의 경쟁력 강화에 대한 기대에 긍정적인 영향을 미칠 것이다.

2.2.2 Technical Factors

업무 기술 적합성 모델(Task Technology Fit, TTF)은 업무와 기술에 대한 적합성이 업무 요구사항과 개인 능력의 적합한 정도라고 정의를 한 Goodhue & Thompson[33]들은 TAM 모델을 확장하여 제안한 ‘업무 기술

적합성 모델(TTF: Task-Technical Fit Model)’은 개인이 업무를 수행할 때 정보 기술이 얼마나 잘 지원해주는가를 의미하는 것이다.

Goodhue& Thompson[33]의 기술 특성은 개인이 업무에 사용하는 도구, 업무 특성은 업무 복잡성, 업무 빈도, 업무시간 중요성으로, 불확실성은 복잡성, 갈등으로 또는 난이도, 다양성 등으로 구분하였다. 또한 업무 기술 적합-접근성(Accessibility), 지원(Assistance), 사용 편리성(Ease of Use), 시스템신뢰성(System Reliability), 정확성(Accuracy), 호환성(Compatibility), 보급 수준(Level of Confusion), 제시(Presentation), 혼란 수준(Level of Confusion), 세부 사항 수준(Level of Detail), 의미(Meaning), 장소(Location)의 12 개 차원으로 분류하였다. 이러한 업무를 기반으로 하는 전략은 기술과 과제 특성 간의 일치를 더 잘 설명 할 수 있어서 개별적인 성과와 기술사용을 향상할 수 있다[17].

일반적으로 안전(Safety)의 개념은 ‘개인 및 공동체의 건강과 복지(Well Being)를 보존하기 위해 신체적, 심리적, 또는 물질적 위해를 초래하는 위험과 상황을 통제하는 상태’로 정의된다[34]. Kusiak et al.[35]은 전통적인 제조업의 형태와 미래의 스마트 제조를 비교함과 동시에 지속해서 발전하고 있는 미래의 스마트 제조에 대한 특징을 10 가지로 정리하였다. 그의 연구에서는 데이터에 대한 의존성이 높아지는 ‘제조 디지털화’를 첫 번째 특징으로 강조하며 이러한 데이터의 양적 증대 및 의존성으로 인해 ‘사이버 보안’이 비즈니스의 경쟁력과 스마트 제조의 발전에 가장 중요한 요소가 된다는 것을 강조하였다.

Deloitte et al.[12]에서 실시한 조사에 따르면, 기업의 디지털 환경을 구축하는 데 있어서 해킹을 통한 지식재산권의 유출 등과 관련 하여 보안에 대한 이슈가 중요하게 강조되어야 한다는 것을 설문조사를 통해 확인되었다[13]. 인더스트리 4.0 의 디지털 통합을 위한 핵심 구성 요소와 적용 원리에 대하여 정리한 Wang et al.[36]의 연구에서는 CPS, IoT, 데이터 마이닝, IoS 와 같은 항목을 핵심 구성 요소로 정리하였으며, 상호운용성, 가상화, 분산화, 실시간 역량, 서비스 기반, 모듈화, 그리고 보안상의 안전에 대한 사항을 적용 원리로 분류하기도 하였다.

H1c: 기술적합도/필요성은 기업의 경쟁력 강화에 대한 기대에 긍정적인 영향을 미칠 것이다.

H1d: 안전성 및 위험성은 기업의 경쟁력 강화에 대한 기대에 긍정적인 영향을 미칠 것이다.

3. Research Design

3.1 Research model



3.2 조작적 정의

3.2.1 스마트 플랜트의 핵심요인들의 조작적 정의

본 연구에서는 최고경영자의 의지를 ‘스마트 플랜트 구축 및 활성화를 위하여 경영층의 적극적인 지원, 관심, 몰입, 열정 및 재정적 지원’으로 정의하고자 한다. McKinsey et al.[44]에서 활용된 항목을 추가로 검토하여 본 연구에 적합하도록 수정 및 보완한 총 8개의 항목을 구성하였다.

조직원 역량개발을 본 연구에서는 ‘새로운 제조 환경에서 가치 부가적 활동을 수행하기 위해 요구되는 조직원의 지식, 새로운 기술 환경의 전문성 강화를 위한 교육 및 훈련 활동, 기술 측면의 역량을 강화하는 활동’으로 정의하고자 한다. 구체적인 측정항목은 Abele et al.[45]에서 강조한 추가적인 사항을 고려하여 본 연구에 적합하도록 수정 및 보완한 총 4개 항목으로 구성하였다.

기술적합도/필요기술을 ‘운전개선에 관한 공정관리와 유지/보수가 가능, 예지 혹은 예방적 보수/관리가 가능, 안전/에너지/유틸리티 소비량 절감 등’으로 정의하였으며, Abele et al.[45]에 제시한 문항을 본 연구에 적합하도록 수정 및 보완 후 총 5개의 항목으로 구성하였다.

안전성 및 위험성은 본 연구에서 ‘설비와 시스템으로부터 생성되는 정보, 데이터에 대한 보안체계가 구축, 설비와 시스템의 안전성’으로 정의하였으며, 한국표준협회[46] 및 Davis[47]에 제시한 공통의 내용을 기반으로 본 연구에 적합하도록 수정 및 보완 후 총 4개의 항목으로 구성하였다.

정부 지원은 본 연구에서는 ‘스마트 플랜트에 관한 정부 지원사업을 알고 있다, 스마트 플랜트를 통한 기업의 대외 경쟁력 향상을 위하여 정부의 적극적 지원’으로 정의하였으며, 산업통상자원부[48] 및 이상동[49]에 제시한 문항을 본 연구에 적합하도록 수정 및 보완하여 총 4개의 항목으로 구성하였다.

거래기업의 영향력은 본 연구에서는 ‘주변 협력 기업들이 스마트 플랜트 시스템으로 전환, 도입 권유, 시스템에 대한 불만족’으로 정의하고자 하였으며, 산업통상자원부[48] 및 이상동[49]이 제시한 문항을 본 연구에 적합하도록 수정 및 보완하여 총 3개의 항목으로 구성하였다.

3.2.2 기업 경쟁력 강화에 대한 기대 및 스마트 플랜트 구축의지의 조작적 정의

기업 경쟁력 강화에 대한 기대는 본 연구에서는 ‘스마트 플랜트 시스템이 구축된다면 설비유지보수 비용 절감, 제품 가공비용 절감, 제조 프로세스(공정)의 신속한 변경, 설비고장의 사전 예측과 예방’으로 정의하고자 하였다. 박종식과 강경식[43]에서 제시한 문항 사항을 고려하여 본 연구에 적합하도록 수정 및 보완한 총 4개 항목으로 구성하였다.

3.3 측정 문항

본 연구에 대한 주요 구성개념에 관한 질문은 해당 질문에 ‘전혀 그렇지 않다 그렇지 않다, 보통이다, 그렇다, 매우 그렇다’라는 리커트 5 점 척도로 구성하였고, 총 8 개의 구성개념에 개 문항으로 설계하였으며, 설문 항목은 다음의 [Table 1]와 같다.

[Table 1] 측정문항

Items	Measures
Leadership of Top Management	스마트 플랜트에 대한 비전을 수립하여 조직이 달성해야 할 구체적인 목표를 공유한다.
	스마트 플랜트 구축 및 활성화를 위하여 중·장기 비전과 전략, 실행계획이 명확하게 연계되어 있다.
	스마트 플랜트 구축 및 활성화를 위하여 경영층은 적극적으로 재정적 지원을 제공한다.
	스마트 플랜트 구축 및 활성화하기 위하여 최고경영층의 관심과 몰입 수준이 높다.
	스마트 플랜트의 안정적인 도입 및 구축을 위하여 최고경영자는 재정적 지원을 제공한다.
	스마트 플랜트를 통하여 생산혁신을 위한 최고경영자는 열정이 있다.
	스마트 플랜트를 글로벌 제조 환경에서 중요하게 인식하고 있다.
Competency Development of Organizational Members	스마트 플랜트는 정부 지원이 없어도 지속해서 추진한다.
	스마트 플랜트의 원활한 운영을 위해 현장 중심의 실무적 지식을 습득하고 공유하기 위한 노력을 시행하고 있다.
	스마트 플랜트와 관련한 새로운 기술 환경의 전문성 강화를 위한 교육, 훈련 활동을 시행한다.
	스마트 플랜트의 원활한 운영에 요구되는 종업원의 역량을 강화하기 위한 장기적인 학습 체계를 구축하고 있다.
Technology Relevance	스마트 플랜트와 관련한 신규 기술인력의 확충과 역량을 강화하기 위해 노력하고 있다.
	스마트 플랜트는 비정상 운전상태인 설비에 대한 원격운전을 통한 공정관리와 유지/보수가 가능할 것이다.
	스마트 플랜트는 운전 혹은 장치 관련 문제 발생 때 예지 혹은 예방적 보수/관리가 가능할 것이다.
	스마트 플랜트는 운전개선에 관한 안전/에너지/유틸리티 소비량 절감될 것이다.
	스마트 플랜트는 생산성 향상을 위한 재료투입변경, 단위 장치/공정구조 변경 또는 운전조건의 변화가 가능할 것이다.
Safety and Risk Taking	스마트 플랜트는 신공정개발을 위한 기존 생산 설비의 증설, 제거 혹은 변경이 빨라질 것이다.
	현재 우리 회사는 외부의 접근성 및 공격에 대응하기 위하여 설비와 시스템으로부터 생성되는 정보, 데이터에 대한 보안체계가 구축되어 있다.
	현재 우리 회사는 설비와 시스템이 고장 및 결함으로부터 기능적인 신뢰성이 확보되어 있으며, 지속적인 통제 가능 상황으로 유지된다.
	현재 우리 회사는 작업자에게 피해를 가하지 않도록 설비와 시스템의 안전성이 확보되어 있다.
Expectations for Competitiveness Enhancement	현재 우리 회사는 공정 및 완제품이 환경에 해로운 영향을 미치지 않도록 설비와 시스템의 환경 안전성이 확보되어 있다.
	스마트 플랜트 시스템이 구축된다면, 설비정비 및 유희시간을 단축하여 설비유지보수 비용을 절감된다.
	스마트 플랜트 시스템이 구축된다면, 생산 공정의 낭비를 제거하여 제품 가공 비용이 절감된다.
	스마트 플랜트 시스템이 구축된다면, 고객의 주문을 충족하기 위해 제조 프로세스(공정)의 신속한 변경이 가능하다.
	스마트 플랜트 시스템이 구축된다면, 설비고장의 사전 예측과 예방을 할 수 있다.

4. Results

4.1 인구통계학적특성

본 연구의 실증분석을 위하여 관련 기업 종사자를 대상으로 설문조사를 실시하였다. 총 146 부의 응답지를 회수하였으며, 이 중 불성실한 답변을 포함한 응답지를 제외하여 총 137 부가 최종분석에 활용되었다. SPSS20.0 과 AMOS18.0 을 활용하여 분석하였으며, 인구통계학적 특성은 [Table 2]와 같다.

[Table 2] 인구통계학적 특성

구분		명	%	구분		명	%
성별	남자	128	93.4	근무 연수	5 년 미만	7	5.1
	여자	9	6.6		5 년~10 년 미만	23	16.8
나이	20 대	-	-		10 년~15 년 미만	46	33.6
	30 대	35	25.5		15 년~20 년 미만	22	16.1
	40 대	72	52.6		20 년 이상	39	28.5
	50 대 이상	30	21.9	직급	과장급	44	32.1
최종학력	고교 졸업	1	0.7		차장급	53	38.7
	전문대학교 졸업	8	5.8		부장급	29	21.2
	대학교 졸업	101	73.7		임원급	5	3.6
	대학원 졸업	28	20.4		대표	6	4.4
업종	제철	15	10.9	스마트 플랜트 활용 누적 기간	6 개월 미만	92	67.2
	석유, 가스	7	5.1		1 년 미만	23	16.8
	화학	8	5.8		2 년 미만	22	16.1
	조선	4	2.9		5 년 미만	-	-
	EPC	28	20.4	소속기업 규모	중소기업	8	5.8
	에너지	74	54.0		중견기업	9	6.6
	기타	1	.7		대기업	96	70.1
					공기업	24	17.5

4.2 신뢰도분석

[Table 3] 신뢰도 분석결과

Construction		No. of Items	Cronbach's α
Organizational Factors	Leadership of Top Management(WM)	8	.906
	Competency Development of Organizational Members(OD)	4	.902
Technical Factor	Technology Relevance(TR)	5	.857
	Safety and Risk Taking(SR)	4	.903
Expectations for Competitiveness Enhancement(ECE)		4	.867

4.3 탐색적요인분석

[Table 4] 탐색적요인분석 결과

	1	2	3	4	5	6	7	8
WM1	.048	.706	.234	.040	.307	.269	.036	.036
WM2	.096	.776	.246	.128	.269	.159	.102	.016
WM3	.246	.719	.329	-.048	.033	.001	.054	-.027
WM4	.128	.855	.072	.129	.088	.101	.050	.122
WM5	.285	.759	.185	.084	-.004	.028	.234	-.084
WM6	.246	.809	.090	.126	.095	.044	-.012	.013
WM7	.257	.720	.091	-.011	.310	.238	.049	.073
WM8	.297	.540	.046	.194	.275	-.141	.226	-.221
OD1	.298	.194	.756	.125	.129	.150	.166	-.056
OD2	.119	.190	.783	.329	.113	.040	.186	.056
OD3	.168	.254	.745	.269	.109	-.032	.176	.142
OD4	.197	.364	.641	.213	.102	-.166	.093	.149
TR1	.724	.118	.110	.103	.276	.159	-.025	.311
TR2	.607	.133	.265	.039	.391	.213	.018	.011
TR3	.656	.197	.375	-.001	.205	.202	-.220	.146
TR4	.659	.303	.289	-.174	.264	-.146	.046	.253
TR5	.528	.250	.104	-.035	.275	-.022	-.028	.352
SR1	.155	-.005	.198	.809	.063	.111	.033	-.036
SR2	.235	.094	.276	.801	-.029	.098	.208	-.065
SR3	.277	.086	.053	.839	.111	-.020	.050	.027
SR4	.177	.197	.171	.835	.058	.063	-.016	.073
EFE1	.279	.240	.067	.092	.003	.695	-.071	.152
EFE2	.271	.183	.040	.082	.129	.744	.111	.035
EFE3	-.013	.246	-.033	.199	.081	.706	.201	.030
EFE4	.046	.127	.041	.163	.012	.855	.005	.024
Total	8.247	4.911	3.527	3.426	2.712	2.181	1.638	1.392
%Var	21.704	12.924	9.282	9.015	7.137	5.739	4.311	3.663
Cum%	21.704	34.628	43.910	52.925	60.062	65.801	70.113	73.775

4.4 확인적요인분석

[Table 5] 확인적요인분석 결과

	Estimate	S.E.	C.R.	P	C.R	AVE
WM6	.782					
WM5	.819	.095	10.297	***		
WM4	.817	.098	10.268	***		
WM3	.791	.100	9.863	***		
WM2	.744	.105	9.159	***		
WM1	.775	.110	9.622	***		
					0.875	0.621

OD4	.784					
OD3	.895	.095	11.651	***	0.904	0.703
OD2	.873	.093	11.309	***		
OD1	.797	.093	10.075	***		
TR5	.762					
TR4	.712	.115	8.322	***	0.859	0.549
TR3	.714	.097	7.823	***		
TR2	.768	.101	8.387	***		
TR1	.750	.112	8.197	***		
SR4	.847					
SR3	.848	.079	12.222	***	0.907	0.709
SR2	.896	.089	13.265	***		
SR1	.775	.100	10.634	***		
EFE4	.845					
EFE3	.729	.085	9.934	***	0.868	0.622
EFE2	.811	.069	11.682	***		
EFE1	.767	.079	10.701	***		
CMIN=613.678, CMIN/df=1.408, CFI=.951, TLI=.941, IFI=.952, NFI=.852, GFI=.808, AGFI=.753 RMR=.028, RMSEA=.055						

4.5 판별타당성

[Table 6] 상관계분석 결과

	WM	OD	TR	SR	EFE
WM	.621				
OD	.341	.703			
TR	.357	.311	.549		
SR	.263	.190	.404	.709	
EFE	.253	.605	.162	.122	.622

4.6 Path analysis

[Table 7] 경로분석 결과

		Estimate	S.E.	C.R.	P	Results
Organizational Factor	H1a	.021	.073	.244	.807	Rejected
	H1b	-.138	.065	2.094	.036	Supported
Technical Factor	H1c	.729	.121	6.104	***	Supported
	H1d	-.044	.079	-1.308	.191	Rejected

CMIN=586.634, CMIN/df=1.349, CFI=.958, TLI=.949, IFI=.959, NFI=.858, GFI=.819, AGFI=.766
RMR=.026, RMSEA=.051

5. Conclusion

본 연구의 결과에 대한 구체적인 해석과 시사점은 다음과 같다. 첫째, 조직요인, 기술요인 및 환경요인이 기업 경쟁력 강화에 대한 기대에 유의한 영향을 미치는 결과는 기술적 측면을 집중적으로 조명했던 기존의 선행연구에 대한 한계를 해소하는 데 있어 긍정적으로 볼 수 있다. 한편, 이러한 실증연구의 결과는 4차 산업혁명과 스마트 팩토리 등과 관련하여 사회-기술적 체계를 강조했던 기존의 선행연구(DIN과 DKE, 2016; Dregger 외, 2016; Ranz 외, 2015; Reuter 외, 2017)을 실증적으로 검증함으로써 해당 중요성을 다시금 확인하였다는 점에서 의의가 있다. 기존의 질적 측면의 연구와 본 연구에서 수행한 양적 측면의 연구는 급격히 변화하는 현대의 경영환경에 생존을 위한 우선적인 의사결정이 스마트 플랜트의 도입이 될 수 있다는 점을 각인시켜준다.

셋째, 스마트 플랜트의 핵심 성공 요인 중 기술적합도/필요성은 산업통상자원부(2015a)에서 제시한 스마트 플랜트의 핵심기술 구조도에 해당하며, 같은 관점에서 중소벤처기업부(2017; 2018)에서도 스마트 팩토리의 필수적인 기술적 구성 요소로 강조한 사항에 해당한다. 기술요인이 목적은 데이터의 확보이며, 이러한 데이터의 확보와 가공은 사업 타당성 및 엔지니어링, 기자재 제작 및 공급, 공사 및 시공, 운전, 관리 및 운영에 주요하며, 플랜트 산업의 기반인 플랜트 기본설계, 고부가가치 기자재, 패키지 설비, 관리 운영시스템, 유지, 보수 등의 공통 핵심기술분에 취약함을 많은 데이터의 확보 및 가공을 통하여 더욱더 많은 부분에서 향상하게 시킬 수 있으며, 이는 기업 경쟁력 강화에 대한 기대에 매우 중요한 요소로 발전될 것이다.

넷째, 스마트 플랜트의 핵심 성공 요인 중 정부 지원은 환경요소로 그 중요성을 강조하고 있다. 정부는 업종·수준에 따른 다양한 모델 공장을 구축하고 각 특성에 적합한 가치사슬 전반의 스마트화를 추진하고자 노력하고 있으며[48], 스마트 팩토리 3만 개의 누적 보급·확산 및 관련 전문인력 4만 명 양성, 스마트 팩토리의 고도화 수준 향상을 목표로 하고 있다(중소벤처기업부, 2018). 또한 중동, 중국 등에 신증설에 및 국내 석유화학업계의 경쟁 심화에 따른 대규모 투자가 불가피하며, 매우 중요히 되는 자연환경 오염 및 그에 대한 복원에 정부 및 외부건설팅에 중요성을 본 연구는 보여 주고 있다.

이상에서의 논의에서 살펴본 바와 같이 본 연구에서 선행변수로 설정한 조직요인, 기술요인, 환경요인 등은 스마트 플랜트 구축에 대한 긍정적인 기대심리를 자극하며, 이는 스마트 플랜트 구축의지에 영향을 미치는 것을 확인할 수 있다. 즉, 스마트 플랜트 구축을 위한 핵심요인은 기업의 경쟁력이 강화될 것이라는 기대감을 증가시키며, 기업의 경쟁력 강화에 대한 기대는 스마트 플랜트 구축의지를 더욱 강화시키는 역할을 하고 있음을 의미한다.

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HSLs-03

The Ways to Translate Some English Verbs in The Frame of The Context

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Abstract: The vocabulary of any language is enriched with new vocabulary terms following the changes and new phenomena that occur in nature and society. In order to use foreign words correctly depends on the norms of the vocabulary of the literary language. The written language, especially the language of written translation, is strong when translating foreign words into Mongolian. We selected eight short stories to compare the possible meanings of the language expressions which used in the same topic, and to prove that the one of the possible meanings within the given context can be translated optimally. The analysis involved examining a diverse range of verbs and their contextual usage within the narratives. Through meticulous examination, researchers identified 139 verbs and their corresponding meanings within these stories. Various translation methods were employed, including word-for-word translation for non-equivalent words, literal translation for non-fully equivalent ones, and semantic translation for fully equivalent verbs. The findings shed light on the morphological and semantic aspects of these verbs and their frequency of application within the presented contextual frames. The study underscores the complexity involved in translating verbs within literary texts and highlights the importance of considering linguistic and contextual factors for accurate and nuanced translation. Overall, the research contributes valuable insights into the challenges and strategies of translating verbs in literary contexts.

Keywords: typology, polysemy, translation methods, phrasal verbs

1. Introduction

Importance of the topic. If English linguistics is viewed from a multidisciplinary perspective, one of the important issues to be studied is the question of compound or discursive idioms, which are very common in modern English. The phenomenon within this framework is related to the study of word formation, lexicography, syntax, and vocabulary. Considering this issue in parallel with similar functions in non-typical languages presents a significant opportunity to understand the essence of the phenomenon and develop translation thinking.

Translating English verbs within specific contexts involves a nuanced understanding of both the source and target languages, as well as the semantic and pragmatic elements at play. Scholars in linguistics have proposed several approaches and theories to tackle the complexities of translation, each offering insights into the process [6].

2. Theoretical overview: translating English verbs in context

1. Semantic Equivalence Theories:

Word-to-word Equivalence: This approach seeks to find direct equivalents for each word in the source language within the target language. However, it often overlooks nuances and cultural differences.

Semantic Field Equivalence: Instead of focusing solely on individual words, this approach considers the broader semantic fields in which words operate. Translators aim to convey the overall meaning rather than exact word-for-word equivalence.

2. Pragmatic Equivalence Theories:

Functional Equivalence: Emphasizes the function of language in communication. Translators prioritize conveying the intended message rather than adhering strictly to linguistic structures.

Dynamic Equivalence: Proposed by Eugene Nida, this theory suggests translating the meaning of the text rather than its form. Translators adapt the message to the target audience while maintaining its essence.

3. Contextual Equivalence Theories:

Situational Context: Understanding the specific situation in which language is used is crucial for accurate translation. Translators consider factors such as social, cultural, and temporal context.

Frame Semantics: Developed by Charles Fillmore, this theory focuses on how language is structured around "frames" or conceptual structures. Translating verbs involves considering the frame in which they occur and finding equivalents that fit the target frame.

4. Cognitive Equivalence Theories:

Cognitive Linguistics: Views language as a reflection of cognitive structures. Translators analyze how speakers of the target language conceptualize actions and events, guiding their choice of translations.

Prototype Theory: Proposes that categories are structured around prototypical examples. Translating verbs involves identifying prototypical instances and finding equivalents that match the prototype in the target language.

5. Corpus-based Approaches:

Translation Memory: Utilizes databases of previously translated texts to aid in the translation process. Translators can access similar contexts and their translations, enhancing consistency and efficiency.

Parallel Corpora Analysis: Compares translations of similar texts in different languages to identify common patterns and strategies. Translators can draw on these insights to make informed decisions.

Phrasal verbs are prevalent in modern English but are rare in some languages. For example, "up" is a multifaceted adverb that typically denotes location, direction, movement, and time.

We present the following definitions of translation from experts in the field of translation:

Newmark (1988) defines translation as expressing the message of the source text by considering the intention of the writer, suggesting it as a rendering activity related to the author's intention. He views translation as a craft in replacing the written message in one language with the same message in another language, emphasizing the need for detailed explanations to ensure that target readers understand the message as the source text readers do.

Catford (1965) defines translation as the replacement of textual material in one language (Source Language) by equivalent textual material in another language (Target Language), indicating that a translator should find the most equivalent words to replace those of one language with another. Textual materials

encompass words, phrases, sentences, language style, and grammatical structures, necessitating the translator to select the most relevant equivalents, as exemplified in the provided examples.

Mildred L. Larson (1984) asserts that translation involves a change of form, transferring the meaning of the source language into the receptor language via semantic structure, prioritizing meaning over linguistic form. According to Larson, translators should maintain the semantic meaning of the source text in the target text, allowing for changes in form and structure while preserving the original meaning.

Computer-based translation has been widely used in recent years. Computer-Assisted Translation as techniques utilizing computers to facilitate translation processes. These encompass Machine Translation (MT), Terminology Management, and Translation Memory tools, with modern services like Google Translate and Microsoft's Bing Translator enhancing multilingual content accessibility. Translation, whether human or automated, necessitates the full transfer of meaning from the source to the target language, requiring interpreters to interpret and analyze text elements beyond mere word-for-word substitution [2].

Specifically, meanings such as "located above," "going up," and "approaching" are encompassed within its dictionary definition. Consequently, it is posited that the adverb combines with the verb denoting state and movement to form a phrasal verb with a direct meaning. Let's refer to Fig.1.

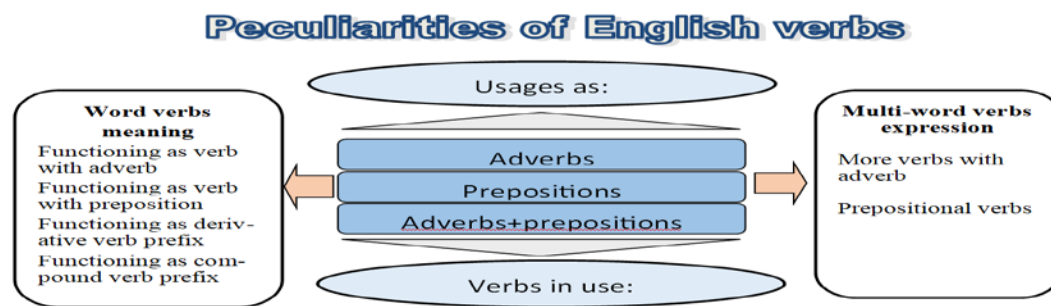


Fig. 1. Peculiarities of English verbs

Modern English phrasal verbs are formed with the assistance of main verbs and auxiliary verbs, and it is posited that there are three types of grammatical structures. Specifically,

Form 1 is utilized with object, indicating instances where the objective pronoun follows the verb. [9]

Form 2 is employed without object, signifying situations where the no objective pronoun is used after the verb.

Form 3 is employed either with or without object. In other words, there are instances where the objective pronoun is not used after the verb, as well as instances where it is used. Let's refer to Fig.2.

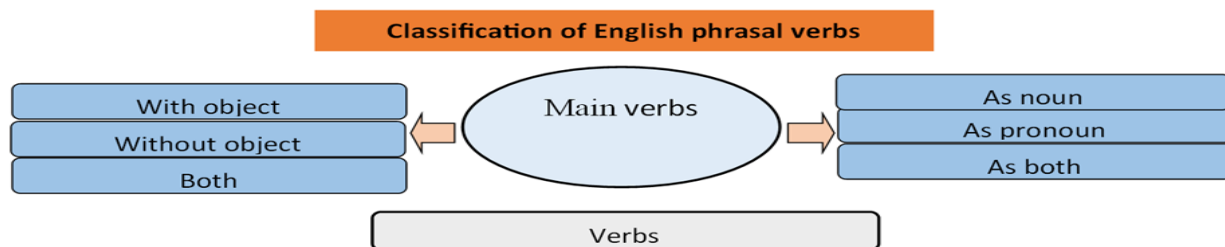


Fig. 2. Classification of English phrasal verbs

J. Enkhbold (2009) divided the auxiliary words that form idiomatic verbs into four units and classified them according to their semantic characteristics. This classification includes:

- Unit Group 1: Adverbs that express the meaning of prepositions or function as prepositions.
- Unit Group 2: Prepositions that express the meaning of adverbs or function as adverbs.
- Unit Group 3: Words capable of forming compound words when acting as single adverbs.
- Unit Group 4: Words that, when abbreviated from the function of a singular preposition, enter into the function of creating a phrasal verb.

The above shows that in terms of meaning, adverbs denote place, location, direction, movement, action, in terms of meaning, prepositions express notions of place, location, direction, movement, time, in terms of meaning, single adverbs convey ideas of place, direction, movement, time, in terms of meaning, a single preposition signifies meanings such as direction, space, and time.

Considering the grammatical structure, it is divided in the same way as the Mongolian grammatical description. For instance, the verb is utilized with a direct object e.g. a transitive verb and with an indirect object e.g. an intransitive verb. This demonstrates that the comparative study of the usage and meaning of English verbs is crucial for understanding their semantic aspects of vocabulary as well as the challenges encountered in translation. Let's refer to Fig.3.

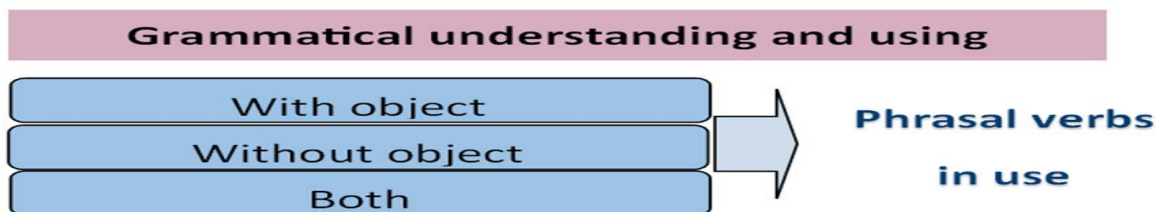


Fig.3. Grammatical understanding and using of the verbs in Mongolian.

According to the method by Natalya Vitalyevna Avdeevich (2007), there are several possible methods for investigating phrasal verbs with the particles "on/off". Her results demonstrated that her methods for applying these phrasal verbs include the following three meanings: literal (basic) meaning, semi-metaphor (semi-idiomatic) meaning, as well metaphor (idiomatic meaning).

3. Translating at the grammatical and lexical levels

The meaning of any action, as manifested in the lexical formation, encompasses both the actual event being directed to and the actual entity serving as the source of the event. The following examples demonstrate that the subject represents the source of the action and something external to it, while the object denotes one of the internal characteristics of the action (Table 1).

Table 1: Some examples of verbs and their translations

1. Examples of the verb **SAVE**.

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
аврах		Save the team	
хадгалах	Save a seat		
хэмнэх	Save time		
гамнах		Save one's voice	
хэрэглэх, нөөцлөх			Save it for later
5	2	2	1

2. Examples of the verb **LOOK**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
зохих	Look nice		
эрж хайх		Look for	
харагдах		Look happy	
сонирхох		Look just	
тэгэх бололтой		Look like	
5	1	4	0

3. Examples of the verb **TRY**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
өмсөх		Try sth on	
амсах		Try this	
гуйж үзэх			Try asking sb out
үзэх		Try one's luck	
холбогдох			To be tried for
5	0	3	2

4. Examples of the verb **STAY**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
байрлах	stay		
зогсох		Stay up	
хадгалах			Stay sb forever
байх		Stay in touch	
хандуулах		Stay tuned	
5	1	3	1

5. Examples of the verb **ORDER**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
захиалах	order		
худалдан авах		Order sth online	
тушаах	Stop ordering		
дуусах		Out of order	
байрлуулах		Put sth in order	
5	2	3	0

6. Examples of the verb **WEAR**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent

өмсөх	wear		
түрхэх		(perfume) wear	
зүүх	Wear a seat belt		
сүлжих		Wear one's hair	
хөдөлгөх			(elbow) wear
5	2	2	1

7. Examples of the verb **BREAK**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
эвдлэх	Break one's glass		
зогсоох		Break (habit)	
хийх			Break (bill)
эвдэх		Break one's record	
завсарлах	Break for lunch		
5	2	2	1

8. Examples of the verb **USE**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
хэрэглэх	Easy to use		
ашиглах		Use sb	
болох		Use a shower	
ажиллуулах		Use one's head	
4	1	3	0

9. Examples of the verb **COME**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
харих	Come home		
ирэх	Come (time) in		
арчих			Come clean
өнгөрөөх		Easy come easy go.	
гарах		(album) come out	
5	2	2	1

10. Examples of the verb **TAKE**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
явах		Take sb to (airport)	
өгөх		Take sb out to sth	
авчрах		Take (credit cards)	
тайлах	Take off (shoes)		
үзэх		Take it out on sb	
5	1	4	0

11. Examples of the verb **LOSE**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
хаях	lose weight		
болох		Lose one's voice	
болох		Lose interest in sb	
хожигдох	Lose the game		
алдах	Lose one's mind		
5	3	2	0

12. Examples of the verb **WRITE**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
зохиох	Write (song)		
бичиж авах		Write for TV	
авах	Write down		
огдох		Write sb(prescription)	
бичих	Write sb back		
5	3	2	0

13. Examples of the verb **RETURN**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
огдох	Return sth		
давтах		Return one's call	
ирэх	return		
буцаах		Return (refund)	
4	2	2	0

14. Examples of the verb **CHECK**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
оруулах	Check one's car		
шалгуулах	Check one's bags		
үзүүлэх		(Have heart)checked	
шалгах	Check!		
үзлэг хийх		Check out	
5	3	2	0

15. Examples of the verb **KEEP**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
хадгалах		Keep it up!	
байлгах			Keep (change)
байх		Keep fit	
үргэлжлүүлэх		Keep the left	
нууцлах	Keep secret		
5	1	3	1

16. Examples of the verb **FALL**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
нурах	(Watch out) fall sth		
орох	(snow) fall		
буурах	(price) fall		
унах	Fall down		
дурлах	Fall in love		
5	5	0	0

17. Examples of the verb **FIND**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
олох	Find (earrings)		

авах	find		
байх		Find time	
мэдэх		Find (lost it)	
мэдрэх		Find one's kissing	
5	2	3	0

18. Examples of the verb **GIVE**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
өгөх	Give sb (chance)		
туслах		Give a hand	
заах		Give sb (direction)	
хүрэх		Give sb (one's cold)	
харах		Give sb (sad look)	
5	1	4	0

19. Examples of the verb **ASK**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
асуух	Ask sb out		
гаргах	Ask for (raise)		
шалгаах	Ask sb (why)		
өгөх	Ask around		
болох		Ask for trouble	
5	4	1	0

20. Examples of the verb **READ**

Meanings (in Mongolian)	Fully equivalent	Not fully equivalent	Non equivalent
унших	Read one's writing		
шинжих		Read one's palm	
ойлгох		Read (music)	
харах		Read one's mind	
4	1	3	0

Each example showcased different meanings and usage of verbs, revealing their diverse linguistic characteristics. Through meticulous examination, it was observed that certain verbs exhibited fully equivalent meanings, while others displayed partial equivalence or lacked equivalence entirely. The analysis encompassed verbs such as "save," "look," "try," "stay," "order," "wear," "break," "use," "come," "take," "lose," "write," "return," "check," "keep," "fall," "find," "give," and "ask," among others. These examples highlighted the complexities involved in translating verbs across different linguistic contexts. The findings underscored the importance of considering semantic nuances and contextual factors when translating verbs, especially within literary narratives.

3. Vocabulary-semantic level application

Note: N.A.Bonk, N.A. Lukyanova, and L.G. Pamukhina (1985) analyzed the usage of certain English verbs in literary language, selected from Book II of the "English Textbook."

Short story № 1 “ John Reed’s biography” Albert Rhys Williams: 1 Take after; 2 Show +indirect obj.+ direct obj +forward

Short story № 2 “Mistaken Identity” Mark Twain : 3 to put up with ; 4 come forward; 5 move along

Short story № 3 “The Creative Impulse I,II” W.S. Maugham: 6 to make fun of pronoun ; 7 from time to time; 8 at the sight of (noun); 9 put on one’s something; 10 stand, tired of something; 11 be pleased with somebody; 12 was broken by, get (pronoun) back; 13 cried out; 14 care about something; 15 For my art’s sake; 16 putting aside something; 17 sit down, pushing something forward; 18 sitting down ; 19 be (not) angry with (pronoun); 20 live with (prounoun); 21 in your own way; 22 take off something; 23 burst out laughing; 24 kept his mouth shut; 25 what a gulf separates us; 26 take you back home; 27 no longer; 28 pulled up, she got in; 29 looked up

Short story № 4 “He over did it” O. Henry 30 make up her mind, to get out 31 Keep you waiting so long 32 to get hold of him 33 go out 34 Give a laugh 35 at the height of 36 turned down, set foot on 37 bring up 38 find out 39 look around 40 turned red 41 Fetch me a glass of 42 Grown up 43 Looking straight into 44 To sit down 45 Went away down/ Come back 46 Come round 47 Went up 48 Sent up 49 Was shown up

Short story №4 “A Future Businessman” Theodore Dreiser 50 Leading up 51 Dealt with 52 Took an interest in 53 Was also interested in 54 Grew up 55 Taken much notice of 56 To come down to 57 (be) interested in 58 Took an increasing interest in 59 Keep in touch with 60 To get out 61 Do any harm 62 Help (you) get a start in business /Work with/ Get a good training/Keep your health

Short story №5 “The Serenade I,II” G. Bernard Shaw 63 By putting on 64 Blow the horn 65 Gave (him) in one’s eyes 66 To break up 67 I’m going behind 68 lived on it for 69 The play’s over 70 Turned up 71 Mixed up 72 Ran back to 73 Took up 74 Press my hands/Came out/Looked at 75 A word of complaint 76 In private 77 Thinking of 78 Stared at/ Gave in 79 Situated at/ To let me into 80 Took up my horn 81 Looking up at them 82 Looked out/Took out 83 Came towards me with 84 Came out of 85 Held out 86 Got into a taxi 87 To make fun of it/Produce such sounds/Have only one more word to say/Have the pleasure of meeting 88 Gave it up

Short story №6 “On the Way to the Freedom “ Harriet Beecher- Stowe 89 Took out 90 Worked for 91 Makes money/Had a chance 92 Walked up/Turning with 93 Running away 94 Coming up/Sitting down 95 Give her up 96 Hold up your head 97 Made his way out of the room

Short story №7 “A Custom House Incident “ Nigel Balchin 98 Passing down 99 Got off 100 Gone up 101 Looked at 102 Kept on/Taking notice of 103 Look forward to travelling/Went along 104 Get Miss Bradley through 105 Took my cases off 106 To look for him 107 To make my acquaintance

Short story №8 “The Last Leaf “ O.Henry 108 Suitable for 109 To pick out 110 Made her mind 111 Went out into the hall 112 Walked gaily back into the room 113 Looking out of 114 Climbed half way up 115 Keep up with them 116 Bending over her 117 Keep your eyes closed 118 To go sailing down 119 Keep her from looking/Cried out 120 To come into her head 121 Walked towards/ With her chin in the air 122 Looked out of 123 Woke up 124 Beating against

Short story №9 “A Cup of Tea” Katherine Mansfield 125 Come out of 126 Stepped forward 127 Laughed out 128 Pulling her big chair up 129 Taken off 130 Help you off with 131 Stood up/Held on 132 To get up 133 Went out of 134 Picked her up 135 Look after her 136 Went out of 137 Went to/Sat down 138 Put down the paper 139 Came over/Sat down on

In Study Area No. 2, N.A. Bonk, N.A. Lukyanova, and L.G. Pamukhina (1985) conducted an analysis of the usage of certain English verbs in literary language, selected from Book II of the "English Textbook." The study encompassed a wide array of short stories, each presenting a unique set of verbs and contexts. Through meticulous examination, they identified numerous verbs and their corresponding meanings within the narratives. These included actions such as "take after," "put up with," "make fun of," and many more, totaling 139 verbs. The research employed various translation methods, including word-for-word translation for non-equivalent words, literal translation for non-fully equivalent words, and semantic translation for fully equivalent ones. The findings shed light on the morphological and semantic aspects of these verbs and their frequency of application within contextual frames presented in the short stories.

4. Conclusion

In Study Area No. 2, an analysis was conducted on the usage of certain English verbs in literary language, selected from Book II of the "English Textbook." This study examined a variety of short stories, each showcasing different verbs and contexts. After thorough examination, numerous verbs and their meanings within the narratives were identified. These verbs included actions like "take after," "put up with," and "make fun of," amounting to a total of 139 verbs. The research utilized diverse translation methods, such as word-for-word translation for non-equivalent words, literal translation for non-fully equivalent ones, and semantic translation for fully equivalent verbs. The findings provided insights into the morphological and semantic aspects of these verbs and their frequency of occurrence within the presented contextual frames. This comprehensive analysis highlights the challenges involved in translating verbs within literary texts and emphasizes the significance of considering linguistic and contextual factors for precise and nuanced translation.

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BOOK

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BTOT-04

Vegetable Import Survey. / On the example of potato cultivation/

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Abstract- Our country has a large area that can be used for agriculture, but due to economic reasons, we cannot fully meet our domestic needs, so we meet our domestic needs through imports.

The amount of potato imports reached its highest level in 2015 at 17,058.9 tons, and the amount of imports decreased until 2021, indicating that domestic producers have the opportunity to fully meet the import of potatoes in the future.

The price of 1 ton of potatoes was the highest in 2014, 5.36 thousand US dollars, and many factors such as the domestic inflation rate and the exchange rate affect the price of imports.

Key words-domestic needs, import, potato price, gross domestic product

Potato cultivation.

The total amount harvested by domestic potato farmers in Mongolia has decreased from 2012 in 2013, 2014, 2015, 2016, 2017 and 2018, and has increased in 2020 and 2022.

Table 1. Total harvest / tons /

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Potato	245,934.9	191,619.2	161,488.5	163,766.8	165,329.5	121,808.4	168,882.6	192,239.9	244,261.60	182,638.2	214,005.3

Year	2012	2013	2014	2015	2016	2017
Potato. tons	245,934.9	191,619.2	161,488.5	163,766.8	165,329.5	121,808.4
Year	2018	2019	2020	2021	2022	
Potato. tons	168,882.6	192,239.9	244,261.60	182,638.2	214,005.3	

It can be seen that the harvest of 1 hectare of potato field is different during the periods, and the agricultural production is largely dependent on unfavorable weather conditions. Table 2. Harvested potato from 1 hectare /tons/

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Potato	123.6	122.3	127.5	110	80.4	130.7	128.7	128.4	85.3	101.8

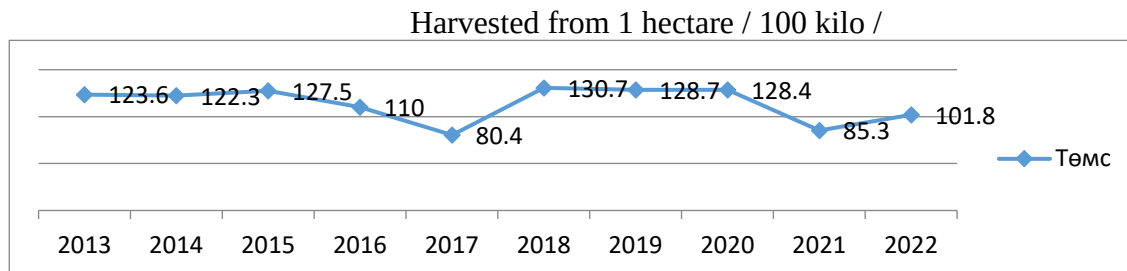


Figure 1. Harvest per hectare

Our country has a large area that can be used for agriculture, but due to economic reasons, we cannot fully meet our domestic needs, so we meet our domestic needs through imports. Table 3. Import of potatoes /tons/

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Potato (tons)	3,162.40	32	5,409.50	17,058.90	656	441.44	2,892	385	8.9	100.9

The amount of potato imports reached its highest level in 2015 at 17,058.9 tons, and the amount of imports decreased until 2021, indicating that domestic producers have the opportunity to fully meet the import of potatoes in the future.

Table 4. Price of potatoes /thousand USD/

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Potato	866.1	10.5	1,008.3	3,468.2	215.2	109.9	568.1	79.5	2.0	110.4

The import of potatoes was the highest in 2015, and by the end of the period, it had increased by 458.2 thousand US dollars in 2018. It is believed that this is due to the decrease in the production of farmers due to the epidemic.

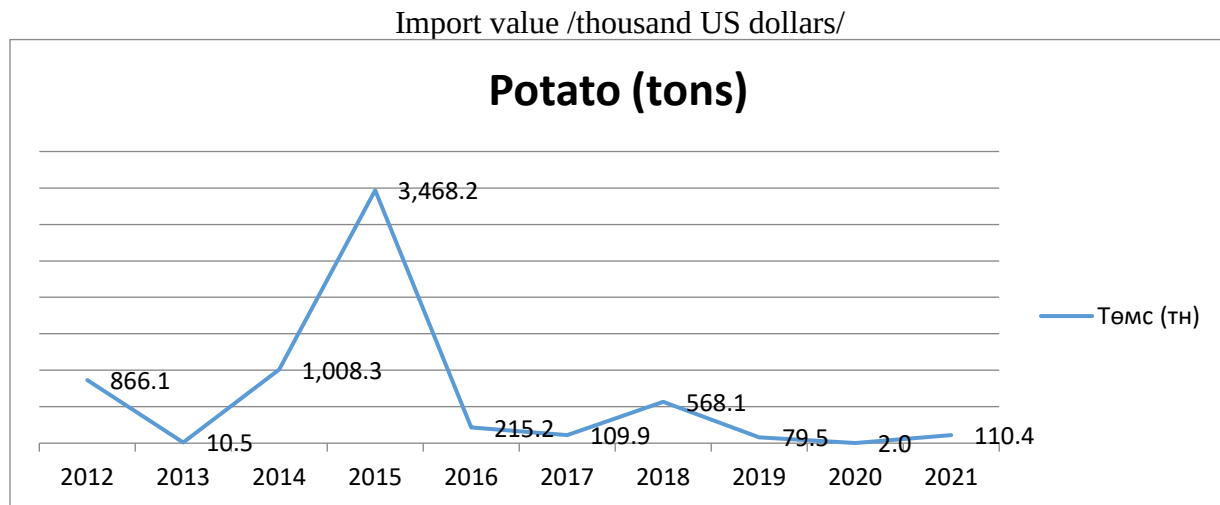


Figure 2. Steel import price / /thousand USD/

It can be seen from the figure that the value of imports changes directly in relation to the volume of imports.

Table 5. Potato prices. /1 ton/thousand USD/

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Price of potato	3.65	3.05	5.36	4.92	3.05	4.02	5.09	4.84	4.45	0.91

The price of 1 ton of potatoes was the highest in 2014, 5.36 thousand US dollars, and many factors such as the domestic inflation rate and the exchange rate affect the price of imports.

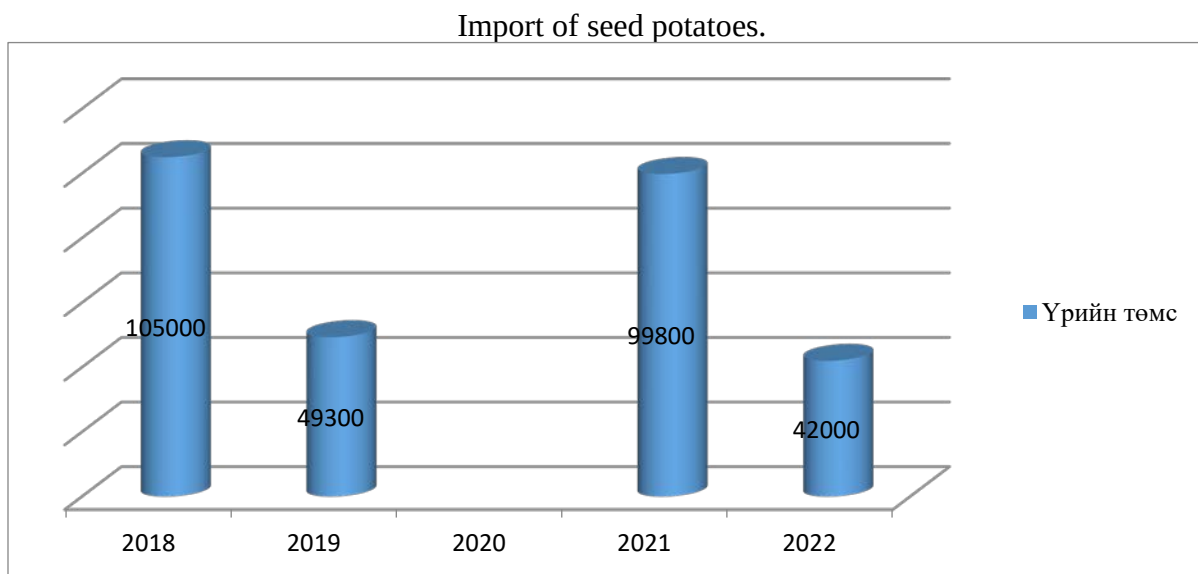
The import price of potatoes in 2021 is the lowest at 0.91 thousand US dollars, which shows that our farmers can meet their domestic needs for potatoes.

Table 6. Import of potatoes. /in kind, USD/

		2018		2019		2020		2021		2022	
		amount	price	amount	price	amount	price	amount	price	amount	price
Potato	kg	2891960,6	568	385037	79,5	8900	2	100925	110	431636	144
Seed potato	kg	105000	89,1	49300	24,3			99800	108	42000	46

Since 2018, the import of potatoes has been decreasing in our country, due to the fact that there is enough potato production in our country to meet its needs. Also, the import price of potatoes in 2022 decreased by 424 USD from 2018.

Imports of seed potatoes decreased by 55,700 kilograms in 2019 from the previous year, and by 57,800 kilograms in 2022 from the previous year, which shows that the domestic seed needs can be fully met in the future.



The effect of price and inflation on potato import volume was determined by Data-Analysis program.

Table 7. Potato prices, inflation rate, imports

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Price of potato	3.65	3.05	5.36	4.92	3.05	4.02	5.09	4.84	4.45	0.91
Level of inflation	12.5	10.4	1.9	1.3	6.4	8.1	5.2	2.3	13.8	13.2
Import of potato (tons)	3162.4	32	5410	17058.9	656	441.44	2892	385	8.9	100.9

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.568345
R Square	0.323017
Adjusted R Square	0.129593
Standard Error	4902.668
Observations	10

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	80280442	40140221	1.669994	0.255284
Residual	7	1.68E+08	24036152		

Total 9 2.49E+08

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	6024.714	9100.835	0.661996	0.529157	-15495.3	27544.7702
X1	304.3021	1618.669	0.187995	0.856214	-3523.24	4131.847129
X2	-560.204	450.6844	-1.24301	0.253882	-1625.9	505.4948736

RESIDUAL OUTPUT

<i>Observation</i>	<i>Predicted Y</i>	<i>Residuals</i>	<i>Standard Residuals</i>
1	132.8626	3029.537	0.700674
2	1126.71	-1094.71	-0.25319
3	6591.385	-1181.89	-0.27335
4	6793.615	10265.29	2.374164
5	3367.528	-2711.53	-0.62712
6	2710.353	-2268.91	-0.52476
7	4660.549	-1768.55	-0.40903
8	6209.066	-5824.07	-1.347
9	-351.961	360.8613	0.08346
10	-1093.07	1193.968	0.276142

PROBABILITY OUTPUT

<i>Percentile</i>	<i>Y</i>
5	8.9
15	32
25	100.9
35	385
45	441.44
55	656
65	2892
75	3162.4
85	5409.5
95	17058.9

The following equation was derived from the study of various factors affecting potato imports.

$$Y = 304.3X_1 - 560.2X_2$$

The coefficient before the X2 variable in the equation has a negative sign, which indicates that there are many other factors that affect the amount of imports and it is necessary to fully include them in the study.

Conclusion.

The total area planted with potatoes in our country has increased steadily until 2017, and decreased in 2018 and 2019. In 2020, it reached an all-time high of 899,129 ha, and in 2021, it decreased to 573,626 ha, and in 2022, it decreased to 493,754 ha, which were the lowest planting years of the entire period.

In terms of potato import, it was the highest in 2015, and by the end of the period, in 2018, it increased by 458.2 thousand US dollars from the previous year. It is believed that this is due to the decrease in the production of farmers due to the epidemic.

Our country has a large area that can be cultivated, but due to several economic reasons, we cannot fully meet our domestic needs, so we meet our domestic needs through imports.

The following equation was derived from the study of various factors affecting potato imports.

$$Y = 304.3X_1 - 560.2X_2$$

The coefficient of X2 variable in the equation has a negative sign, which indicates that many other factors that affect the amount of imports need to be fully included in the study.

Suggestion .

- Financial support is needed for the potato cultivation project. It includes:
- Government subsidies
- Provide tax relief
- Inclusion in projects and programs to increase farmer cooperatives
- Giving grants and preferential treatment to holdings participating in public procurement.
- Building cellars that meet standard requirements and implementing projects
- Increase breeding
- Government to take other measures to support import substitution projects.
- Targeted loan coverage
- Increasing the financing of enterprises in the pre-production phase
- Take special measures to promote import substitution through government/municipal procurement.
- Increase irrigated agriculture

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SSBA-05

Exercise rehabilitation sports ODA for Mongolian sports universities Business satisfaction survey

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Abstract- 몽골의 운동재활 산업은 아직 초기 개발 단계에 있고 운동재활산업은 현재 활발하게 성장하고 있는 분야이며, 스포츠 부상 예방 및 치료, 체력 향상 및 운동선수들의 성과 지원에서 운동재활의 중요성에 대한 인식이 높아지고 있다. 또한 몽골의 스포츠재활과학산업 및 운동재활산업은 활발하게 성장하고 있는 분야이며, 자국민의 건강한 삶의 질 제고 및 운동 선수들의 성과 지원을 위해 운동재활의 중요성에 대한 인식이 높아지고 있다. 따라서, 본 연구의 구체적인 목적은 다음과 같다. 먼저 몽골의 운동재활분야의 현황을 살펴보고, 몽골의 운동재활의 문제점을 검토하여 이를 바탕으로 몽골 운동재활 교육프로그램의 요인을 도출할 것이다. 둘째, 몽골운동재활 교육프로그램 요인(바른 체형프로그램, 카이로프랙틱, 재활트레이닝, 부상방지 재활 프로그램)을 바탕으로 만족도 조사를 실시할 것이다. 셋째, 몽골 운동재활교육의 만족도 조사를 바탕으로 교육기대효과 및 향후 시사점을 제공할 것이다.

I. 서론

2018 평창 동계올림픽 개최를 기점으로 한국은 스포츠 메가이벤트로 불리는 하계/동계 올림픽, 월드컵, 육상선수권대회를 모두 개최한 경험을 가진 국가로 발돋움하였다(연합뉴스, 2017년 9월). 이와 함께 스포츠 공적개발원조(Official Development Assistance, ODA)를 꾸준히추진해왔다. 구체적으로 1972년 태권도 사범 파견 사업을 시작으로 종목별 지도자 파견, 개도국 선수 및 지도자 초청 훈련, 스포츠 시설 및 용품 지원 등 단기 또는 단발성 사업을 시행해왔다(노용구 외, 2016). 빈곤 감소 등 경제 사회 발전에 집중해왔던 ODA는 발전뿐 아니라, 이를 위한 지속가능성을 확보하는 것을 강조하고 있다. UN은 2000년도에 인류 발전을 위한 과제로 새천년개발목표(Millennium Development Goals, MDGs)를 제시한 후 2015년 지속 가능한 개발목표(Sustainable Development Goals, SDGs)를 제시하였다. 지속 가능한 개발을위한 국제개발협력사업을 위해서는 사업성과 평가를 통해 결과의 지속가능성을 촉진하거나 저해하는 요인을 밝히는 것이 중요하다. 스포츠 ODA의 연수사업 역시도 이러한 지속가능성을확보할 수 있는지가 중요한 현안으로 떠오르고 있으며, 이에 대한 평가에 대한 필요성 역시 높아지고 있다(강지현 · 권기성, 2018). 한국은 세계

최초로 원조 수원국에서 공여국으로 발전하여, 개도국으로부터 개발 노하우를 전수 받기 위한 교육 수요가 증가하고 있다. 특히, 스포츠 강국으로 알려진 우리나라는 저개발된 환경으로 역량개발 기회를 누리지 못하는 개발도상국의 우수한 스포츠 인재들을 국내로 초청하는 초청연수형 스포츠 ODA사업인 “개도국 스포츠 발전지원(dream together)” 사업을 도입하였다. 이는 개도국 스포츠 인적자원들이 한국의 스포츠 분야 발전 노하우를 경험하고, 자국스포츠 발전에 기여하도록 하는 전략으로 추진되어 왔다. 그러나, 대규모의 예산이 투입되고, 다년간 많은 개도국 연수생이 배출되었음에도 불구하고, 아직까지 궁극적인 ODA사업으로서 어떤 개발성과를 이루어 냈는지에 대한 연구가 이루어지지 않았다. 또한, 대내·외적으로 ODA 사업의 성과관리에 대한 요구가 증가함에 따라, 한국의 초청연수형 스포츠 ODA사업 역시 정례화된 성과관리체계 구축의 필요성이 제기되었다. 따라서 한국 스포츠 전문가들의 현지에 가서 정기적으로 소통하며, 기술과 정보들을 교류하여 지속가능한 운동재활 사업의 발전의 기반과 토대를 마련하는 것이 중요하다.

2. 스포츠 ODA(Official Development Assistance)사업

우리나라의 비약적인 발전은 국제사회의 도움이 있었기에 가능했다. 우리나라는 한국전쟁 직후 국민소득 67달러의 세계 최빈국이었다. 1945년 해방 이후 90년대 후반까지 국제사회로부터 받은 원조액은 127억 달러로 현재가치로 환산하면 약 600억 달러, 70조 원이 넘는 금액이다. 유·무상 합해 미국·일본(전부 보상금)으로부터 각각 55억 달러와 50억 달러를 받았으며, 한국민간구호계획(Civil Relief In Korea, CRIK), 유엔한국재건단(United Nations Korean Reconstruction Agency, UNKRA) 등 유엔기구들로부터도 총 10억 달러를 지원받았다. 그 당시의 미국과 일본을 비롯한 선진국들로부터의 막대한 무상원조들은 한국이 경제부흥을 이루는데 큰 역할을 했으며, 장충체육관이나 세종문화회관, 경부고속도로건설이 이러한 원조들이 있었기에 가능했다. 이러한 지원을 통해 한국은 반세기여 만에 국민소득 3만 달러의 경제대국으로 도약할 수 있었던 것이다.

한국은 세계 최초로 받는 나라(수원국)에서 주는(공여국) 나라가 되었다. 그동안의 국제사회의 도움에 보답하는 동시에 국가 위상에 걸맞게 지구촌 문제해결에 적극적으로 동참할 필요가 있다. 한국은 20세기 대외원조의 대표적인 성공사례이자, 21세기 개도국이 가장 선호하는 발전 모델 중 하나이다(국제협력위원회, 2010). 이미 많은 개도국들이 한국의 개발경험을 배우고 싶어 하고 있으며, 세계적인 석학들 또한 한국의 발전경험이 개발도상국들의 본보기가 될 수 있다고 평가하고 있다.

3. 운동재활사업의 선행연구

국제사회의 흐름에 맞추어 대한민국도 공적개발원조에 있어서 스포츠를 활용하는 방안을 고심할 필요가 있음에도 불구하고, 공적개발원조에 있어 스포츠의 도구적 활용에 대한 국내 연구는 극히 소수만 존재하고 있다. 공적개발원조와 관련된 스포츠분야의 연구에서는 공적개발원조를 바탕으로 스포츠외교력 강화와 관련된 연구(강동원·이충영, 2002)가 몇 편 출판되어 있을 뿐이다. 특히 스포츠와 체육은 개발도상국의 교육과 신체건강이라는 두 가지 목적을 동시에

달성할 수 있는 유용한 도구이며(김범식·이정우, 2009), 실현할 수 있는 유용한 수단일 수 있음에도 불구하고, 이에 대한 연구는 부족한 실정이다. 이런 이유로 대한민국은 수년 전부터 스포츠와 관련하여 개발도상국을 지원하고 있지만, 이와 관련된 충분한 평가가 이루어지고 있지 않다.

따라서 운동재활 및 스포츠사업 선행연구는 다음과 같다.

김범식·이정우(2009)의 스포츠 공적개발원조 사업의 활성화를 통한 한국 스포츠외교력 강화 방안 연구에서는 스포츠를 활용한 공적개발원조 사업의 활성화를 통하여 한국의 스포츠외교력을 강화하는 방법을 모색하고자 하였다. 이를 위해 우선 UN이 설정한 새천년 개발목표의 내용과 이를 이룩하는 데 있어서 스포츠의 역할을 살펴보았다. 아울러 이 연구에서는 호주, 캐나다 그리고 영국 등의 국가에서 실시하고 있는 스포츠를 통한 국제개발 프로그램을 검토해 보았고, 이를 근거로 한국에서 현재 진행 중인 스포츠를 매개로 한 개도국 지원사업의 문제점과 그대안점을 찾고자 노력하였다. 이 연구에서 한국은 경제력이나 스포츠 경기력에 비해 스포츠를 이용한 공적개발원조 활동이 현저히 낮으며, 이를 보완하기 위해 스포츠를 활용한 국제개발 사업에 보다 적극적인 동참이 필요하다고 하였으며, 또한 이러한 사업은 당장의 국익에 우선하여 실시하기보다는 인류의 보편적인 가치에 근거하여 진행되어야 하며, 그리고 스포츠를 통한 국제개발 사업의 활발한 참여를 통하여 국제스포츠사회에서 한국의 위상을 높아야 한다는 방안을 제시하였다.

III. 연구설계

먼저 경남 마산대학교에서 실시한 “몽골의 운동재활사업 전문인력 양성 사업”의 교육프로그램에 필요한 교육특성요인을 선정하기 위한 수요조사를 실시하여 4개의 교육과목을 선정하였다. 몽골운동재활교육 프로그램 교육특성요인은 스포츠선수 재활운동(카이로프락틱, 부상방지 재활 프로그램) 및 일반인 재활운동(재활트레이닝, 바른 체형프로그램) 등이다. 그리고 이 4개의 교육특성요인을 바탕으로 몽골운동재활교육 만족도 조사를 실시하였다.

연구대상자는 몽골 현지에서 운동재활교육프로그램에 참여한 몽골사범국립대학교의 체육대학 교수진 및 학생들 33명을 대상으로 하였다. 운동재활 교육프로그램 기간은 2023년 7월 22일에서 7월 25일 사이에 4일간 진행하였다.

몽골의 운동재활산업 전문인력 양성사업을 실시하기 위한 준비자료로 먼저 몽골 현지 관계자들의 운동재활에 대한 인지도 및 경험에 대한 수요조사를 실시하였다. 조사기간은 2023년 4월 1일에서 2023년 4월 7일 사이에 7일간 온라인 형태로 설문지를 배부를 하였으며, 총 112명이 참여하였다. 분석방법은 SPSS.26 프로그램을 사용하여 기술통계분석을 실시하였다.

IV. 실증분석

몽골 현지 관계자들의 운동재활에 대한 인지도 및 경험에 대한 분석결과(<표 4>)에서 먼저 “운동재활에 대해 알고 있습니까?”의 응답은 ‘네’ 82명(73.2%)과 ‘아니오’ 30명(26.8%)으로 나타났다. 또한 “운동재활에 참여한 경험이 있습니까?”의 응답은 ‘네’ 76명(67.9%)과 ‘아니오’ 36명(32.1%)으로 나타났다. “운동재활에 참여한 경험이 있다면 어떤 경험이 있습니까?”의 응답으로 관계자들에게 복수응답하기로 했으며, 총 112명 응답 중 운동상해(부상치료)는 32명(24.4%), 트레이닝 30명(23.1%), 교육 30명(23.1%)이 제일 높은 것으로 나타났으며, 건강관리

(컨디셔닝) 14명(11.2%), 체형교정 10명(9.1%)으로 나타났다.

그 다음으로 “몽골내에서 운동재활의 분야에서 관심 있는 분야는 무엇입니까?”를 복수응답으로 했으며, 총 236명 응답 중 ‘스포츠선수 대상의 운동 재활’이 66명(28.0%)과 ‘일반인 대상의 운동재활’이 70명(29.7%)으로 제일 높게 나타났으며, 그 다음으로 ‘노인 대상의 운동재활’이 46명(19.5%)과 ‘장애인 대상의 운동 재활’이 52명(22.0%)으로 나타났다.

“몽골의 운동 재활의 수준이 어느 정도라고 생각합니까?”의 ‘보통이다’ 46명(41.1%), ‘매우 낮음’ 30명(26.8%)과 낮음 28명(25.0%)으로 나타났다. 또한 “몽골에서 운동재활의 중요도가 어느 정도라고 생각합니까?”의 ‘매우 중요함’ 100명(89.3%)으로 나타났다. “몽골에서 운동재활 서비스 사업의 미래 전망이 어떠하다고 생각합니까?”의 ‘좋음’ 52명(46.4%)과 ‘매우 좋음’ 44명(39.3%)으로 나타났다(<표 5> 참조).

다음으로 “한국의 운동재활에 대한 수준이 어느 정도라고 생각합니까?”의 ‘매우 높음’ 56명(50.0%)과 ‘높음’ 42명(37.5%)이 제일 높게 나타났다. 또한 “한국으로부터 운동재활 교육을 실시한다면 어느 분야가 좋다고 생각합니까?”는 복수응답으로 했으며, 총 252명 응답 중 ‘스포츠선수 대상의 운동 재활’ 66명(26.2%)과 ‘일반인 대상의 운동재활’ 78명(31.0%)으로 제일 높게 나타났다. 그리고 “한국으로부터 운동 재활 교육을 실시한다면 참여할 의사가 어느 정도입니까?”의 ‘적극참여’ 74명(66.1%)과 ‘참여’ 26명(23.2%)은 제일 높게 나타났다.

2) 기술통계분석 결과

먼저 체형진단방법 및 교정 강의의 총 평균값은 $M=4.49$ 로 나타났다. 순위로는 “본 강의의 강사에 만족합니까” 문항의 평균값이 $M=4.76$ 으로 제일 높게 나타났으며, 그 다음으로 “본 강의는 귀하의 향후 및 현 직업에 효과가 있을 것이라고 생각합니까?”와 “강의의 이론 및 실습, 장소나 시설 등 전체적으로 다 만족합니까?” 문항의 평균값이 $M=4.70$ 으로 나타났으며, 이는 참여자들이 강의에 대한 만족도가 높은 것으로 보인다. 그리고 이 강의 듣기 전에 체형진단방법 및 교정에 관련 알고 있었습니까? 라는 문항이 평균값이 $M=3.48$ 으로 나타나 참여자는 전에 체형관련 내용을 어느 정도 알고 있는 것으로 판단된다.

다음으로 카이로프랙틱 강의의 평균값은 $M=4.49$ 로 나타났다. 순위로는 “본 강의의 강사에 만족합니까” 문항의 평균값이 $M=4.78$ 로 제일 높게 나타났으며, 그 다음으로 “본 강의는 귀하의 향후 및 현 직업능력 활성화에 도움이 될 것이라고 생각합니까?”와 “본 강의는 귀하의 향후 및 현 직업에 효과가 있을 것이라고 생각합니까?” 문항의 평균값이 $M=4.75$ 로 나타났으며, 이는 참여자들이 강의에 대한 만족도가 높은 것으로 보인다. 그리고 이 강의 듣기 전에 카이로프랙틱에 관련 알고 있었습니까? 라는 문항이 평균값이 $M=2.68$ 로 나타나 참여자는 전에 카이로프랙틱 관련 내용을 잘 모르는 것으로 판단된다.

재활트레이닝 강의의 평균값은 $M=4.51$ 로 나타났다. 순위로는 “본 강의는 귀하의 향후 및 현 직업능력 활성화에 도움이 될 것이라고 생각합니까?”와 “본 강의는 귀하의 향후 및 현 직업에 효과가 있을 것이라고 생각합니까?” 등 문항의 평균값이 $M=4.68$ 로 제일 높게 나타났다. 그 다음으로 “본 강의에서 배운 것을 향후 사용할 의향이 있습니까?”와 “본 강의는 귀하의 향후 및 현 직업에 효과가 있을 것이라고 생각합니까?” 문항의 평균값이 $M=4.65$ 로 나타났으며, 이는 참여자들이 강의에 대한 만족도가 높은 것으로 보인다. 그리고 이 강의 듣기 전에 스포츠태핑에 관련

알고 있었습니까? 라는 문항이 평균값이 $M=3.68$ 로 나타나, 참여자는 전에 스포츠태핑 관련 내용을 어느 정도 알고 있는 것으로 판단된다.

부상방지 강의 평균값은 $M=4.64$ 로 나타났다. 순위로는 “강의 이론 및 이론적 내용에 만족함

니까?”, “본 강의는 귀하의 향후 및 현 직업에 효과가 있을 것이라고 생각합니까?”와 “강의의 이론 및 실습, 장소나 시설 등 전체적으로 다 만족합니까?” 등 문항의 평균값이 M=4.80으로 각각 제일 높게 나타났다. 그 다음으로 “강의 실습 내용에 만족합니까?”, “강의 전체적인 내용에 만족합니까?”, “강의 장소나 시설에 만족합니까?”, “본 강의에서 배운 것을 향후 사용할 의향이 있습니까?”와 “본 강의는 귀하의 향후 및 현 직업능력 활성화에 도움이 될 것이라고 생각합니까?” 문항의 평균값이 M=4.76으로 나타났으며, 이는 참여자들이 강의에 대한 만족도가 높은 것으로 보인다. 그리고 이 강의 듣기 전에 부상방지에 관련 알고 있었습니까? 라는 문항이 평균값이 M=3.40으로 나타나, 참여자는 전에 부상방지 관련 내용을 어느 정도 알고 있는 것으로 판단된다.

3) 운동재활교육 프로그램의 만족도조사의 결과 및 토론

본 조사는 몽골 사범국립대학교 체육대학교의 교수진 및 학생들 33명을 대상으로 14개의 문항으로 각각 4개의 운동재활교육 프로그램의 만족도분석을 실시하였다. 분석결과, 학생 17명, 교수 12명, 기타 4명으로 교육에 참여하였으며, 연령은 20세 이하랑 20~30세가 대부분였다. 운동재활교육프로그램 과목별로 만족도를 분석하였으며, 먼저 바른 체형프로그램과 카이로프락틱 강의의 총 만족도는 5점 척도에서 4.49로 비슷하게 높게 나타났다. 두 과목 모두 11개 항목 중에서 강사의 만족도가 제일 높게 나타났다. 이러한 결과는 강사의 전문 지식과 강의 PPT와 실습 준비성 등 한국강사에 대한 여러 요소들에 대한 좋은 이미지를 받은 것으로 보인다. 또한 두 과목 모두 향후 및 현 직업에 효과가 클 것이라고 나타났으며, 또한 직업능력 활성화에도 큰 도움이 될 것이라고 나타났다. 이러한 결과는 참여자 모두 현재 및 향후에도 체육 및 스포츠 관련 직업을 할 거라서 두 과목내용이 큰 도움이 될 것이라고 믿는 것으로 보인다. 또한 바른 체형프로그램 관련 내용을 참여자들이 어느 정도는 알고 있었지만 카이로프락틱에 대한 내용을 잘 모르는 것으로 나타났다.

그 다음으로 재활트레이닝 교육에 대한 결과를 보면 본 교육은 향후 및 현 직업능력 활성화와 직업효과에 큰 도움 될 것인가가 제일 높게 나타났다. 이는 재활트레이닝 과목은 운동선수나 체육학생들에게 매우 필요한 교육프로그램 중 하나이며, 참여자들 또한 이 과목에 대한 중요성을 매우 높게 인식하는 것으로 보인다. 또한 재활트레이닝에 대한 어느 정도 알고 있는 것으로 나타났다. 마지막으로, 부상방지 교육에 대한 결과를 보면 다른 교육에 비하면 높은 만족도를 보였으며, 강의 이론 및 이론적 내용에 매우 높은 만족도를 보였다. 이 또한 운동선수나 체육대학 학생들에게는 매우 중요한 교육 중 하나이며, 몽골 대학생들 또한 부상방지에 대한 높은 중요도를 인지하고 있는 것으로 보인다.

V. 결론

본 연구는 먼저 몽골의 운동재활분야의 현황을 살펴보았으며, 몽골의 운동재활의 문제점과 필요성을 검토하여 이를 바탕으로 몽골 운동재활사업교육의 프로그램요인을 도출하였다. 그리고 몽골 사범국립대학교 체육대학 교수진 및 학생 33명을 대상으로 몽골운동재활교육 프로그램(카이로프락틱, 재활 트레이닝, 부상방지 재활 프로그램, 바른 체형프로그램)을 진행하였으며, 만족도조사를 실시하였다.

본 연구의 분석결과, 시사점은 다음과 같다. 첫째, 몽골현지 관계자들은 운동재활에 대한 알고 있으며, 운동재활에 참여한 경험도 있다. 대부분의 관계자들은 운동재활 경험이 운동상해,

트레이닝 및 교육관련이 높았으며, 반면 건강관리(컨디셔닝)과 체형이 낮은 것으로 나타났다. 그리고 현재 몽골에서는 노인 및 장애인 대상 재활은 어느 정도 시스템이 개발되어 있지만, ‘스포츠선수 대상의 운동재활’과 ‘일반인 대상의 운동재활’의 부족한 상태로 보인다. 따라서 스포츠선수들뿐만 아니라, 일반인 대상의 운동재활이 몽골에서 중요한 것으로 판단된다. 향후 몽골에서는 운동재활 관련 교육이나 프로그램 등이 활발하게 이루어져야 하며, 국민의 재활 인식을 높아야 할 것이다. 이번에 경남 마산대학교에서 실시한 몽골운동재활 전문 양성 사업 프로그램처럼 운동선수나 체육대학 학생들 및 교수진들에게도 매우 효과적인 교육였으며, 앞으로도 이와 같은 스포츠ODA사업을 몽골에서도 많이 진행해야 한다. 또한 운동재활서비스의 질을 향상, 운동선수들의 인성 및 스포츠윤리교육 등 폭 넓은 주제를 아우르는 종합적인 운동재활 교육프로그램을 제공해야 한다.

둘째, 본 연구에서는 ‘스포츠선수 대상의 운동재활’을 카이로프락틱과 부상방지 재활 프로그램, ‘일반인 대상의 운동재활’을 재활트레이닝과 바른 체형교정 프로그램으로 나누어 4개 교육 프로그램으로 만족도 조사를 하였다. 모든 교육프로그램의 만족도가 높게 나타났고, 참여자들 모두 향후 및 현 직업에 활용할 의도가 높게 나타났으며, 직업능력 향상에 큰 도움이 될 것이라고 나타났다. 따라서 몽골운동재활 교육프로그램을 물리치료나 전통대체학을 위주로 이론적인 교육내용을 하는 것보다 실제 직업이나 현장에 필요한 교육프로그램들로 내용을 채우는 것이 매우 중요하다. 그럼으로써 이번에 경남 마산대학교에서 실시한 몽골운동재활 전문 양성 사업프로그램처럼 직업이나 현장에서 바로 활용할 수 있는 풍부한 운동재활프로그램 내용들이 운동선수나 체육대학 학생들 및 교수진들에게도 매우 효과적인 운동재활프로그램 내용였으며, 향후 몽골에서는 이와 같은 스포츠ODA사업을 지속적으로 해야 할 필요가 있다.

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HSL-06

A Research on Writing Errors of Students Learning English

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Abstract: Error studies is a branch of linguistics. The information obtained during the study of errors is of great importance to the teacher as well as to the students, and thus provides an opportunity to make changes in the curriculum. By studying errors, it is possible to identify the sources of errors and what to focus on in teaching methods. Why do students make mistakes? How can teachers correct their mistakes? What should be the rotation connection? Should every error be corrected? The answers to such questions will be obtained from this research work. For this, a study was conducted to analyze the writing errors of students studying English and identify the common mistakes they make and find out the source of the error. It has been established that syntax and grammar errors are the dominant part. Analyzing the error suggests the following reasons. These include: Mongolian is of Altaic origin, and English belongs to the Indo-European language category, so they are heterogeneous languages, and there are many differences between the two languages, such as the position of words in sentences, the grammatical form of verbs and nouns, etc. This causes some difficulties in learning English. In addition, the culture, traditions, customs, mental characteristics and differences of the Mongolian and English peoples have a significant impact.

Keywords: error, analyses, write

1. Introduction

Extensive research has been conducted in the field of second foreign language learning and teaching, including error analysis and the problem of native language influence during foreign language learning. Reasons for studying the topic:

Writing is a complex activity as it requires complex skills from the learner such as grammar, vocabulary and punctuation. In addition, in order to write well, the learner must be able to express his ideas in writing, which is a means of indirect communication. As writing is the most difficult skill in English, most students tend to make mistakes in their writing. Analyzing errors and understanding their sources is necessary to help students learn writing skills successfully. This study is an attempt to investigate the main sources of errors in students' writing. It also examines the types of mistakes and the language level where the most common writing mistakes are made.

The purpose of the study: The main purpose of this research is to study the mistakes made by English language learners in the process of writing, classify and analyze the mistakes, and then make improvements to the teaching technology and curriculum.

Importance of research work: It is important to analyze the writing errors of students learning English, classify them on the basis of linguistics, determine the causes, and determine the ways to correct the errors.

Survey research Researched status of the topic: Pete Corder, who is considered the "father of error studies", first addressed the problem of error studies, and his work "The significance of Learner Errors" brought a new revolution in the field. Along with Pete Corder, the names of Richards, James and Duley can also be mentioned. Error theory research focuses on the processes and methods of foreign language learning and its similarities to native language acquisition. On the one hand, it means trying to find out what processes are going on in the minds of language learners. Regarding error studies in our country, S. Uranchimeg "About some common mistakes made by Mongolian students in Mongolian-English translation lessons", J. Dar "Common mistakes made by Mongolians learning English about phonetics", Ts. Suvd "Starting Mongolian He has created scientific, and research works such as "common grammar and vocabulary

mistakes made by foreign students". It can be seen from here that the errors made by Mongolian students studying English have been studied in terms of syntax and phonology.

Theoretical and methodological basis and classification of error research:

In general, the concept of "error" refers to students' incorrect use and lack of understanding of the language they are learning. It is believed that in the process of learning a foreign language, there is some influence of the native language, so errors occur, and error analysis is a comparison of these two language systems. The internal organization and differences of the two languages itself are the basis for errors. There are two rationales for studying student errors. The first is a pedagogical basis, the main idea of which is to understand the nature of the error before using a systematic tool to eliminate it from the root.

The second rationale is theoretical, and the study of learners' errors is part of their systematic language learning process.

Error research has the following stages.

- Collection of error case documents
- Error detection
- Determining errors
- Explain the error

Error studies is a part of foreign language teaching methodology. In general, the teacher's job is to point out when something is wrong, to see if the student can correct his own mistakes, and to see if what he is saying or writing is an accidental mistake.

What is the point of error investigation?

Error-related research is conducted for the following purposes: It includes:

- Clarifying the causes of English language learners' writing mistakes
- Identify teaching methods to improve writing skills
- Improve the curriculum

Learner errors have always been of interest and significance to teachers, curriculum writers, and test developers. Mistakes tell students how far they are progressing toward their goals and what they are missing. Since there is not enough time to correct all of the students' errors, a hierarchy of error correction should be established based on the nature of the errors and their importance.

For example: Errors do not necessarily need to be corrected when the meaning is clear.

I gave her a present

However, if the meaning is unclear or leads to misunderstanding, it should be corrected. When correcting written work, the teacher should not correct errors directly, but instead should make the following markings that indicate the presence of errors in sentences, words, or punctuation.

It includes:

WW /wrong word/ - wrong word WW - I didn't do housework.

WO/word order/ - word order WO-Where Paul does work?

T/tense/-time T - I saw a nice sweater and bought it.

SP/spelling/-spelling S-government continuous

? not necessary/ - the meaning is unclear? - I saw a man and I asked him.

VF/verb form wrong/- verb form is wrong VF - I gave him my coat.

V/something is missing/- a word is missing V-I went to school yesterday morning.

In this way, students can find the source of their mistakes and correct them. In the framework of the research work, we aim to consider the following main issues.

1. Identify common mistakes made by students
2. To discover the causes and sources of those errors

Research work

An analysis of the writing errors of students studying English

This research work was carried out by checking the written works of 73 students of the 12th grade and 1st-3rd years of the bachelor students who are studying English at the Erdenet Complex Institute, where I teach, and analyzing the errors that appear in them.

The research was conducted in the following stages.

1. During the period of conducting research, create a database of errors by selecting errors from students' written work
2. Analyze the collected errors and make a general classification

Identify the cause and source of errors.

1. Analyze errors.
2. In the course of the research, it was found that students studying English make the following common mistakes, and based on the research materials, the following general classification of mistakes was made.

It includes:

1. Language level
2. Correct spelling

If we break down the errors by grammatical level:

1. Vocabulary
2. Vocabulary
3. Syntax

Each of these levels was broken down and explained by considering their frequency.

Errors at the lexical level

1. According to research, the most common errors students make in written language are errors at the lexical level. Error analysis can be divided into the following types. By frequency:

1. Verb
 2. Nouns
 3. Prefix
 4. Distinguished member
- Pronoun

Table 1. Verb error

Example with errors	Error	Correction
Many people misses so much	misses	miss
I proud of my friends	I proud	I'm proud
No one want	want	wants
We are become friends	are become	became
I'm study at Technological Institute	am study	study

When I be with her, I don't be boring.	I be, , I don't be	When I'm with her, I'm not boring.
He studying English.	study	He is studying English.
My friend haves many hobbies.	haves	has
No one live one can't live without	can't live	No one live
I spend my summer vacation In the countryside.	spended	I spent
I'm finished my secondary school	I'm finished	I finished
I'm borned In Erdenet city	I'm borned	I was born
My hobby is play basketball	play	Playing
I learning chemistry	learning	Learn

The errors with the above verbs are violations of the rule of conjugation of the number of verbs, the rule of conjugation of the singular form of indefinite pronouns, the use of the verb "to be" in conjunction with other verbs, and the use of "to be" in the tense of the verb. " - was used without the verb. Also, the use of double negation on negative words, and the ungrammatical past tense of English verbs There are errors made due to not knowing the conversion.

Table 2.Errors in the use of nouns, prepositions, definite articles, pronouns, adverbs, and adjectives

When using nouns with plural expressions, they are written in the singular, the plural of nouns is formed

Wrong example	Wrong word	Correct version
I have many friend	many friend	many friends
Many interesting thing happened	Many interesting thing	Many interesting things
Many childs are friendly.	Many childs	Many children
Much students want to study English.	Much students	Many students
I usually spend my summer vacation at Erdenet.	at Erdenet	In Erdenet
He lived long time there.		He lived for long time there.
Every person has a their future dream.	their	Her/his
I'll never be educated man.	... educated man	an educated man
My hobby is very bored.	bored	boring
We can't live happy.	happy	happily
I want to study English good.	good	well
I don't live with his.	his	him
Some of their are angry.	their	them
They chose it theirselves.	theirselves	themselves

incorrectly, mistakes are made by adding plural suffixes to uncountable nouns, the wrong prefix is used, the prefix is omitted, the definite article is used incorrectly, and the definite article is omitted, the verb is marked. Errors such as mistaken use were made.

The main source of the above error may be related to the characteristics of the two language systems. This may be due to the fact that nouns in the Mongolian language do not necessarily need to be plural in order to agree with plural expressions. The mistake of using adjectives and adverbs interchangeably may be a mistake made due to carelessness or not having well defined form.

Table 3. Vocabulary errors

Wrong example	Wrong word	Correct version
We usually go to see movie.	see	watch

My friend always attends basketball competition.	attends	participate
My friend speaks me about all things.	speaks	tell
After we finish university, we'll go to abroad.	Finish university	graduate
We usually do a decision together.	do a decision	Make a decision
He always says truth.	says truth	Tell truth

From these case studies, it can be seen that the main reason for students' vocabulary mistakes is that they do not know the words, translate them directly, and use similar words by mistake.

Syntax level error

During the research, the proportion of errors at the syntactic level is the lowest, and the following types of errors are common in this category.

Errors related to word order: Errors that change the position of sentence members

Example:

- *I very much liked my city.*
- *I met with my friend ago 3 days.*
- *But they haven't got to pay money.*

Two languages sentence structure errors:

English: S-V-O Mongolian S-O-V

My friends sometimes together spend time.

English Parallel Structure Errors

- *My hobby is playing tennis and cook.*
- *Everyday I usually play basketball and did my HW.*

Table 4. Spelling errors:

Wrong example	Wrong word	Correct version
There are friendly and shy.	There	they
We spend time togater.	togater	together
Erdenet is clan city.	clan	clean
We study at Technology University.	Technology	Technological
My auttitude is	enough money	Enough money
My future goal is to be a profesinol player.	profesinol player	professional player

As these examples show, the main causes of spelling errors are:

This type of error occurs due to the fact that there are two different pronunciations in the English recording. It is different from the Mongolian language.

- Carelessness and carelessness of students

- It is believed to be due to lack of slurring of words and lack of writing activities.

A total of 175 mistakes were made when 73 students studying English at a school of technology were asked to do a writing task, and the mistakes were collected and combined.

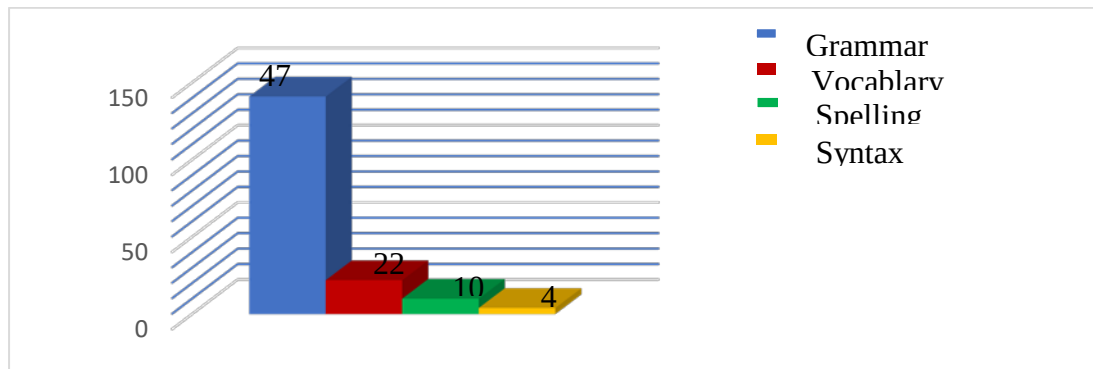
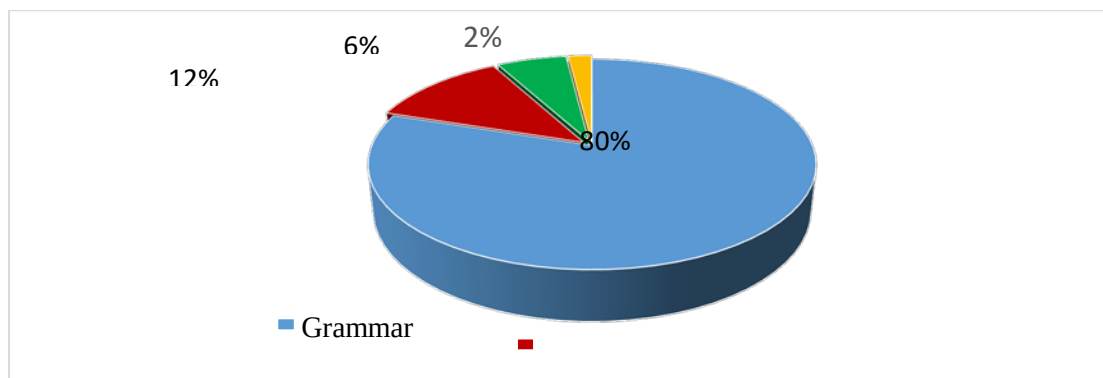


Figure 1. Error classification



Conclusion

Summarizing the analysis of mistakes made by Mongolian students learning English in the writing process: In the process of doing this research, I found that error studies have developed into an independent branch of linguistics, which is studied with interest by scientists from many countries around the world, and relatively little research has been done in our country. In the course of this research, we sampled the erroneous texts from the written work done in the framework of 5 topics, identified 175 most common errors, and made a general classification of language level and spelling based on our research materials. The level of the language was considered in 3 levels: lexical, vocabulary, and syntax. According to the results of this study, it is proved by examples that lexical level is the highest percentage of total errors or 80%. Based on

this detailed classification and analysis, it was found that the writing errors of students are caused by the following reasons. It includes:

1. It is caused by the difference of the two language systems
2. It is concluded that the Mongolian student studying English is not studying the form and meaning of words and not mastering the grammar thoroughly.

Errors are an integral part of foreign language learning and teaching and are an important tool not only to discover the learner's approach, but also to provide valuable information to the teaching process.

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SSSED-07

Empowering young male volleyball players: a training strategy for explosive strength

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Abstract— The chance to reach the pinnacle of success in sports competitions is linked to consistently choosing volleyball players from a young age. Volleyball abilities and physical traits play a crucial role in determining which young athletes are chosen to represent their region or country. The process involves using specific materials and methods, including diagnosing and tracking the progress of talented athletes, to identify the most promising individuals and provide coaches with valuable insights to tailor their training programs accordingly. The objective of this research was to investigate the impact of 6-week training program that combines jump and ball throwing exercises on the performance of both upper and lower extremities in young male high school volleyball players. In Darkhan-Uul, Mongolia, a group of 18 young male volleyball players at the Sport Center were split into two groups. The first group, known as the experimental group, consisted of 9 players with an average age of 13.0 ± 2.0 years, height of 1.5 ± 0.3 m, weight of 48.0 ± 5.0 kg, and body mass of $18.7 \pm 1.4\%$. The second group, known as the control group, also consisted of 9 players with an average age of 13.5 ± 0.6 years, height of 1.5 ± 0.1 m, weight of 48.5 ± 4.7 kg, and body mass of $19.3 \pm 1.7\%$. The experimental group received additional plyometric and ball throwing exercises in addition to their regular volleyball practice, while the control group only underwent their usual training session. The research shows that when young male volleyball players participate in an 8-week program that combines jump training with ball throwing exercises, their muscular performance can greatly improve. This information could be beneficial for physical education teachers and volleyball coaches who work with these athletes.

Keywords— schoolchildren, volleyball, High school, physical development

1. INTRODUCTION

Volleyball stands as one of the most widely embraced sports globally, prompting numerous research endeavors aimed at enhancing training programs to optimize overall physical performance for volleyball athletes. Regrettably, the scientific comprehension of this matter still lacks clarity, as many young players rely more on personal experience rather than evidence-based guidance to enhance muscular performance. Notably, volleyball demands robustness in both the upper and lower body, underscoring the significance of cultivating muscle strength and honing specific technical abilities, particularly crucial for young athletes and female players striving for success. The current global sports development trend focuses on enhancing the training and coaching techniques of elite athletes with the potential to compete for Olympic medals. In Mongolia, the organization of modern sports is deeply rooted in the country's rich history and cultural heritage, aligning with global sports development laws and trends. Advanced methods tailored to the unique nature, climatic seasons, and special characteristics of Mongolian physical development and mentality are implemented. The process of selecting young individuals for specific sports disciplines, followed by consistent training to foster skill development, is driven by societal needs. Ball games necessitate a wide range of abilities, encompassing physical, technical, mental, and tactical skills. Of these, the physical capabilities of players play a significant role in both individual player skills and team strategies, as ball games involve frequent bursts of maximum effort like sprinting and leaping. As a result, players need to possess physical attributes that enable them to execute quick and forceful movements, as well as aerobic

and anaerobic capacities that allow them to sustain intense offensive and defensive actions over extended periods. Thus, the objective of this study was to assess the impact of an 8-week combined plyometrics and ball throwing regimen on the performance of both the upper and lower body in young volleyball players. The hypothesis was that the training group would experience enhanced jumping and ball throwing abilities as a result of their specific training.

2. METHODS and RESULTS

In order to assess the impact of plyometric and ball throwing training on the performance of young volleyball players, two groups were formed: an experimental group and a control group. This study took place over an 8-week training program and involved a randomized controlled study with a team of young male volleyball players at the start of their competitive season. The players were divided equally at the beginning of the study, with half of each team receiving the plyometrics and ball throwing program in addition to their regular volleyball practice, while the other half continued with their usual training. To ensure reliable and accurate results, we selected protocols that were both time-saving and had been previously used in similar studies. The control group completed their regular volleyball session without any specialized training program. The participants were members of the district-level team in their age group, and none of them had previous experience with strength training. Each participant's parent provided written consent and was fully briefed on the study's protocol before their child's involvement.

1. The participants were given a chance to get to know the various tests before the pretest by practicing them. This was done to prevent any influence on their performance due to learning during the actual test. Both the pretest (T1) and posttest (T2) involved measuring the maximum countermovement jump and throwing a medicine and volleyball ball. To ensure consistency, all the tests took place indoors to avoid any interference from weather changes between the pre- and posttest. The international standards for anthropometric assessment were used to measure the total height (in meters) and body weight (in kilograms). An experienced operator conducted the collection of anthropometric data, including weight, height, circumferences, and skinfold thickness, following established protocols. The average of three measurements was recorded. The participant began the test with a warm-up that lasted approximately 15 minutes. Then, their explosive strength in the lower limbs was assessed through a counter movement jump (CMJ). To perform the CMJ, the participant started from a standing position with their hands on their waist on a contact mat. They made three attempts with a 2-minute break in between each one. Another test conducted was ball throwing, which measured the participant's performance using a 1.5-kg medicine ball (MBT) with a diameter of 0.60 m and a volleyball ball (VBT) weighing 1 kg. For this test, the participant sat on a chair with their back against the chair and held the ball in front of them with both hands. They made three approved attempts with 1-minute rest intervals. The training program outlined in Table 2 offers a comprehensive overview of the exercises involved. These exercises are specifically designed to target explosive power in the lower limbs by focusing on jump height and short ground contact. To ensure progress, the training program follows the principle of overload, gradually increasing intensity. The experimental group, after their regular volleyball training, engaged in 4 jump exercises paired with medicine ball throwing drills. Rest intervals of 2 minutes between sets and 3 minutes between exercises were implemented to optimize performance. The strength-speed training program lasted for a total of 20 minutes under the supervision of an experienced expert in

plyometrics and ball throwing training. In contrast, the control group continued with their regular training routine twice a week throughout the experiment. Before concluding each session, participants focused on stability, balance, and stretching exercises. The training sessions were held every Thursday and Tuesday at 9:00 p.m. for a duration of 6 weeks. It's important to note that during this period, the subjects did not engage in any additional formal strength training activities.

Table 1. Training Program for 6 weeks

Exercises	Bilateral jump (without bending knee)	Bilateral jump (with bending knee)	Unilateral jump shot	Unilateral jump as far as	Medicine ball throwing
Session 1	3x20	3x10	3x10	2x8	3x8:1kg
Session 2	3x20	3x10	3x10	2x8	3x8:1kg
Session 3	3x20	3x10	3x10	2x8	3x8:1kg
Session 4	3x25	3x10	3x10	2x8	3x8:1kg
Session 5	3x25	4x10	2x10	3x8	2x6:1kg
Session 6	4x20	4x20	3x10	3x8	2x6:1kg
A 2-minute rest period was allowed between sets and different categories. For instance, 2 sets of 6 reps with a 1 kg medicinal ball would be denoted as 2 x 6:1 kg, while 3 sets of 12 reps would be represented as 3 x 12.					

At the commencement of the protocol, there were no notable variances in anthropometric or power variables among the groups ($P > 0.05$) as indicated in Table 3. Height, weight, and BMI remained unchanged between the initial (T1) and subsequent (T2) assessments for both the experimental and control groups with no significant alterations observed ($P > 0.05$). Noteworthy enhancements in the throwing distance of the medicine ball (1.5 kg) and volleyball ball (1 kg) were evident in the experimental group (3% and 17.8%, respectively, $P = 0.00$) concerning the upper body. Additionally, a significant improvement in countermovement jump performance was noted (19.1%, $P = 0.05$). Significant time-related effects were observed for CMJ, MBT, and VBT ($F = 32.4, 29$, and 13.9 , respectively; $P < 0.05$). Conversely, the control group did not exhibit any significant enhancements in these parameters (MBT, VBT, and CMJ, $P > 0.05$).

This study aimed to investigate the impact of a six-week program combining plyometrics and ball throwing on the overall performance of young male volleyball players, specifically focusing on their upper and lower body abilities. The key finding of this research revealed that the experimental training group exhibited significant improvements in both jumping performance and ball throwing distance within a short training period. Notably, the vertical jump height experienced a remarkable increase of 20.1% solely in the experimental training group, while the control group showed insignificant changes of 3.2%. Furthermore, previous research has also demonstrated an 11.2% increase in jump height after 12 weeks of plyometrics training in male volleyball players, emphasizing the significance of jumping ability as a differentiating factor in their overall performance. The findings of our study align with those of Marques and González-Badillo (2005), who also investigated the impact of strength training on young basketball players using free weights and half squat exercises [22]. They observed statistically significant differences in vertical jump performance in the experimental group. Although our study utilized only a medicine ball without any additional load, we arrived at the same conclusion - strength training is an effective method for improving upper extremity performance in young athletes. However, the difference in training frequency over a period of 6 to 12 weeks may explain the variation in results between the studies. Furthermore, our innovative approach further supports the prevailing evidence that attributes strength gains in prepubertal male athletes more to neural mechanisms rather than muscle hypertrophy.

CONCLUSION

The training program that lasted for 6 weeks and aimed to enhance the speed and strength of the lower and upper body parts had a positive impact on the performance of various tests conducted in this study. Specifically, the experimental group showed improved results in the final measurements after undergoing this program. In our study, we discovered that when young female volleyball players engage in a six-week program that combines plyometrics and ball throwing exercises for both their upper and lower body, it leads to notable improvements in their performance. These exercises help the players adapt and enhance their skills, ultimately benefiting their overall performance on the volleyball court.

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ITET-08

An Analysis of the Factors Affecting Interruption of Overhead Power Line

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Abstract: In the research section, the Yeroo 110 kV overhead power line, which is fed from the 110 kV busbar of the Darkhan Thermal Power Plant, was considered. The 110 kV Darkhan-Yeroo-Bugant overhead line was put into operation in 1971, with a total age of 53 years, with AC-70 conductors, 531 iron and reinforced concrete supports, and 131.2 km of 1-circuit power transmission overhead line. The 110 kV Yeroo-Bugant overhead line continuously supplies the villages of Yeroo Sum, Khuder Sum, Bugant, and three large mines in Selenge province with electricity. Since Yeroo 110 kV overhead line has relatively more outages per year than 110 kV lines of Darkhan-Seleng Power Transmission Network, the calculation is based on the last 3 years of the survey of the outages of this line. A total of 90 outages were recorded in this line in 2021-2023. Factors affecting outages include temperature, wind speed, precipitation, support being hit by foreign objects, snowpack, lightning rods, and lightning strikes. The influence of these factors was calculated by multifactorial regression in SPSS software, and the most influential factor and the least influential factor were determined. Multivariate correlation equations and correlation coefficients were also found. Measures for further improvement have been taken and ways to solve the problem have been determined.

Keywords: Outages, Analysis of the factors influencing Multivariate correlation, correlation coefficients

1.Introduction

The 110 kV Yeroo -Bugant overhead line supplies electricity to Yeroo sum, Khuder sum, Bugant village, and three mining sites for coal and iron ore in Selenge province. The installed capacities of the substations are as follows: the Yeroo substation, fed from the Yeroo overhead line, has a capacity of 1X2500 kVA at 110/6 kV; the Bugant substation at 110/35/6 kV has an installed capacity of 2x6300 kVA; the Tolgit substation at 110/6/35 kV has an installed capacity of 1x6300 kVA and 1x4000 kVA; the Khustai substation at 110/10 kV has an installed capacity of 1x4000 kVA; the Bayangol substation at 110/10 kV has an installed capacity of 2x2500 kVA; and the Khandgait substation at 110/10 kV has an installed capacity of 2x6300 kVA. The 110 kV Yeroo overhead line has a maximum load of 6.3 MW during winter peak times and 4.2 MW during summer low load periods. The Yeroo overhead line runs through mountainous areas (42.3%), plains (44.8%), and agricultural land (12.8%). The Bugant branch of the 110 kV Yeroo overhead line connects to the Bugant substation via support No. 268, to the Khustai substation via support No. 48, to the Bayangol substation via support No. 72, and to the Bugant substation via support No. 185. The 110 kV Darkhan- Yeroo -Bugant overhead line is the primary power supply line for Mongolia's mining and mineral industries, providing electricity to agricultural and mining enterprises. The technical specifications of the line and the locations are shown in /Table 1/ and /Figure 1, Figure 2/. The Yeroo overhead line consists of two types of supports. /Figure 2/.

Table 1. Technical description

Darkhan Yeroo power line	
Year of commissioning	1971 year

The length of the LDS	77.3 км
Brand of mobile phone	AC-70/11
The number of circuits of the DSL	1 circuit
Branched pillar no	Тү№268
A parallel line	There is none
Rope brand	ЛК-0-35, С-35, 1,7км
Total support	¹ 1-304
Yeroo Bugant power line	
Year of commissioning	1971-1972
The length of the LDS	53.9 км
Brand of mobile phone	AC-70/11
The number of circuits of the DSL	1 circuit
Branched pillar no	Тү№185
A parallel line	There is none
Rope brand	LK-0-35, C-35, Tolgoi 2.11km Bugant 2.11km
Total support	¹ 1-227

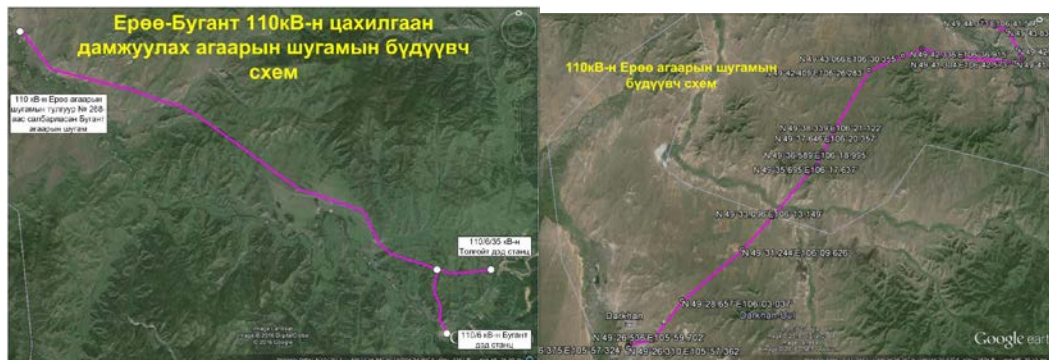


Fig. 1 Yeroo power line maps

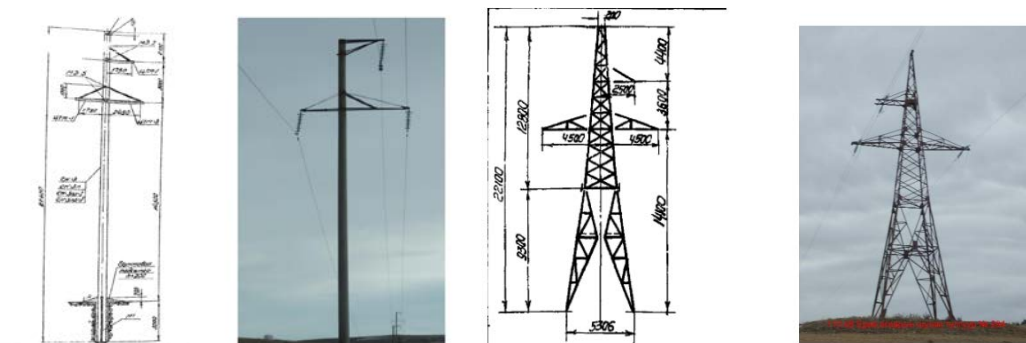


Fig. 2 Two types of supports working in Yeroo power line

Purpose

To determine the characteristics of the 110 kV Yeroo-Bugant overhead line, the condition of the overhead line interruption, and the factors affecting it, to make a conclusion through statistical analysis, and to determine the conditions that will affect the reduction of the line interruption in the future

Objective

Determine the characteristics of the 110 kV Yeroo overhead line and assess the state of interruptions on the line to draw conclusions.

Identify the factors influencing interruptions on the 110 kV Yeroo overhead line, and based on the data, conduct statistical analysis using the SPSS program to draw conclusions.

Draw conclusions on the condition of interruptions on the 110 kV Yeroo overhead line and determine the conditions that will affect reducing interruptions in the future.

Method and Methodology

Statistical methods of observation and quantitative analysis, SPSS software,

2. Theoretical part

Based on research conducted on the long-term interruptions of 110 and 220 kV lines of the CES, it is observed that the number of sudden interruptions of these lines used in Mongolia is 5-10 times higher than that of similar lines in foreign countries. The extreme climate of the region has a unique effect on the reliable operation of the power lines.

According to the research results, 85-90 percent of the annual interruptions of the above lines occur during the warm season. During this time, more than 30 percent of all interruptions occur only between 5-8 am. The success rate of restoring power after an interruption (APV) is 85-93 percent. This phenomenon may be related to summer lightning. However, meteorological station observations show that the probability of lightning in Mongolia at this time is the lowest throughout the day, and the most frequent occurrence of lightning is between 13:00 and 15:00 in the afternoon. Nevertheless, the number of interruptions in the afternoon is significantly lower, indicating that the main cause of interruptions is not lightning. The high number of interruptions during the morning sunrise in the warm season is related to dewfall on the surface of insulation. Studies on surface pollution and humidity were conducted. In Mongolia, there is no industrial pollution on these power lines, so the pollution is likely soil-based dirt pollution

3. Pollution from the soil can greatly pollute the surface of the insulation during spring storms and strong winds. As soon as the rains begin to fall in June and the humidity of the air increases, it can combine with the morning dew to form a conductive layer on the surface. In order to investigate this problem, soil samples were taken from points near the supports along the route of the line, and the values of the salts contained in them converted to NaCl were analyzed in the laboratory. When comparing the indicators of soil salinity along the route with the readings of "FIP", "LIFP", and "MIR" instruments at the time of line break, it was determined that the salinity and graininess of the soil is significantly higher at the points where the line breaks the most.

4. In order to double confirm that contamination-moistening of the line insulation is the main cause of line breaks, insulation elements from the points with a lot of breaks were brought to the laboratory for inspection, while the level of surface contamination was measured by the method of artificial humidification, and the specific electrical conductivity of the contaminated surface $\times$ (maxim) was determined. The bottom surface of the lowest element of the insulator package circuit was the most contaminated, surface iridescence occurred, dust, and traces of melting of glass surface enamel were observed. It should be mentioned that there was a lot of contamination from bird droppings in the upper parts of the insulating circuit of some supports. The contamination of the lowest edge elements, where 20-25% of the total stress is absorbed by

the stress distribution, was highly uneven along its surface. According to the measurements, the level of pollution in the depth of the wrinkles in the lower part of the isolation element was $x=14-30$ mcm, while the contamination in the upper part was $x=1-2$ mcm. Foreign and domestic scientists have proven that this type of highly uneven pollution reduces the electrical capacity of the garland by 10-15 percent. The lower part of the surface of the insulating element is heavily polluted, unlike the upper part, due to the pollution and weather conditions of Mongolia, and when the dew falls in the morning and evening, the electrical capacity of the insulator of the high voltage line is significantly weakened.

5. Since Mongolia is elevated above sea level by 1000 meters, the air pressure decreases and the relative density of air decreases to 0.85-0.89, which reduces the electric capacity of the air by 10-15%, which is another reason for high line breaks. The principle of increasing the number of insulators in lines located above 1000 meters above sea level, taking into account the reduction of air electrical capacity, has not been calculated in our line.

6. Bulgan-Kharkhorin, Kharkhorin-Tsetserleg, Kharkhorin-Arvaikheer, Bor-Onder - Onderkhaan 110 kV lines, the main reason for the excessive outages is that when the line was built, the specificity of glass element pollution was not studied in the conditions of our country, and the salinity of the soil along the route of the line construction was not studied. After researching the situation, it was considered that the number of insulating elements in the line isolation package was too small due to the fact that the number of insulating elements was not taken into account in the selection of the insulating elements in accordance with the natural climate of our country, and the fact that the area is located at an altitude of more than 1000 meters above sea level was not taken into account in the calculation

3. Research section

Based on a study of the last 3 years of faults in the 110 kV Yeroo overhead power line:

In 2021, there were 14 incidents due to precipitation, 13 due to element collapse, and 10 due to element penetration, with 24 involving concrete supports and 9 involving steel supports.

Table 2. Study of the interruption of 110 kV Yeroo overhead line and the factors affecting it [9]

	injury /number/	Precipitation /snow, rain/	With element cymbals	The element is struck	Lightning cable	External influence	With concrete support	With iron support
2021	33	14	13	10	0	0	24	9
2022	30	10	16	9	1	1	26	4
2023	27	12	2	3	1	1	21	4

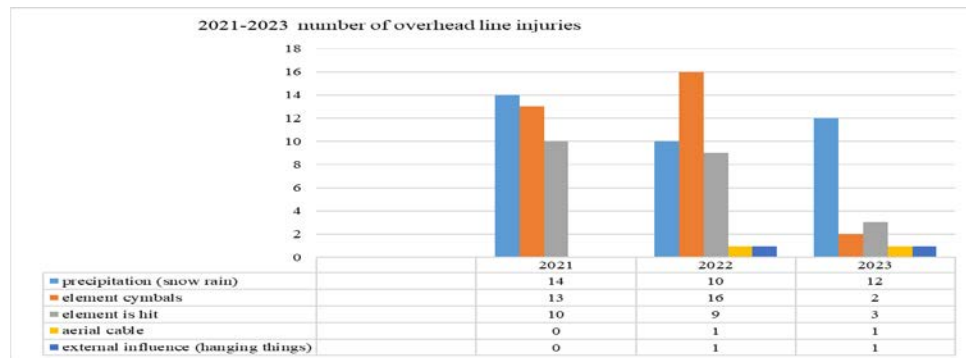


Fig.1 The number of aviation incidents due to overhead line faults from 2021-2023

In 2022, there were 10 incidents due to precipitation, 16 due to element collapse, 9 due to element penetration, 1 due to a lightning cable, and 1 due to external effects, with 26 involving concrete supports and 4 involving steel supports.

In 2023, there were 12 incidents due to precipitation, 2 due to element collapse, 3 due to element penetration, 1 due to a lightning cable, and 1 due to external impacts, with 21 involving concrete supports and 4 involving steel supports.

The reasons and conditions for the breakdown of overhead lines are as follows:

During operation, high voltage lines and substation isolation structures are affected by the environment.

The combined effects of a large number of factors, such as various types of pollution, adverse weather conditions, different moisture levels of the insulation surface, extreme environmental temperature effects due to terrain features, air rarefaction, lightning, various internal overvoltages, as well as constant action of working voltage.

Lightning: A gas movement that takes place at a distance of approximately 1 km is called lightning.

Lightning is divided into two types: ball lightning and linear lightning.

Ball lightning is observed in the air as a strongly ionized body and weakly luminous ball with an average diameter of 10-20 cm, and in some cases up to 100 cm.

Ball lightning moves horizontally over the surface of the earth at a speed of five to ten meters per second, sometimes appears as a reflection or descent, and is of various colors, such as red, yellow, yellow, and white. When ball lightning strikes between clouds and ground, it is common to see lights around the point where the ball was fired.

It is also attracted to metal structures and conductors, and can be observed moving, becoming immobile, moving up and down.

Ball lightning usually lasts for a few seconds, sometimes up to a minute, before disappearing. It has been known to cause fires and damage to buildings and electrical conductors.

Ball lightning typically lasts for several seconds, sometimes up to a minute, before disappearing.

There have also been cases of burning and burning things that come in through chimneys and window vents of the house, and damage to wire conductors.

Cloud-to-ground and cloud-to-cloud interactions are called linear lightning.

The formation of lightning clouds in the area and the electrification of clouds are the main conditions for lightning.

The most dangerous thing for electrical equipment and buildings is linear lightning that lands between the clouds and the ground.

Icing: In our country, the occurrence of icing on overhead lines is rare, but in the mountainous areas of the Selenge River, Khentii, and the shores of some large lakes, depending on the operating environment of the overhead lines, it is observed that the wires of high voltage lines are frozen. In general, the type of additional mechanical load that occurs on the wire, such as sleet, slush, wet snow, ice, etc., has a specific weight of 0.15-0.9 kg/dm, but these are transferred to the equivalent of ice and are generally understood as icing. . The shape of the ice formed on the wire varies greatly, but in the calculation, it is considered to be a regular, thick-walled cylinder. [4]

Contamination: Due to contamination and humidity on the surface of the insulation, delays in lines and substations are the most common cause of delays during working voltage. Pollution that occurs on the insulation surface is divided into industrial, natural and animal pollution. Industrial pollution includes emissions from smoke and various chemical fertilizers. Natural pollution mainly includes soil pollution. Salt, salty dirt and dust particles are carried away by the wind and settle on the surface of the insulation. At this time, if there is a little moisture on the surface, there is a danger that very favorable conditions will occur. Soil pollution is one of the most common dangerous pollutions in Mongolia, which has dusty loose soil, frequent windstorms in spring and autumn, and heavy dew and frost in the morning and evening. Animal pollution is caused by bird droppings and bird droppings in the case of high voltage substations. To reduce this type of pollution, measures such as cleaning of bird nests on lines and substations, and placement of bird repellants on insulation in areas where various birds nest are common will be taken. [4]

Moisture: Moisture on the surface of high voltage insulation is caused by rain, sleet, fog, dew and frost.

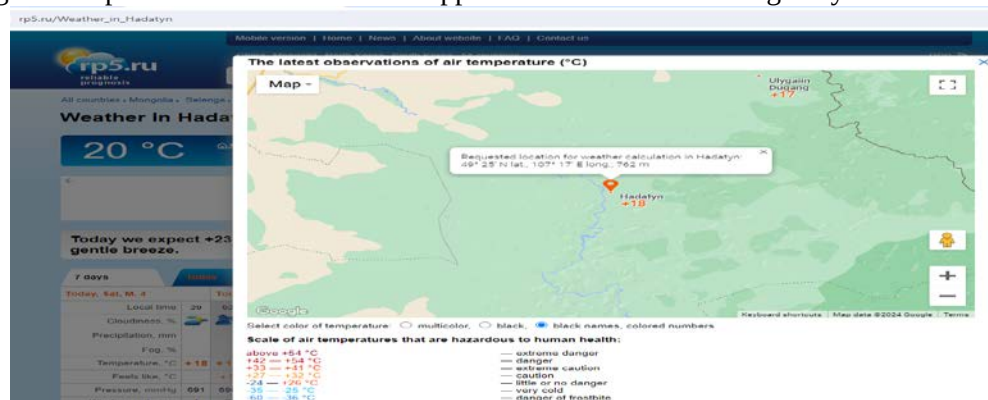
Due to the extreme weather conditions of Mongolia, moisture caused by this morning dew and frost combined with pollution will adversely affect the reliable operation of high voltage lines. When wetting the surface of the insulating structure, a conductive layer will form along the surface, and the surface current will flow under the action of the working voltage. The magnitude of this current depends on the electrical conductivity of the wet layer. The electrical conductivity of the layer varies depending on the thickness of the pollution structure, its solubility in water, the type of wetting, and the level of wetting. The main electrical parameter of this wet layer formed on the surface is the specific electrical conductivity of the surface. The unit of measurement will be microsiemens (mcm). The amount of current flowing through the wet surface mainly affects the properties of the coating and determines whether the coating voltage is high or low, whether it is coated or not. The higher the current, the higher the probability of tripping, and the lower the tripping voltage. [6]



Fig. 4 Pole power line with concrete support is broken due to external factors



Fig. 5 Pole power lines with concrete supports are broken and damaged by external factors



https://rp5.ru/Weather_in_Hadahtyn

Fig. 6 A site that downloads weather reports around Yeroo power line

When the earthing resistance of the pole is about $R=10-15$ Ohm, the number of annual lightning interruptions of the line should be about 0.5-1.0. It follows from this that the 110 kV line with iron or reinforced concrete support must be protected by cables along its entire length.

With this, the lightning protection of the 110 kV overhead line with cable protection was provided at the operational level, and for the line with a length of 139.3 km, it was calculated that there would be no more

than 1.55 lightning strikes per 100 km per year. This indicator is acceptable: 100 km per year/2.0 does not exceed the percentage of interruption.

Therefore, the most optimal scheme of lightning protection is to install 1-OPN-110 kV on the upper wire in the area without lightning protection cables. [9]

$$\eta'_{r.y\check{c}} = \eta^r + \eta_{r.3}^{nOBP} = 1,69 + 0,3 = 2,0 \text{ breaks per year/100 km.}$$

Table 5. the total number of factors affecting the interruption, the maximum and minimum percentage of interruption

Lightning cable			
Lightning cable	Number	MIN	MAX
No	1108	99.35%	99.95%
yes	2	0.05%	0.65%
total	1110		
External influence			
External influences /things are assigned /	number	MIN	MAX
NO	1106	98.95%	99.81%
YES	5	0.19%	1.05%
total	1111		
Injury number			
Injury number	Number	MIN	MAX
NO	1002	88.30%	91.80%
yes	109	8.20%	11.70%
TOTAL	1111		
Precipitation and snow			
Precipitation, snow, rain	NUMBER	MIN	MAX
NO	1067	94.73%	97.04%
YES	44	2.96%	5.27%
TOTAL	1111		
With element cymbals			
With element cymbals	NUMBER	MIN	MAX
NO	1078	95.86%	97.88%
YES	33	2.12%	4.14%
TOTAL	1111		
The element is struck			
The element is struck	NUMBER	MIN	MAX
NO	1087	96.81%	98.54%
YES	24	1.46%	3.19%
TOTAL	1111		

According to the T-test analysis done on the above SPSS program, 88.3% of the total days of at least 3 years of power transmission overhead lines are uninterrupted, and at least 8.2% are interruptions. Maximum 11.7% outage is likely. As the most influencing factor for the interruption, it seems that snow and rain or precipitation can be detected in a maximum of 44 times or 5.27% in 3 years. In general, there is a maximum

probability of 5.27% failure due to precipitation, 4.14% failure due to element corrosion, and 3.19% failure due to damage to the element.

When determining the quality of correlation of the factors affecting the interruption of the overhead line using the T test method, the probability of damage due to the presence of an element is 22.196% of the total damage.

Table 6. Table of T-test analysis of factors affecting the dropout

Group Statistics									
Элемент цантай		N	Mean	Std. Deviation	Std. Error Mean				
Салхины	1	33	2.24	2.305	.401				
хурд м/с	0	1078	2.63	1.995	.061				
Independent Samples Test									
		of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	of the Difference Lower Upper
Салхины хурд м/с	Equal variances assumed	.270	.603	-1.083	1109	.279	-.384	.354	-1.079 .311
	Equal variances not assumed			-.945	33.483	.351	-.384	.406	-1.209 .442

The following analysis values were observed when determining the interrelationship of the factors influencing the interruption of air lines using the Binarlogregress equation in the SPSS program. If the parameters of the equation are tested for statistical significance by t-test, the hypotheses that each coefficient is equal to zero are rejected at the 97 percent probability level (P-vale values <0.05 for all coefficients) and the coefficients are statistically significant. When checking whether the equation is compatible with the F-test, the null hypothesis that the coefficients of the equation are equal to zero at the same time is rejected at the 97 percent probability level (Sig.F<0.01), and the equation is statistically significant.

Table 7. Table of regression analysis of factors influencing interruption

Classification Table^{a,b}

Observed			Predicted		Percentage Correct
			Элемент цантай		
Step 0	Элемент цантай	0	1078	0	100.0
		1	33	0	0.0
	Overall Percentage				97.0

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	
Step 0	Constant	-3.486	.177	389.190	1	.000	.031

Variables not in the Equation

	Score	df	Sig.	
Step 0	Variables			
	Салхиныхур дмс	1.175	1	.278
	Температур	53.665	1	.000
Overall Statistics		54.760	2	.000

With the help of the regression model, 97% of the values of the outcome variable (whether or not damage will occur due to the element clicking) can be correctly classified. The Sig p number, which indicates the true percentage of the regression model, is less than 0.05 or 0.00 on temperature. It represents the true statistical probability of damage occurring depending on wind speed and temperature. Moreover, the Exp (B) value of 0.031 shows how a unit change in the factor variable affects the probability of an outcome being observed or an injury occurring. This indicates a low correlation.

Table 7. Table of regression analysis of factors influencing interruption

Classification Table ^{a,b}						
Observed			Predicted			Percentage Correct
			Элемент цохигдсон			
Step 0	Элемент цохигдсон	0	0	1	0	100.0
		1	24		0	0.0
Overall Percentage						97.8

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation							
	B	S.E.	Wald	df	Sig.	Exp(B)	
Step 0	Constant	-3.813	.206	341.420	1	.000	.022

Variables not in the Equation				
	Score	df	Sig.	
Step 0	Variables			
	Салхиныхур дмс	.033	1	.857
	Температур	17.436	1	.000
Overall Statistics		18.544	2	.000

97.8% of the values of the outcome variable (damage due to element impact) can be correctly classified with the help of the regression model. The Sig p number, which indicates the true percentage of the regression model, is less than 0.05 or 0.00 on temperature. It represents the true statistical probability of damage occurring depending on wind speed and temperature. Moreover, the Exp (B) value of 0.022 shows how a unit change in the factor variable affects the probability of an outcome being observed or an injury occurring. It also indicates low correlation.

Conclusion

According to the calculations, 75-80% of the line breaks are related to summer humidity and winter icing, and the remaining 20-25% are related to lightning protection, support grounding, damage to elements, and pollution of bird's nests.

1. 110 and 220 kV lines in our country are stretched over long distances and operate in very low load mode, so the voltage level of the line is always 10-15% higher than the normal level. .
2. In the case that large birds have built their nests on the poles, before the birds fly away from the nest in the morning, they should make a continuous 1.0-1.5 meter long scat, which can provide a shunt to the garlands, and clean the bird's nest. and cleaning the pollution caused by bird droppings from time to time.
3. The statistical relationship between the number of air line damage and the influencing factors was very low when calculated by mathematical statistics. On the other hand, there was a higher statistical correlation between damage caused by the environment, i.e. environmental temperature and wind and precipitation.
4. If you check whether the equation parameters are statistically significant in the SPSS program, the hypotheses that each coefficient is equal to zero are rejected at the 97 percent probability level (P-value values <0.05 for all coefficients) and the coefficients are statistically significant.

The Sig p number, which indicates the true percentage of the regression model, is less than 0.05 or 0.00 on temperature. It represents the true statistical probability of damage occurring depending on wind speed and temperature. Moreover, the Exp (B) value of 0.022 shows how a unit change in the factor variable affects the probability of an outcome being observed or an injury occurring.

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EDOT-09

Supporting Equal Access to Education Through the Teacher Exchange Program

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Abstract: Mongolia is one of many countries in the world committed to provide quality and accessible equal education to all children by 2030 as part of the "4th Sustainable Development Goal". This includes the issue of equal inclusion of children with disabilities who are unable to fully receive education services, in addition to the general education system, to education services. The "Supporting Equal Inclusion Education" project, developed in collaboration with the Ministry of Foreign Affairs of Mongolia and the Asian Development Bank, was successfully implemented in Darkhan-Uul 7th and 12th schools, respectively. The management and teachers of the 12th school, which implemented the project, are spreading their experience and methodology to the 25th school of general education through the "Teacher Exchange Program". Within the framework of the program, activities were conducted 12 times during the 2022-2024 school year to develop manuals and recommendations for the equal inclusion of children with developmental disabilities and methods of working with them. 210 elementary and middle school teachers of the 25th school were involved, and the teachers started implementation activities within the scope of their abilities to improve the quality of education for children. Successfully participated in the Good Practice Report of the Equal Inclusion Education Project as a result of the "The Teacher Exchange Program". In addition, the disabled students of the school became socially competent and participated in the next level of educational services.

Keywords: Children with developmental disabilities, supporting equal inclusion education

1. Introduction

In 2015, the "EDUCATION-2030" program issued by the INCHON Declaration in South Korea included the main goal of "equal inclusion, quality education that provides equal opportunities, and lifelong learning opportunities for all."

In order to implement the above legislation, the following orders are being implemented in the field of education

There are the following policy documents of the Ministry of Education and Culture: "Equal inclusion of children with disabilities in education", "Exemplary model of individual training plan and method of development", "Evaluating a student learning with an individualized learning plan", "Methodology for Comprehensive Developmental Support for Children with Disabilities", "Creation of materials and learning environment suitable for students with disabilities at all levels of educational institutions", and "Instructions

for paying additional wages to teachers and assistant teachers working with children with disabilities in kindergartens and general education schools". In order to ensure the implementation of these policy documents, there is a lack of knowledge of teachers and educators about inclusive education, methods of working with students with disabilities, teacher support, and methodological knowledge. This study was developed based on the need to increase and spread the knowledge of teachers through the **teacher exchange program**.

By conducting this research, it is important to know the possibility of empowering teachers to spread inclusive education. Zolzaya B received a master's degree in 2020 on the topic "Researching the Problems Faced by Teachers in the Implementation of Inclusive Education". In his 2018 book, "Psychological Foundations of Educating Children with Disabilities", Battsengel G. studied the preparation of teachers to work with children with disabilities and the general characteristics of inclusive teachers.

2. Purpose

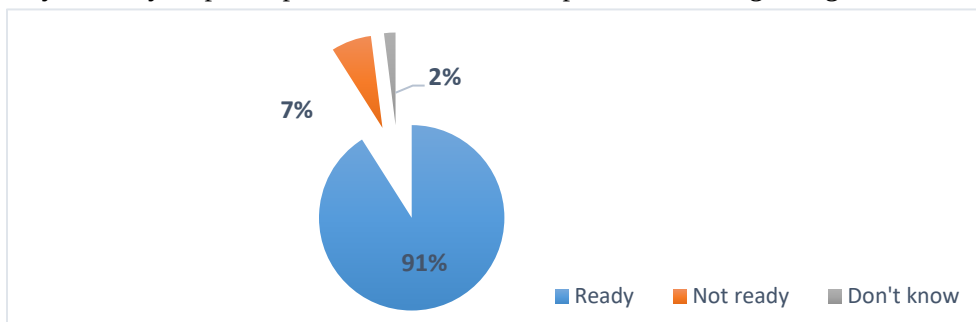
As a result of the "Equal Inclusion Education" project, teachers working with children with disabilities were trained through the "Teacher Exchange Program" to improve their methodology and knowledge, and to conduct research and develop recommendations based on the results of their empowerment.

Research method: Observation method, Test method, Document theory research method, Questionnaire method, Quantitative analysis method

Research section: Before the implementation of this teacher exchange program, a survey of teachers' understanding of the subject was conducted using questionnaires and developed by quantitative analysis. 57 teachers from 14 secondary schools participated in the study.

Research 1. Observational research from teachers:

1. Are you ready to participate in the continuous process of recognizing and understanding the unique



features, needs, and interests of each child, supporting their development, and providing quality services tailored to their needs at all levels of education?

Fig. 1 Results of the survey According to the above survey, 91% answered that they are ready to work with children with developmental differences, which shows that teachers work for children from their hearts.

2. Do you agree that children with developmental differences can study in regular schools?

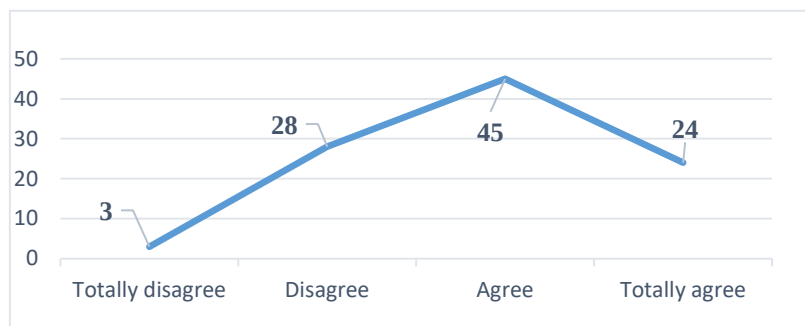


Fig. 2. Research results: 45% agree, 28% disagree, 24% completely agree, and 3% completely disagree. According to the results of this study, it is concluded that the psychological attitude of teachers is ready for the implementation of inclusive education.

3. Does inclusive education apply only to children with developmental differences?

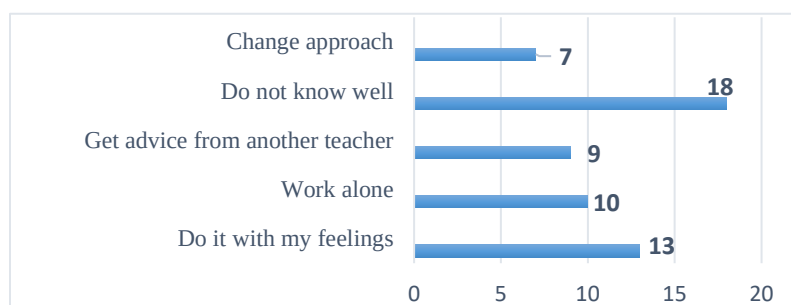


Fig. 3 Research results: 73% answered no, suggesting that their initial knowledge of inclusive education is reasonable.

4. Where did you receive training in the field of inclusive education?

According to the survey, there are 36% in the local area, 39% in the workplace, 13% who want to participate, and 12% who have not participated. About 60% of teachers have received some form of training on inclusive education, while 25% have not. The teacher himself wants to participate, so he is studying by himself. It can be seen that there is a need to discuss the experiences and lessons learned at school, to learn from each other, and to receive step-by-step training and mentoring activities from professional organizations and educational institutions.

5. There is a child in your class who often repeats the teacher's words and sentences, does not talk with friends or play together, focuses too much on something without any purpose, gets angry when the fixed schedule changes, and shouts loudly. How do you work with this child?

32.4% of all teachers talk to their children in a comforting manner. 10.8% will seek advice from another teacher. 21.6% will work with an Individual Learning Plan. 13.5% answered that they don't know how

to work, showing that they lack understanding and ability to work with children with disabilities, and that teachers are faced with the need for individual training programs tailored to the child's development.

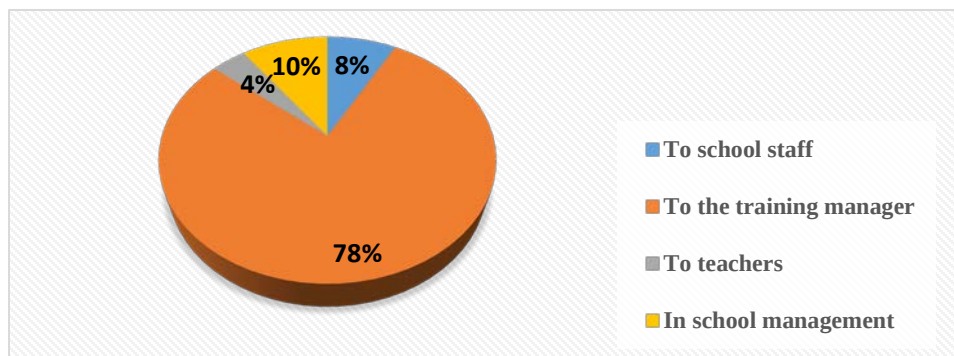


Fig. 4 Research results

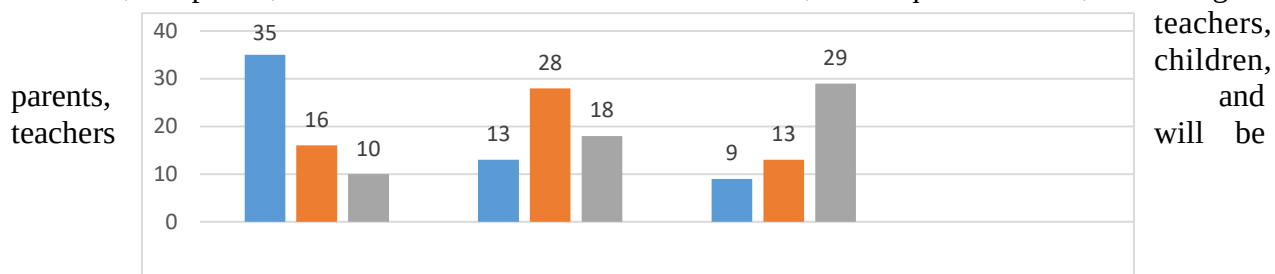
6. Choose the correct answer instead of the blanket. The individual learning plan serves as a material used to determine the level of participation of children with disabilities in educational services.

According to the research, 78% of the teachers have a good understanding of implementing Individualized Learning Plans for children with disabilities. But we concluded that let's look at the results of the research that detailed the methodological knowledge of how to use it.

7. Put the individual learning plan development process in the correct order? Note: Sort starting from 1.

- A request for an individual study plan can be made by a child, parent or class teacher
- In case of a request, the class teacher organizes a meeting of the child, parents, and the teacher and begins to develop an individual learning plan based on mutual consent.
- Once the individual training plan is developed, it will be reviewed and approved by the director or training manager

56.7% of the participants of the study made a request for an Individualized Study Plan by either the child, the parent, or the teacher who led the class. 32.4%, If a request is made, a meeting of



organized and based on mutual agreement, the Individual Learning Plan will be developed. 18.9% responded that the director or training manager will review and approve the Individual Learning Plan as soon as it is developed, indicating that recommendations and training are needed for developing the Individual Learning Plan.8. In your opinion, what would be the skills and values of a teacher to teach children with different developmental characteristics equally?

Table 1. Research results

A lot increase knowledge Do not know well Encourage children To love and understand It is important to understand and love children. Continuous development kindness Accept the child as he is Medium Respects and guides	Develop an individual plan A teacher who loves children and is patient To love sincerely There is no sincere discrimination in employment Be very sensitive and tireless Important All children should be treated equally Understand and respect	Accept and support children as they are. Experiment with different aoga postures that quickly change, to be persistent Development of all children by accepting differences Reach out to every child	Humanity Optimal teaching with the right methodology Teacher skills should be good. equal inclusion To understand Endurance Passionate and experienced

Valuing students' differences, loving children, understanding and respecting them, self-development, continuous learning, etc. are good values, but working with others, working in groups, and cooperating are important attitudes for all teachers. (UN Children's Fund OU expert advice) In order to create this approach, the ability to work with parents and families and to cooperate with other educational professionals is a fundamental value, so it is effective for teachers to share their experiences and methods.

Experimental part: The following activities were carried out within the framework of the teacher exchange program.

1. The teacher exchange program was developed and approved.
2. selected 57 teachers working with students with disabilities from 14 state-owned schools, training on types of disabilities-2, training information on methods of support-2, training on methods of developing Individual Learning Plan (ILP)-4, "Teachers of special needs education "Methodology to support school teachers" training - 3, training on new methods and information for the support team - 3/12 times.
3. Expanding cooperation, Department of Education and Science of Darkhan-Uul Province, Good Neighbors NGO, and teachers of 12th school jointly trained 57 teachers working with disabled children in the framework of the Teacher Exchange Program on how to conduct developmental assessment before developing individual training plans. After this training, 57 teachers evaluated their students and returned to our teachers to review their work and improved their understanding.



student	Feeding 10 points		Movement 13 points		Defecation and washing 12 points				dress 9 points			Communication 13 points			The difference is 12 points			Numerology and money management 20 points			
1-p		3	7	1	5	7		7	5	3	1	5	6	7		7	4	1	19	1	
2-p			10		2	11		1	11			11		2	11		3	9			20
3-p			10	1	4	8		4	8	1		10		8	5	4	1	7	2	7	11
4-p			10			13		3	9			11			13		3	9			20
5-p			10		2	11			12			11			13		2	10	6		14
6-p		2	8	6	2	5		4	8	6	5		1	1	11	3	8	1	18	2	
7-p			10		4	9			12			11	5	6	2	2	4	6			20
8-p		3	7		6	7		6	6		4	7	9	4		7	4	1	20		
9-p	3	7		6	7		8	4		11			13			12			20		
10-p	2		7	6		7	7	3	2	4	1	7	5	8		12			2	1	17
11-p	1	1	8		12	1			12			11			13		1	11			20
12-p	6	16	87	12	44	79	15	32	85	15	11	84	18	36	68	24	30	55	22	11	122

About time and dimensions 8 points			YRead and write 17 points			Society 16 points			Doing housework and shopping 19 points			Finger movement coalition 10 points			Sloppy movement 4 points			Total			A student who needs an Individualized Learning Plan
8			#	1	4		8	8	13	5	1		9	1	2		2	71	51	41	
	1	7		1	#		1	15		5	14			10		1	3	0	17	147	
1	4	3	2	5	#		2	14	3	14	2			10		2	2	14	51	100	
	2	6		6	#			16		3	16			10			4	0	17	148	
3	4	1	1	4	#			16	6	2	11			10		2	2	16	16	133	
8			#	1	1			16	17	1	1	10			2		2	86	26	53	
5	2	1	2	8	7	1	3	12		3	16			10		1	3	15	31	119	
8			#	1	4	2	1	13	8	8	3		6	4		2	2	66	45	54	
8			#			16			18	1		10			3	1		##	20	0	
4	3	1	8	1	8	6	8	2	11	7		6	2	2	2		2	75	34	55	
		8			#			16			19	1		9		2	2	2	16	147	
12	16	27	#	#	#	22	23	128	29	49	83	17	17	66	5	11	24	##	##	997	

Support is much needed
A little support is needed
No support required

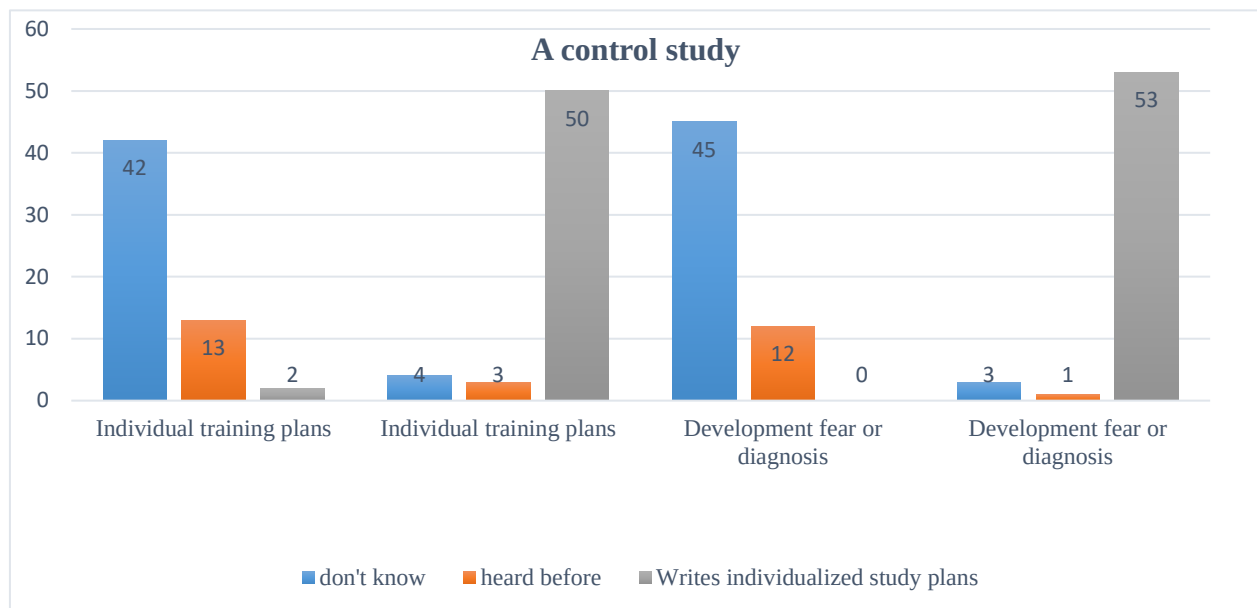


Fig. 7 Developmental Level Determination, Individual Learning Plan (ILP)

4. We are preparing and distributing a series of CONTENT on how to use the adaptive equipment required for the teaching methodology of teachers working with children with disabilities. For the first time, information on how to use the appropriate materials for organizing language therapy training was explained by a professional language therapy teacher. Language training is conducted in our school, and as a result, there is a clear improvement in the language level of students.

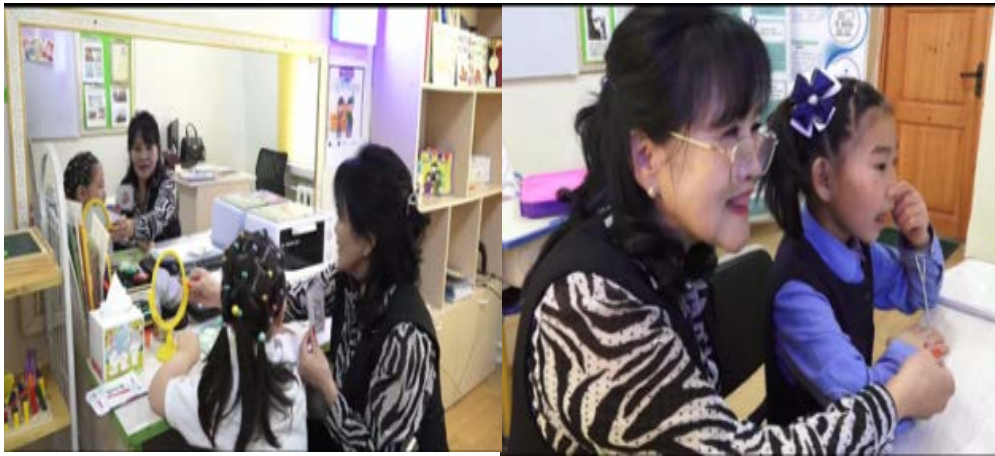


Fig. 8.9 Speech therapy class time

Within the framework of the program, the children's development standard room is furnished and enriched with adaptive equipment for children with disabilities

Table 3. Research results

дд	Legal documents	Before Test/ After Test		
		Don't know	implements	Number of people included
1	4th and 10th goal of sustainable development	47/10	10/47	57/57
2	General recommendations of the Convention on the Rights of Persons with Disabilities 4	37/8	20/49	57/57
3	Order No. A/292 of 2019 of the Ministry of Education and Culture "Equal inclusion of children with disabilities in education"	49/10	8/47	57/57
4	Order No. A/155 of 2018 of the Ministry of Education, Culture, Sports, Science and Technology on the approval of "Exemplary model and development method of individual study plan",	47/8	10/49	57/57
5	Order No. A/325 of 2021 of the Ministry of Education and Culture "Evaluation of students studying with an individualized study plan"	41/6	16/51	57/57
6	Regulation A/184 of 2020 of the Ministry of Education and Culture "Creation of materials and learning environment suitable for students with disabilities in educational institutions at all levels",	45/5	12/52	57/57
7	Order No. A/296 of 2020 of Ministry of Education and Culture "Instructions for paying additional wages to teachers and assistant teachers working with children with disabilities in kindergartens and general education schools"	36/7	21/50	57/57
8	3.1.24, 4.1.6, 5.8.3, 10.1.9, 10.1.11 of the General Education Law	47/2	10/55	57/57
9	Chapter 3 of the Law on Preschool Education and General Education	42	15	57
Consolidation		391/61	122/452	513/513
Specification		76%/12	24%/88	

The study of the legal knowledge of the teachers involved in the study of inclusive education was compared with that before and after the start of the program. According to the survey, 76% answered that

they did not know about inclusive education, while after the experiment 88% answered that it is being implemented, and their knowledge and skills have improved. Also, there were 45 teachers who were unable to diagnose the developmental fear of students with disabilities, then it decreased to 3, and 53 teachers learned to do it. When asked if they write individual lesson plans, 42 answered that they don't know, and then 47 teachers learned how to do it. Therefore, it is concluded that the teachers' knowledge of inclusive education has been improved through the Teacher Exchange Program and results have been achieved.

Conclusion

1. There is a lack of knowledge and understanding of society and teachers about inclusive education. It was considered that there is a need for teachers to learn how to work with children with disabilities and to develop individual training programs and to learn to identify developmental fears.
2. Within the framework of the Equal Inclusion Education Project, the work of empowering teachers through the Teacher Exchange Program has been successful, teachers have become competent, and the participation of students with disabilities who are taught by qualified teachers has increased in society.
3. We believe that the teachers of our school are fully prepared to implement the next activities within the framework of the project.
4. It is concluded that the teachers' knowledge of inclusive education has been improved through the teacher exchange program.

Advice

1. Teachers should focus on self-development by studying policy documents to increase their knowledge about education laws, inclusive education, and students with disabilities.
2. Teachers participate in the "Teacher Exchange Program" to diagnose developmental problems of students with disabilities, develop individual learning plans, familiarize themselves with the activities of the support team, and learn how to recognize the specific differences in the development of children with disabilities and support them within the framework of the 4 stages of development.
3. View and study content that presents appropriate materials and equipment for development support for children with disabilities
4. Furnish the equipment and materials of the child development room and prepare for inclusive education
5. To learn from the experiences and methods of teachers and schools with experience in the field of inclusive education and to disseminate them

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5. Inclusive education professional development training module for middle school teachers in general education 1.2.3
6. Summary of Equality Education Policy 2022
7. Recommendations for implementation of inclusive education 2022
8. General Education Law 2023
9. Module for improving the capacity of stakeholders within the framework of the inclusive education project 2022 / not published /

10. Good practice in the current situation of inclusive education in general education schools 2021

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Some Results of Using Multimedia for Teaching Biology Course

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Abstract: Showing the content of the course using high-quality images, videos, and graphics, which is unique to the biology course, is important for learning outcomes. Multimedia is structured to design lessons with dynamic dynamic force. We conducted a surveillance survey on biology learning outcomes, satisfaction, learning materials, and the safety of teachers' teaching methods from 43 biology teachers and more than 500 students of Darkhan-Uul province. Based on this, a total of 24 multimedia lessons were prepared for VI, VII, and VIII classes on the following topics: "Basic Characteristics of Living Organisms", "Body Structure and Life Activities of Living Organisms", "Reproduction and Development of Living Organisms", and "Relationships between Living Organisms". Classroom lessons were taught to 30 students in the VI grade, 35 in the VII grade, and 34 in the VIII grade of the experimental grade, and 27 in the VI grade, 36 in the VII grade, and 32 in the VIII grade of the high quality control class. The learning outcomes of the biology course have improved through the post-test.

Keywords: iology learning outcomes, multimedia lessons,

1. INTRODUCTION

We have developed and implemented specific policies in the countries of the world and in our country regarding the rapid development of ICT, social needs, and the introduction of ICT into education. In this time of rapid development, it is important to create human resources with the necessary skills for the development of a knowledge-based economy. Knowledge is the main pillar of sustainable development and improving the quality of human life, and its basis is scientific knowledge.

The goal of the core program of biology in secondary education is "Students will acquire the knowledge and ability to independently learn creatively by applying biological language, methods, and thinking to process life, scientific and technological information, solve problems, and make decisions."

In biology, students will acquire the following knowledge, understanding, skills and attitudes:

- Attitudes to obtain information, analyze information, and use information technology ethically will develop through information and communication technology.
- Master basic communication skills. (H. Terbish...2018, 5p)

A survey of 43 high school biology teachers revealed that 29.4% of teachers spend 3 hours and 26.5% spend 4 hours preparing lessons. Among the things that teachers spend the most time on, 67.6% of teachers spend the most time on regular lesson preparation. Also, 41.2% answered that it takes a lot of time to develop progress tests. 64.7% of teachers answered that they would like information and communication technology, and 44.1% would ask for advice from experienced teachers when determining ways to develop their teaching methods. Therefore, the research showed that biology teachers are aware of the importance of developing their teaching methods with ICT, but lack ICT knowledge and use it less in teaching.

In a research article published by Obafemi Awolowo University, Nigeria, it is noted that multimedia affects the educational environment worldwide and is a tool to improve effective teaching and learning (Bukola O. Akinbadewa, 2020, p. 1267). Therefore, conducting experiments using multimedia in biology lessons and calculating the results is the basis of the research. In general, it is important for students to apply their theoretical knowledge in real life for biology courses. In the biology lesson, they created models of organ systems using multimedia on the topics of "Basic Characteristics of Living Bodies", "Structure of Living Bodies and Life Functions", "Reproduction and Development of Living Bodies", and "Interrelationships between Living Bodies" and related the functions of the structural features of organs. It took 2 months to prepare this course

2. Theoretical part

Electronic content development used in the learning and teaching process is designed for learner-centered learning rather than the traditional teacher-centered approach. Therefore, there is a need to use multimedia, programs, and equipment to help the training to be conducted efficiently (Ganbat, 2012, p.15). Any course is a complex activity that includes the teaching and learning process, its environment, materials, technology and communication that deliver materials to students.

Electronic educational content and materials will greatly contribute to the development of students' cognitive needs, stimulate interest in learning, improve learning methods, and improve their independent knowledge and education, and on the other hand, play an important role in increasing the quality and results of education. The process of developing e-content for use in learning and teaching is a step-by-step process that takes a systems approach. When developing electronic content, a common methodology with the steps of analysis, design, development, implementation and evaluation (the ADDIE: Analysis, Design, Development, implementation and Evaluation) is used (Ganbat, 2012, p.23).

In a research article issued by the Department of Basic Sciences, Deanship of Preparatory Year, Saudi Arabia, it was determined that the success of students improved significantly by introducing multimedia technology in biology lessons (N. Elkhidir 2020, 2p).

3. Research section

The purpose of the research: to conduct experiments using multimedia in biology lessons and calculate the results

Research objectives:

- Take a surveillance survey of the students at the secondary school and discover the needs and interests of the students.

- In the biology lesson, video lessons will be created using multimedia on the topics of "Basic characteristics of living organisms", "Structure of living organisms and life activities", "Reproduction and development of living organisms", "Interrelationships between living organisms".
- Consider research results for students when teaching multimedia lessons.

Survey Methodology:

Research method: The satisfaction survey was obtained from the students by questionnaire method. In the experimental and control classes, check sheets are opened, and the skills to be mastered by the analytical method of biology lessons are determined by comparing the level of performance evaluation by observing and performing tasks.

Research object: more than 500 students of 5 schools of EB. 194 students in experimental and control classes.

Research Hypothesis A faster and more interesting way to learn biology content in a wider range of subjects is multimedia. This has a positive effect on the learning outcomes of students.

Organization of experimental research:

This lesson was taught to 30 students in the VI class, 35 in the VII class, and 34 in the VIII class as an experimental class, and at the same time, the control class was taught to 27 students in the VI class, 36 in the VII class, and 32 in the VIII class.

Experimental research process: The experimental research was conducted in the following stages. In this.

1. More than 500 students of 5 schools of EB will be surveyed and needs will be determined by questionnaire.
2. A total of 24 multimedia lessons were prepared for the VI, VII, and VIII classes on the following topics: "Basic Characteristics of Living Bodies", "Structure of Living Bodies, Life Activities", "Reproduction and Development of Living Bodies", and "Relationships between Living Bodies". This lesson was taught to 30 students in class VI, 35 in class VII, and 34 students in class VIII as an experimental class, and at the same time, 27 students in class VI, 36 in class VII, and 32 students in class VIII were taught in the control class or in the traditional form.
3. . In the process of teaching the multimedia lesson, open a control sheet in 2 classes and determine the skills to be mastered by the MAS of the biology lesson by comparing the level of performance evaluation by observing and performing tasks.
4. Analyze the results of the research work and make an opinion.

Survey 1. Observational survey of students:

The survey was taken from more than 500 students of grades 6-9 in 5 schools of Darkhan-Uul province.

According to the answers of the students, the teachers teach their lessons in a clear way and are evaluated as very good in terms of teaching skills, but they said that they do not use advanced IT software in training.\

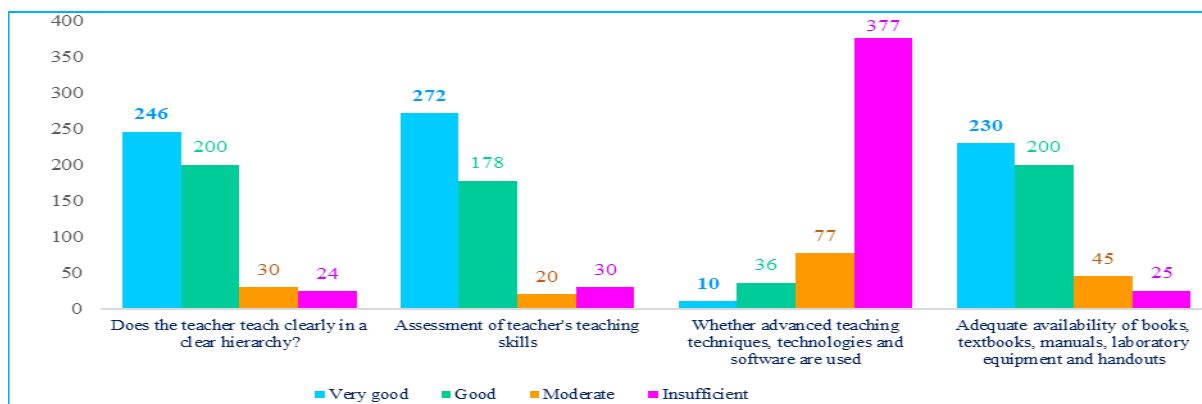


Fig. 1 Student Satisfaction Survey

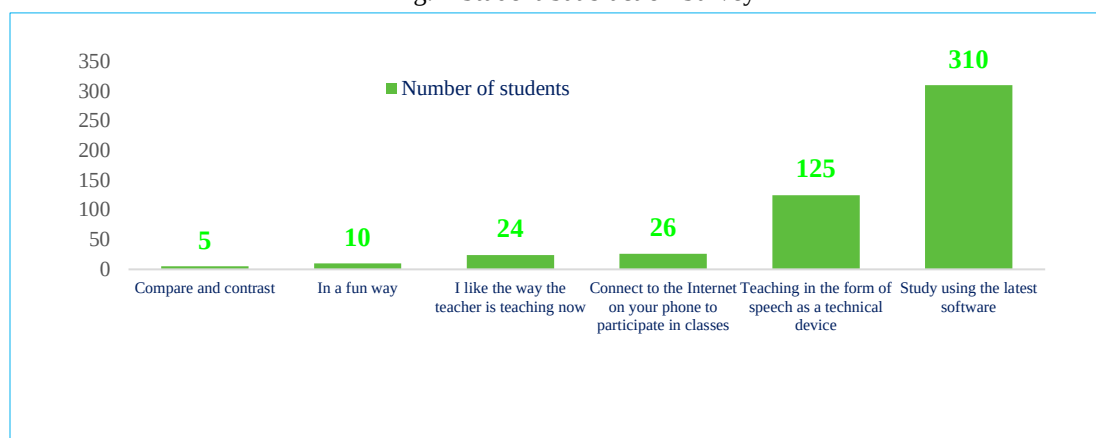


Fig. 2 What method of teaching would be interesting and understandable for you?

[Figure 2] According to the students' responses, it is clear that the teachers regularly use textbooks, televisions, and handouts to teach Biology, but the students are interested in taking classes with the latest technology and software.

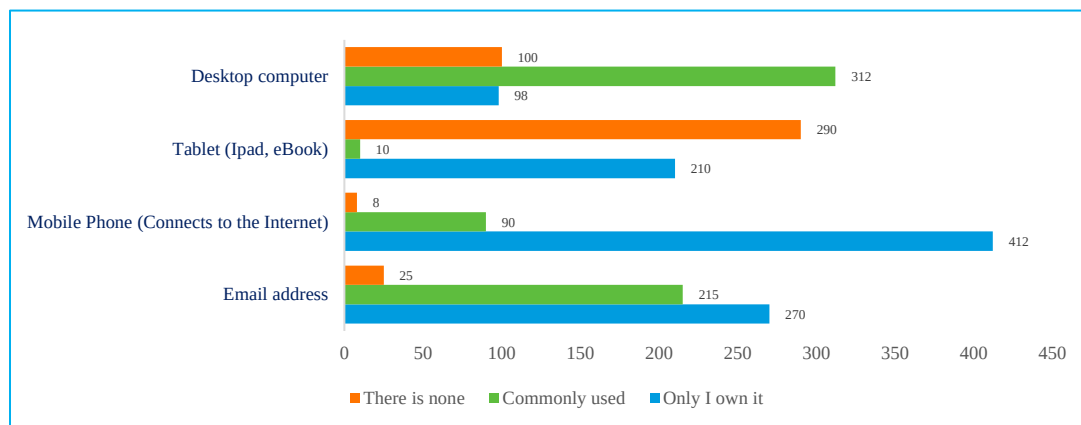


Fig. 3 Which of the following modern IT tools do you use the most?

[Figure 3] From the graph above, it can be seen that the majority of students have email addresses and use mobile phones as an IT tool. ndgnmul's smart classroom furnishings and equipment:



Fig. 4 Study the latest technology

Our students have the opportunity to study the latest technology.

Table 1. Topics taught using multimedia in biology classes:

№	Class	Group topic			
		Basic characteristics of living organisms	Structure of the living body and life activity	Reproduction and development of living organisms	Interrelationship between living organisms
1	VI	- Structure of plant and animal cells - Plant and animal tissue	- The organ system of the human body - Organs of the human body	- Seed germination - Plant growth	- Food chain - Building a food chain
2	VII	Differences in the structure of plant and animal cells-2 hours	- Position of human digestive organs - Position and structural features of the components of the respiratory organ system	Muscle organ, flower shape - Position of the main flower organ and stamen	- Food chains and food webs – 2 hours
3	VIII	-Identify common characteristics of plant classes-2 hours	- Structure and function of the digestive system - The structure and function of the respiratory system	Formation of fruits - Seed germination and composition	- Food chain-2 hours



Fig. 5 Student directory

In the recollection section of the regular course: Student directory / ADOBE FLASH program was used/
Creating New Knowledge: Creating Organ System Models / Using MozaBook.com/

In the section to reinforce new knowledge: student knowledge test /ISPRING Quiz maker program was used/

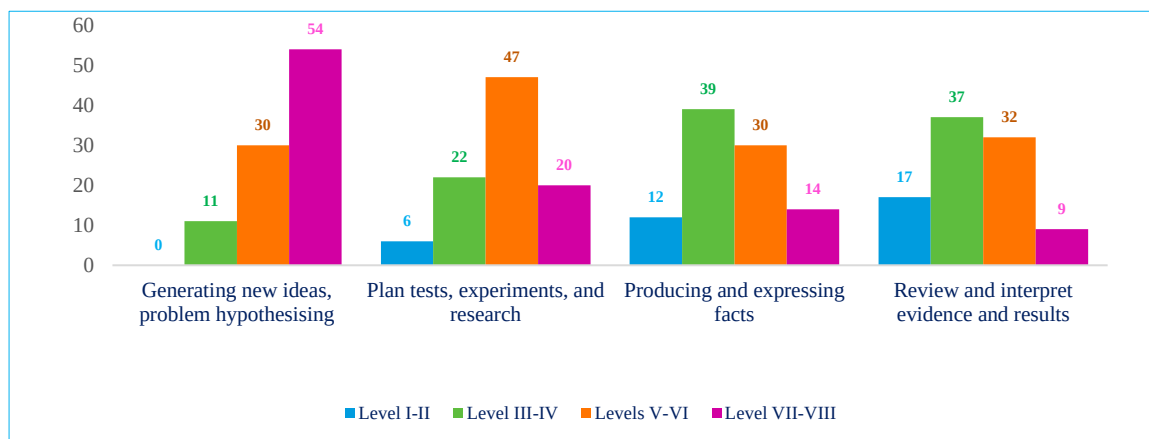


Fig. 6 Organization of multimedia courses:

[fig 6] By uploading the work created by the students on the smart screen, the structure of human and animal internal organs and the gas exchange during human inhalation and exhalation will be directly accessible and interesting for every child. Within the framework of basic education, natural science courses, including biology courses, teach students to acquire scientific methods and develop a scientific approach to any problem, which is important for providing students with a professional orientation. It is believed that the

assessment of students with the evaluation criteria that evaluates the scientific method at the 4 levels reached by the student will have a positive effect on the process of mastering the biology program.

Fig. 7. Ownership of SHUAB of the control class:

[Fig.7] In the process of teaching the multimedia lesson, a control sheet was opened in 2 classes, and the skills to be mastered in the biology course were determined by comparing the level of performance evaluation by observing and performing tasks. After the experiment, there was a significant improvement in the learning results of the students.

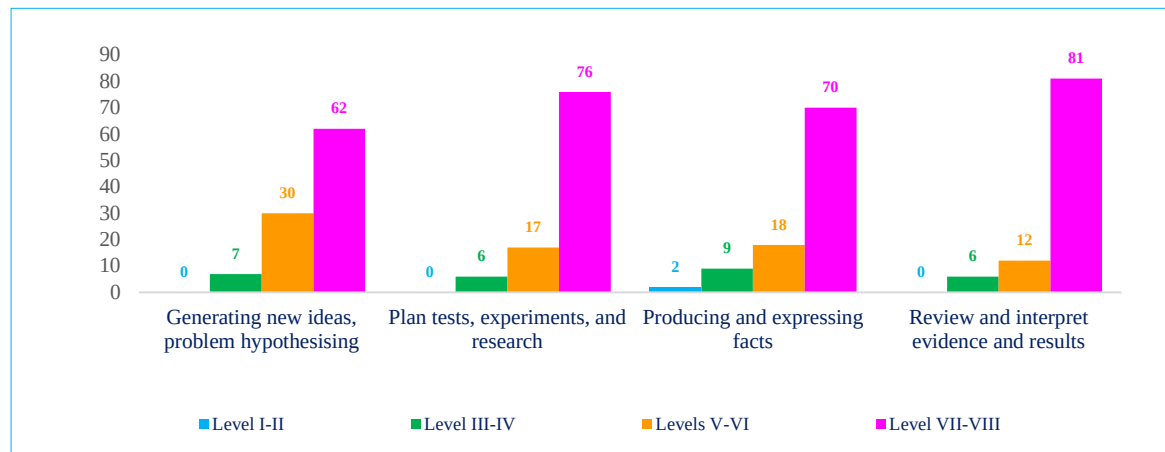


Fig. 7. Ownership of SHUAB of the control class:

The students of the control class have level III-IV of their ability to learn the standard of education. Due to the lack of experimental and practical work, the student's academic and skill progress is poor.

Fig. 8 Possession of the test class's SHUAB:

[Figure 8] The effectiveness of teaching using multimedia in teaching the students of the experimental class was evaluated by the teacher's observation method and performance evaluation levels V-VI, VII-VIII in the performance of tasks on the checklist.

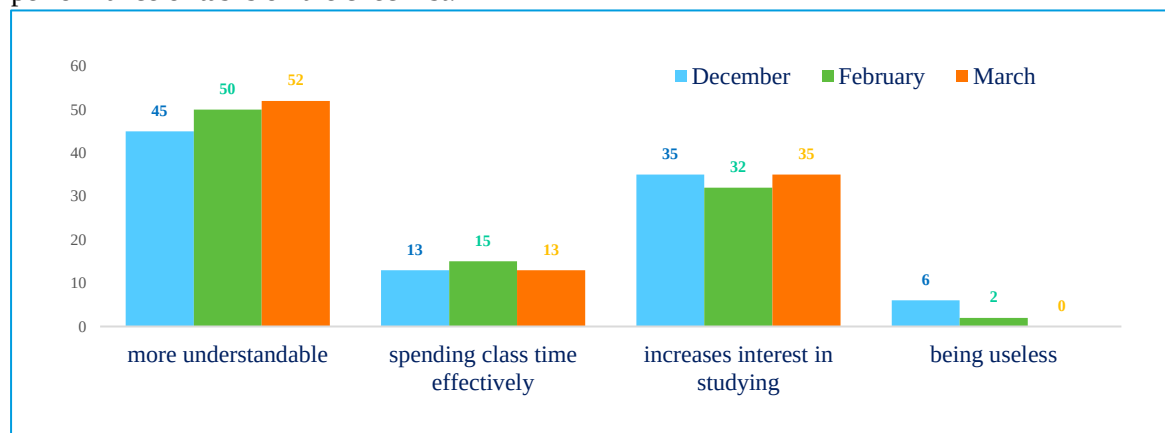


Fig. 8 Teaching using multimedia in the learning environment

Study 3 Results of the study

This lesson was tested in Darkhan-Uul province 12th school 6a, 7a, 8a, 1st school 6a, 7a, 8c and the following results were achieved.

[Figure 8] Most of the respondents, 85 percent, answered that the use of multimedia in teaching has the above-mentioned 3 different positive effects and results, while about 10 percent answered that it is not useful, which means that the students understand the content of the lesson better when the teacher uses multimedia in the lesson.

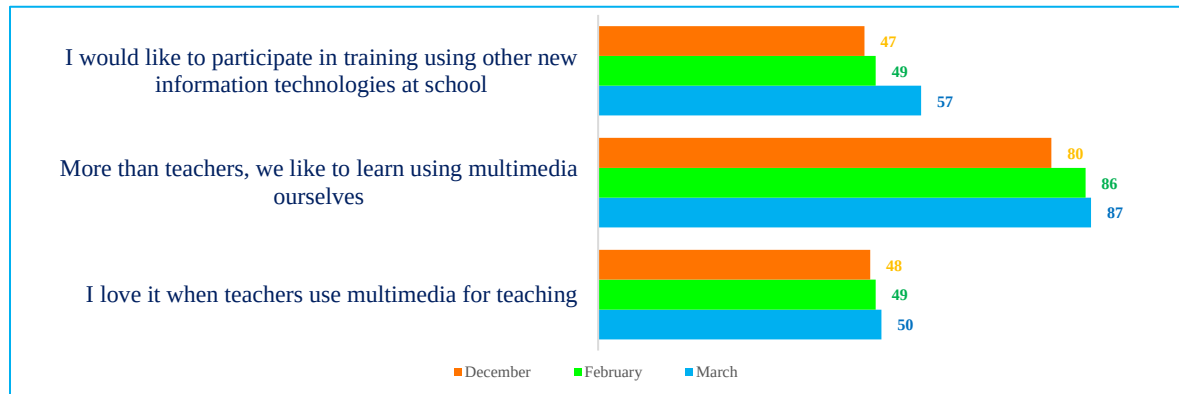


Fig. 9 What are your thoughts on using multimedia lessons for further learning?

[Figure 9] In the questionnaire taken to determine the attitude towards the future use of multimedia for educational purposes, it was seen that the majority of the participants, 85 percent, and 90 percent of the students like to learn using multimedia themselves, have a positive attitude.

Figure 10, 11, 12 Biology subjects suitable for multimedia and traditional teaching.

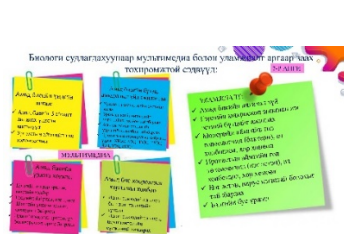


Fig. 10

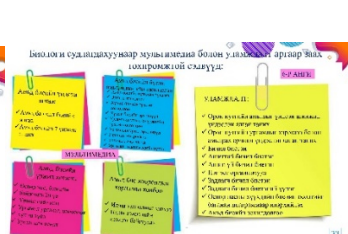


Fig. 11

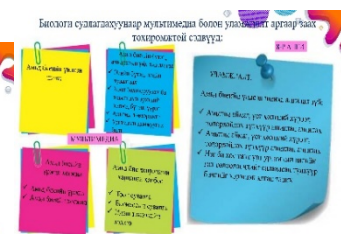


Fig. 12

[Figure 11, 12, 13] Traditional teaching topics can be made into multimedia.

Conclusion

1. The study shows that the use of smartphones is a high percentage of students' information technology tools and that they can use advanced technology independently.
2. In November 2023, 17 schools in Darkhan-Uul province had 19 smart classrooms with the investment of the state budget. It is an achievement that the introduction of ICT in the field of education has been started for our country. We need to increase the number of smart classes in the future.
3. The results of the study show the need to use advanced multimedia software in biology lessons. Therefore, teachers' information and communication technology skills
It is necessary to intensify the training for skill development.
4. Multimedia is a faster and more interesting way to learn the content of biology lessons. The hypothesis that it has a good effect on students' learning outcomes was confirmed by the research results.

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HSLs-11

Some Observation in The Mongolian & English Intensified Adjectives

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Abstract: This research work will be useful for students and researchers who compare and study Mongolian and English adjectives, especially the intensified adjectives and their similarities and differences. The author has attempted a theoretical and practical dissection of Mongolian and English intensified adjectives. Furthermore, in this research, we have made an attempt to study Mongolian-English adjectives from the point of view of meaning, including some features observed in the process of the intensity of Mongolian-English adjectives based on sources from Mongolian and foreign languages. Intensified adjectives are used to describe something that expresses stronger or sharper than normal meaning. Recently, researchers have been studying how to intensify adjectives from two languages and the meaning the adjectives express.

Ts. Onorbayan, Sc.D noted that "Mongolian adjectives are intensified by an analytical method. We use intensified adjectives with preceding words such as *maš, nen, tun, ulam, ülemž, tas, tsoo, tsav, nov*, etc." We describe some forms of Mongolian intensified adjectives and examples as follows: *maš, nen, tun, ülemž, asar, ulam, üneheer*, when these words occur before adjectives their meaning is intensified. For example; *maš sain, maš uhaantai, nen tüşigtej, tun čadvarlag, asar hurdan, ülemžijn čanar*, etc.

But some words are not creative and don't occur widely to intensify many adjectives, such as; *tas, čas, tsoo, tselden, čarmaj, pad, tag, azaj, tsel, šal, pig, tes, teg*. For example: *tas har* (totally black), *čas ulaan* (vermilion), *čarmaj nütsen* (completely naked), *tsoo šine* (brand new).

However, 'šal' can connect many adjectives and shows the negative meaning of intensified adjectives. This word can't connect with words, *ündür* (tall), *sajhan* (beautiful), *tsagaan* (white), *ulaan* (red), *mahlag* (stout).

The collected examples of English intensified adjectives are **absolutely, completely, entirely, perfectly, purely, quite, simply, totally** which are very creative. For example: You're **absolutely** right. This policy has been **completely** successful. The discussion was **purely** theoretical. ... Man on a horse and a man on the ground -- that is viewed as two **totally different** things, etc.

The English adjective 'too' is also used to intensify adjectives. When we use the intensified words **much too, far too** these words express (heterij ih) a negative meaning.

Mongolian and English adjectives are similar in that adjectives are intensified by an analytical method. But in some cases, the English adjectives meaning can be intensified by duplication. For example: a **big big** barn, an **old old** house, a **small small** puppy, a **wide wide** river. This is a different way to create intensified adjectives because the Mongolian language doesn't create intensified adjectives in that way. When using duplication with Mongolian adjectives it expresses plural. For example: *namhan namhan tolgod* (many short hills), *ündür üdür uul* (many high mountains).

The Altaic family' languages, specifically related to Mongolian adjectives add a constant '-v' the first open syllable of described adjectives and intensifies their meaning. These are used to describe color and shape

adjectives. These are not found in English adjectives. For example: tsav tsagaan (very white), bov bor (very dark brown), дүв дүрвүлжин (perfectly square), etc.

Keywords— *analytical method, intensified adjectives, duplication, Altaic family' languages*

1.Introduction

Nowadays, the number of people learning Russian in our country has decreased, but on the contrary, the number of people interested in learning and studying English has increased, and foreigners are also learning Mongolian. Also, in accordance with the fact that the teaching of English in all levels of schools in our country is increasing year by year, it is necessary to study the structure of Mongolian and English languages based on specific uses of the language. Dr. Mohyeldeen Mohamed Babiker said this about how the English language spread nowadays “Modern English has spread around the world since the 17th century as a consequence of the worldwide influence of the British Empire and the United States of America. Through all types of printed and electronic media of these countries, English has become the leading language of international discourse and the lingua franca in many regions and professional contexts such as science, navigation and law. English is the most spoken language in the world and the third-most spoken native language in the world, after Standard Chinese and Spanish. It is the most widely learned second language and is either the official language or one of the official languages in 59 sovereign states. There are more people who have learned English as a second language than there are native speakers” [13] .

The purpose of this research work is to compare Mongolian and English adjectives meaning, and to give a theoretical and practical dissection of intensified adjectives from both languages. In addition, the research provides a method to translate the intensified adjectives. A contrastive approach has been used throughout this research and information from Mongolian and foreign sources.

2. Survey Research

Domestic and foreign scientists executed a main role to study Mongolian and English intensified adjectives. For example, American linguists Joshua Baumgarten, Susan Conrad and Douglas Biber, Sandra A. Thompson, Italian **Silvia** Cacchiani, Danish linguist Otto Jespersen, English [Iryna Andrus](#), Mongolian linguists Oyuntsetseg.J, Gun-Uils.D, Onorbayan.Ts, etc. However, there are a lot of studies that study Mongolian and English adjectives separately, but there are not many studies comparing these two languages, especially intensified adjectives.

Some scholars who have studied the merits and usage characteristics of English intensified adjectives have put forward the following suggestions. For example,

Iryna Andrus said that “Intensifiers, when used appropriately, can significantly improve your English communication. They allow you to convey not just information, but also the intensity of your feelings, making your speech and writing more dynamic and vivid” [11].

Joshua Baumgarten noted that “COCA is a corpus made up of over one billion words from a variety of sources ranging from 1990 to 2019. From the COCA test results, very (688,083 tokens) clearly appears to be the most frequently used intensifier, exceeding so (474,461 tokens) by over 200,000 tokens. On the other hand, really trails quite significantly, with 177,116 tokens, and pretty is the least frequent of the four, making up 130,427 tokens. As these results are from many different registers, they are not necessarily indicative of the tendency for a particular intensifier to be used in a certain level of formality, but rather the

overall popularity of that intensifier. Therefore, we can see that very is the most popular choice across all the registers that make up COCA, with really and pretty occurring far less frequently” [1]. From this research work we can see which intensifiers are most frequently used in the English language.

Paloma Núñez Pertejo said that: “Intensifiers in English speech have received considerable attention in the literature, due to their flexibility, ongoing changes in the system, and the grammaticalization processes that some of them undergo” [14]. Some Mongolian linguists comparing Mongolian and English intensified adjectives, for example, Sunjidmaa.D, Munkhsaikhan.S, Narandelger.D and Gun-Uils.D, etc.

Sunjidmaa.D said that: “Intensification and weakening of the meaning of adjectives is one of the main characteristics of adjectives. Identifying the similarities and differences in the patterns of intensification and weakening of the meaning of the adjectives of Altai and Indo-European languages, Mongolian and English, especially the meaning of the adjectives indicated by color, and using them in training is essential for anyone studying English as a second language” [10].

Munkhsaikhan.S said some characteristics of Mongolian adjectives that: “In the process of communication, it is necessary to express the extent of the difference and how it was evaluated by the narrator, on the basis of distinguishing the characteristics of things in the scene. It is indicated by means of intensifying and weakening the meaning of the adjectives. Intensifying or weakening the meaning in this way is one of the important features of the Mongolian adjectives. In the Mongolian language, intensification and weakening are usually used to express the abstract nature of adjectives. Because when the narrator makes an abstract or implicit comparison, he compares how well the characteristic in the object corresponds to the information he has obtained, and simultaneously absorbs the emotional tone that indicates how well it corresponds to his mind. Therefore, the grammatical forms that intensify or weaken the meaning of an adjectives only add an additional note to the meaning of the word” [4]. Intensifiers, when used appropriately, can significantly improve your Mongolian and English communication. They allow us to convey not just information, but also the intensity of our feelings, making our speech and writing more dynamic and vivid.

3.Methods

The researchers have adopted contrastive analysis methodology to conduct this research. They contrast and compare some examples of the grammatical structure of Mongolian and English intensified adjectives. The data was collected from Mongolian literature and grammar book, grammar books of the English language as well as related websites, journals and some research materials.

4. Results, Data Analysis

Recently, researchers have been studying how to intensify adjectives from two languages and what meaning the adjectives express. Grammar books have also included this information: *Intensified* adjectives are used to describe something that has become stronger or faster than normal. Many researchers recognize that intensified adjectives serve an expressive function, allowing speakers to convey nuances of meaning or emotion more vividly. These adjectives can add emphasis or intensity to a statement, helping to convey the speaker's attitude or viewpoint more effectively. These intensified adjectives can transform a simple statement into one brimming with emotion or emphasis, turning "happy" into "incredibly happy" or "hot" into "so hot."

The meaning of Mongolian adjectives is intensified in several ways. Ts. Onorbayan, Sc.D noted that "Mongolian adjectives are intensified by an analytical method. We use intensified adjectives with subordinating words such as *maš, nen, tun, ulam, ülemž, tas, tsoo, tsav, nov*, etc." (2020). Munkhsaikhan.S said that similar concept like the previous researchers. He noted that, *maš, tun, asar, šal, pad, tojmgüj, hamgijn, hemžeelšgüj, učnuyn, tučnuyn, engüj, daanč*, etc, when these words occur before adjectives their meaning is intensified. For example; Ujgurnyrsajan hudaldaačid uridaar tatvaryg uursdijn hürüngünүүс gargaž ulsad tušaagaad, süüld ni uursdijn javž togtooson hemžeenes ilüü tatvarlaž asar ih ašig honžoo olž bajsan bilee (2016).

We describe some forms of Mongolian intensified adjectives and examples as follows:

a) *maš, nen, tun, ülemž, asar, ulam, üneheer*, when these words occur before adjectives their meaning is intensified. For example; *maš sain, maš hurdan, maš uhaantai, maš udaan, maš haluun, maš hol, maš muuhaj*

In "Modern Mongolian" (2020) the authors noted that: "Among adjective intensified words *maš, nen, tun, ülemž* more creative". This indicates that these words are creative for intensified meaning of adjectives. For example;

"Žaald tun šine, nadad nen huučín, ingheleer hojouland maani maš ujtgartaj bajna! Estelag duud!"

'So new to him, so old to me. And so sad to us both! Call Estella!' (Charles Dickens "Great expectations"). B. Purev-Ochir, ScD. has studied 'maš' from many sides and has noted that "... if we study the 'maš' from its derivation, the implicit meaning of a word, culture and utilization, shows that abstract and intensified meanings such as 'sajnaas sajn, muugaas muu' etc". We should study carefully the Mongolian 'maš', because it has many meaning ..." [8].

For example; Šašin tūrijg hoslon barigč Narangerelt Bogd haany mūngūn erdene tamgany (1911) deed tald bolon dūrvūn tald ni "Tenger enh, Tūvšin delhij, Tūr **maš** bat, Šašin **maš** tungalag" hemeen mongol bičgeer utga tūgūldır, aguulga gün bičsen bajdag." (O. Batsajhan).

b) *tas, čas, tsoo, tselden, čarmaj, pad, tag, azaj, tsel, šal, pig, tes, teg*. These words are not creative and don't occur widely to intensify many adjectives. For example: *tas har* (totally black), *čas ulaan* (vermillion), *tsoo šine* (brand new).

Zaluu bajldagčijn hūzūū, hatsar, čih ni **čas** ulaan bolž gutlynhaa honšooryg širten zogsož

However, 'šal' can connect many adjectives and shows the negative meaning of intensified adjectives. For example: *šal sonin, šal buruu, šal demij, šal hereggüj etc*. This word can't connect with words, *undur* (tall), *sajhan* (beautiful), *tsagaan* (white), *ulaan* (red), *mahlag* (stout).

c) Used widely in Mongolian are those adjectives that add a constant '-v' the first open syllable of described adjectives, mainly on the colour and shapes. For example: *hav har, bov bor, uv ulaan, huy huy, šav šar, duy dūrvūlžin, duv duguj, hav haranhuj*

Garyg min hūjten gee ju?

Zürh min **hav** haluun

Һүрүһүүс н үмнүү урж идмеер халуун шүү

Did you say my hands are cold?

However, my heart is **very** hot!

So hot that someone should tear and eat it

Before it cools down!

(M.Saruul-Erdene “A Pair Melody of the Stone Monument”)

d) Ts.Önörbayan, ScD. observed that modern Mongolian adjective ‘ih’ is used as a main function and intensifies an adjectives’ meaning. For example: *ih sajn, ih udaan, ih hol, ih ajultaj, ih sonin, ih hačín, ih jaduú, ih bajan, ih uhaantaj*.

In this research we noted that adjective “ih” can connect all adjectives and intensifies our collected examples. For example: “... Dantesijg үүчтэй байдлаасан хариу болгон **ih** үнэтэй алмааа надад талархлаа илэрхийлэн үүснэ”.

... a diamond of **great** value, which he gave to Dantes to express gratitude for the kindness and care which Dantes had nursed him during his illness. (Alexandre Dumas “The Count of Monte Cristo”)

Üünijg harsan Togoohüüd, jamar unagany eh jamar güü bolohyг нүдэлчиһеер олон удаа unaga tataagüjsen gež bodogdon **ih** l үүриймсүг сайхан санagdžee. (D.Batbayar “The Flying Deer”)

It warmed Togoohuu’s heart that Damba had remembered the mare and its foal, after such a short time being with her. (D.Batbayar “The Flying Deer”)

e) *hjazgaargüj, tojmgüj, too tomšgüj, мүн ч, даанч, һичнеен* etc, when these words occur before adjectives, their meaning is also intensified. For example; Ene žil taviž targaluulsan čin **engüj** sajhan temee bolžee. Daraa žil n taviž targaluulsan čin **daanč** sajhan bijetej targan tsagaan temee bolood iržee (Ts.Damdinsuren).

“Ene bajdal mini žaald **žigtejhen** hari gažuud, надад болоһоор **bür** ižil dasal bolž güitsžee” gež avhaj šivnev. ‘So strange to him, so well-known to me,’ she whispered (Charles Dickens “Great expectations”).

Olны һүлд дарagdaž zočloh dajlah ažil ni **hečneen** ih bajhyn hereer, **tučnuun** sajhan zantaj bajdag Tsetsegmaa guaj үүүүдүр бүр ч **haragdaagüj** sajhan zan aāštaj, **baragdahgüj** ih ažiltaj bajlaa (B.Baast). We can observe from this sentence, Mongolian words related to extent *hečneen, үчнүүн тучнүүн* and *haragdaagüj, baragdahgüj* expresses intensified meaning.

f) Intensified adjectives are used to express adjectives meaning. These are formed with grammar case ablative, genitive and repetition. For example: *holyn hol, alsyn als, sajnaas sajn, үндрийс үндүр, hurdnaas hurdan*.

Nojon Konrad von Burgen **tomoos tom** tavhajtaj atlaa **ih** l turi muutaj čүргүр урт һүлүү биčgijnhee šireen dooguur hijž мүлчгүр halzan dagzaa зүүлүн sandlynhaa түшlegt naagaad нүдее aniv (S.Erdene).

In addition, the collected examples of colored adjectives “har” that expresses negative and intensified meaning are mostly used figurative meaning in the speech. For example: *har үгһүүгүүр, har haluund, har hūjtend, har usan борооноор, har hurdaaraa, har mјangan*. Furthermore, the adjective “har” can be used to intensify meaning in writing. On this occasion it doesn’t express negative meaning, but expresses meaning “very”. For example: ... ene ažlyg **har** njalhaasaa guč hūrtlee hijž dadsan.

... she had done it this way from her childhood, for most of her thirty years (D.Batbayar “The Flying Deer”)

g) Sometimes we can express intensified adjectives with double adjectives. Example: *Danglar bi, zahidlaas tani tany bajšind **hjazgaargüj ih** zeel үгүһ болomž bajгаа gež unšlaa*.

Danglars reading from the letter said: “This letter gives **unlimited** credit on the house”. (Alexandre Dumas) When people talk about English adjective intensifiers, they are usually referring to adverbs which modify adjectives. For example: Ruth is **very** creative and always coming up with new ideas.

For a man of 80, James has a **remarkably** agile mind.

”The water is **very** deep and I’m afraid to dive into it”

English intensifying adjectives:

a) Emphasizers (giving a general heightening effect): a clear failure, a definite loss, plain nonsense, a real hero, the simple truth, a true scholar, a sure sign.

b) Amplifiers (denoting a high or extreme degree): a complete victory, total nonsense, the absolute truth, a great scholar, a strong opponent, utter stupidity, the entire world. (E.M.Gordon, I.P.Krylova.)

The collected examples of English intensified adjectives are **absolutely**, **completely**, **entirely**, **perfectly**, **purely**, **quite**, **simply**, **totally** which are very creative. For example: You're **absolutely** right. This policy has been **completely** successful. The discussion was **purely** theoretical. His performance was **remarkably** brilliant, earning his standing ovations. Man on a horse and a man on the ground -- that is viewed as two **totally different** things. etc.

The English adjective 'too' is also used to intensify adjectives. When we use the intensified words **much too**, **far too** these words express (heterhij ih) a negative meaning.

For example: The shoes are **too big** for her – Ene gutal ter emegtejd **dendüü tomdož** bajna.

There is **too much** sugar in it-Ene **dendüü ih** čihertej jum bajna.

I think you work **too hard**-Bi čamajg **dendüü šurguu** ažilladag gež boddog.

And we can observe it translates into Mongolian as “heterhij” and we can compare the next examples.

Table I

too + adj	much too / far too + adj
John is too old for her- Žon ter emegtejgees ih ahimag nastaj haragddag.	John is much too old for her- Žon ter emegtejgees heterhij hugšin haragddag
She is too young for him – Ter emegtej tüünij hažuud ih zaluu haragddag	She is far too young for him - Ter emegtej tüünij hažuud heterhij zaluu haragddag (also : a bit too young)
Elena is too tall – Elen bol maš undur emegtej	Elena is much too tall – Elen bol heterhij undur emegtej (also: a bit too tall)
This tea is too hot.You can't drink it. – Ene tsaj het haluun bajna. Či üünijg uuž bolohgüj	This food is very sweet. It has too much sugar. -Ene hool maš čihertej jum. Üünd het ih elsen čihertej bajna

The above table (1) shows the use of Mongolian and English intensified adjectives. The model **too+adj** is belong with the Mongolian intensifiers **ih** or **maš**, but model **much too (far too)+adj** is belong with the Mongolian intensifier **het, heterhij**.

Table Ii

too much+ uncountable noun	het + adj
There is too much pollution in the air	Agaart het ih bohirdol bajna
too many+ countable noun	het + adj
The class has too many students. Some of them don't have desks.	Angid het olon ojutan bajna. Tednij zarimd ni širee bajhgüj.
too ... for somebody / something	heterhij + adj
This bag is too heavy for me.	Ene tsüh nadad heterhij hünd bajna
too ... to do something	heterhij + adj
My soup is too hot to drink.	Minij šul uuhad heterhij haluun bajna

The above table (2) shows the use of Mongolian intensified adjectives. The model **too much+ uncountable noun** or **too many+ countable noun** belongs with the Mongolian intensifiers **het + adj**, but model **too ... for somebody / something** or **too ... to do something** belongs with the Mongolian intensifier **heterhij + adj**

Recently, in the Mongolian language process of speech communication some people use the two words “ajmaar, ajagüj” /terrible and disagreeable/ in order to emphasize what they are saying instead of an adjective intensify. For example, "unbelievably beautiful", "horribly beautiful", "disagreeable pretty" and so on.

It is necessary to say that it is terribly wild and fierce, has a bad smell, and is frighteningly large. Thinking about the fact that it is "horribly beautiful and beautiful" leads to the logical error of being afraid of beautiful things and beautiful things without beauty.

Strong adjectives are those emphasizing the feeling without additional words. For example, instead of saying “very big,” you can say “enormous.” Firstly, such adjectives help to convey your emotions precisely. Secondly, they enrich your vocabulary, so it will be easier to avoid repetitive sentences. Here are some of Mongolian and English adjectives with intensifiers and their one-word equivalents [11]. These one-word equivalents are not found in Mongolian adjectives with intensifier. In other words, it can be seen from table (3) that when intensifying the meaning of Mongolian adjectives, it is not intensified by a single word, but necessarily creates an intensifier+adjective, like a **Mongolian adjective with Intensifier**

Table Iii

English adjective with Intensifier	One-Word Equivalent	Mongolian adjective with Intensifier	One-Word Equivalent
very cold	freezing	maš hüjten	tesgem hüjten
very hot	scorching	maš haluun	aagim haluun
very important	crucial	maš čuhal	amin čuhal
very clean	spotless	maš tseverhen	tsev tseverhen
very dirty	filthy	maš bohir	tujlyn bohir
very happy	ecstatic	maš bajartaj	tujlyn bajartaj

Conclusion

1. Mongolian and English adjectives can be intensified by intensify words. This is one main aspect of an adjectives' meaning. When these words (*maš, nen, tun, ülemž, asar, ulam, üneheer*) occur before Mongolian adjectives the adjectives' meaning is intensified. Words such as, *absolutely, completely, entirely, perfectly, purely, quite, simply, totally* are very creative in English. Mongolian adjectives are more creative than English adjectives to create an intensified meaning.

The Altaic family' languages, specifically related to Mongolian adjectives add a constant '-v' the first open syllable of described adjectives and intensifies their meaning. These are used to describe color and shape adjectives. These are not found in English adjectives.

For example:

gegeen (bright)	gev gegeen (very bright)
tselger (open)	tsev tselger (wide open)
düüren (full)	düv düüren (brill full)

2. Mongolian and English adjectives are similar in that adjectives are intensified by an analytical method. But in some cases, the English adjectives meaning can be intensified by duplication. For example: a big big barn, an old old house, a small small puppy, a wide wide river. This is a different way to create intensified adjectives because the Mongolian language doesn't create intensified adjectives in that way. When using duplication with Mongolian adjectives it expresses plural. For example: *ундур ундур уул* (many high mountains)

3. The English adjective 'too' is used to intensify adjectives meaning. When we use the intensified words *much too, far too* these words express extremeness (*heterhij ih*) which is a negative meaning in Mongolian and English.

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SSBA-13

Arts and Cultural Marketing: A Systematic Literature Review and Future Research Agenda

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Abstract: Arts and cultural marketing is a complex activity embedded in the political, socio-economic and technological contexts where the arts sector is situated. The study of arts marketing is a relatively established concept since 1960s. The scientific community and arts marketer's growing interest in arts marketing literature can be traced through the abundance of published literature on the topic. However, research is still lacking a comprehensive view of thematic evolution, dominant knowledge structures. Therefore, this study aims to present arts marketing literature publication trends and intellectual structures. Following a systematic search of arts marketing literature, we found 469 peer-reviewed journal articles based on PRISMA flow chart for extracting literature review sample. A range of bibliometric analytics were employed to understand annual trajectory of publications, top 10 journals publishing arts marketing literature, top 10 countries, word cloud, thematic evolution, and thematic maps. Findings show that there is more attraction towards arts marketing literature since the year 2010.

Keywords— arts marketing, cultural marketing, bibliometric analysis, Rstudio, Vosviewer.

HSLS-15

A Study of the Animal Metaphor for Emotional Expressions

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Abstract: This study is motivated by the fact that there have been few studies on the use of metaphors for emotions. This study focuses on animal metaphors referring to emotions in Mongolian from a cognitive perspective. For this reason, this study attempts to propose a proper cultural model to treat the emotion concepts in Mongolian and demonstrate how cultural aspects, figurative languages of emotions, and human physiology play active roles in this system of language and culture. Thus, adopting a cognitive linguistic perspective, this study investigates the animal metaphors referring to emotions in different languages. Specifically, it examines culture-specific and language-specific realizations of conceptual metaphors for emotions in different cultures within the CMT framework.

Keywords: *language, culture, cognition, metaphor, source and target domain*

1. Introduction

This study is motivated by the fact that there have been very few studies on the use of metaphors in Mongolian from a cognitive perspective which is a relatively new idea for Mongolian linguistics. For this reason, this study attempts to propose a proper cultural model to treat the emotion concepts in Mongolian and demonstrate how cultural aspects, figurative languages of emotions, and human physiology play active roles in this system of language and culture. Thus, adopting a cognitive linguistic perspective, this study investigates the metaphorical linguistic expressions of emotional concepts about *anger* in Mongolian. Specifically, it examines culture-specific and language-specific realizations of conceptual metaphors for emotions in the two languages within the CMT framework.

This current study highlights the importance of culture for understanding the relationship between metaphor, culture, and cognition and it provides comparative generalizations for the four basic emotion concepts and gives the fundamental explanations in Mongolian. The concept of emotion has been described variously depending on the psychological, anthropological, and linguistic points of view. It was defined as "a strong feeling of any kind: love, joy, hate, fear and jealousy are all emotions" in the Oxford Advanced Learner's Dictionary (1996). From a psychological viewpoint, emotion was defined as a mental event. The concept of emotion was investigated earlier within psychology by several scholars such as Wundt (1924) and Titchener (1910). Watson (1919) argues that emotion is behavior, and Wenger (1950) claims that emotion is a type of physiological activity. However, Alston (1967: 480) provides another definition of emotion using the following six factors as in the following: (1) a cognition of something in some way desirable or undesirable, (2) feelings of certain kinds (3) marked bodily sensations of some kind (4) involuntary bodily processes and overt expression of a certain kind (5) tendencies to act in certain ways (6) an upset or disturbed condition of mind or body. Many researchers focus on emotion and they attempt to

provide definitions of emotion in various ways. In Izard (1972: 51), emotion was defined as "a complex process that has neuro-physiological, motor-expressive, and phenomenological aspects". Ortony (1988:8) writes that "emotions are not themselves linguistic things, but the most readily available non-phenomenal access we have to them is through language". Kövecses (1989; 2000) point out that linguistic sources have long been an important source of information about emotional concepts.

This study investigates how conceptual metaphors are manifested in different cultures around the world. Specifically, this part provides a brief analysis of emotion metaphors in Western, Eastern, and some African cultures including Spanish, Turkish, Akan, Chinese, Hungarian, Japanese, and Korean from a cognitive perspective point of view. Conceptual metaphors are an inseparable part of any culture. According to the current view of anthropology, a particular culture is defined as a set of shared understandings that characterize smaller or larger groups of people. Many researchers focus on the concept of emotion and their opinions about emotions vary depending on the psychological, anthropological, and linguistic points of view. The componential analysis is very valuable for understanding specific semantic domains of shared knowledge. Extensive studies of linguistics have been done with the support of this approach. Kövecses (1986, 1988, 1990, 2000) suggests that many emotions including anger love, happiness, sadness, pride, and so on are characterized as prototypically organized cognitive models based on the prototypical analysis.

2. Methods of the Study

2.1. Data Collection

This study is conducted within the framework of Conceptual Metaphor Theory¹ proposed by Lakoff and Johnson (1980). The main tenets of CMT are as follows: (a) metaphors structure thinking, (b) metaphor's structure knowledge (c) metaphor is central to abstract language, (d) metaphor is grounded in physical experience, and metaphor is ideological. Lakoff and Johnson (1980) argued for the existence of links between ideas which they call conceptual metaphors. A conceptual metaphor is a connection between two semantic areas including source and target domains. For instance, ANGER IS FIRE is a conceptual metaphor. In this metaphor, "fire" in the source domain applies to "anger" in the target domain. The source domain is typically concrete, but the target domain is abstract. The relationship between metaphorical thinking and speaking is often described by linguistic metaphors. In this study², we call them linguistic metaphorical expressions that realize conceptual metaphors in the two languages (e.g. **Mongolian**: *Ter uurandaa shataj bailaa. lit., She was burning in her anger. fig., she was very angry*). These metaphorical linguistic expressions make the conceptual metaphor ANGER IS FIRE manifest in the two languages.

Generally, this study has been conducted in the following steps: The metaphorical expressions of anger in English are mainly compiled from the previous studies on emotion metaphors in English. Before revealing the similarities and variations in emotional metaphors in the two languages, I focused on the observation of linguistic metaphorical expressions in Mongolian. Therefore, the Mongolian data were primary data generated through the observation of linguistic expressions from different sources manually, and the

¹ Conceptual Metaphor Theory rejects the idea that metaphor is a decorative device, instead, this theory (Lakoff and Johnson 1980: 3) explains that "metaphor is central to thought, and therefore to language". In the conceptual metaphor literature, small capital letters are used to denote a conceptual metaphor which shows the existence of the concept in a culture.

² The current thesis includes some examples of the figurative language of simile, metaphor and metonymy in English and Mongolian for the purpose of the study even though those topics are different from the main topic.

examples of metaphorical expressions in Mongolian were collected from a variety of genres including popular songs, main online social news sites, journals, and magazines, novels, scripts of movies and TV talk shows, historical sources and daily spoken dialogues of the native speakers of Mongolian. Therefore, the research was gathered from several sources both written and spoken discourse in Mongolian. This study adopts the MIP (The Metaphor Identification Procedure, Steen 1999) for identifying metaphorical expressions in Mongolian. Lastly, the differences of emotional metaphors have been analyzed along several selected parameters by Barcelona (2001) and Kövecses (2001).

2.2. The Metaphor Identification Procedure

In recent years, several proposals have been made to systematize the method for identifying metaphorically used words in discourse. (eg., Pragglejaz group 2007; Crisp et al., 2007; Steen 1999) The Metaphor Identification Procedure (Steen 1999) is a practical, and systematic method for identifying metaphorically used words in discourse. This five-step procedure of MIP incorporates both linguistic and conceptual metaphor identification in the following: (1) identifying metaphorical focus (2) identifying metaphorical idea (3) identifying metaphorical comparison (4) identifying metaphorical analogy (5) identifying metaphorical mapping.

The following steps were taken in identifying linguistic metaphors from the Mongolian data: First, after attentively reading the entire text from different sources, the general understanding of the meaning was established. Second, it needed to be checked the lexical units in the text whether any of the words in the discussion had been used metaphorically. Third, for each lexical unit, its basic meaning was determined. The next step was to decide whether the basic meaning of the word was sufficiently distinct from the contextual meaning. Then we analyzed whether the contextual meaning of the word was related to its basic meaning by some form of similarity. The final step was to mark the lexical unit as metaphorical. The last two stages of Steen's procedure were applied in inferring conceptual metaphors from linguistic metaphors. Specifically, the step for identifying metaphorical analogy involves making more specific connections between elements in the source and target domains. The identification of such metaphorical analogies then became the basis for understanding metaphorical mapping. Linguistic expressions that contained either actual word for target domains ANGER were selected from the data. The expressions were grouped according to their relatedness of the domains. After defining source domains, elements in them were then identified and the metaphorical mapping for the conceptual metaphors was established in the study.

In addition, the Romanization System is used to transcribe the Mongolian examples. In this study, three levels of translation for Mongolian metaphorical expressions were provided, namely, an interlinear glossing, a literal translation, and an English equivalent of figurative meanings.

3. Results and Discussion

3.1. Similarities of Animal metaphors in English and Mongolian

The basic-level metaphor ANGER IS A CAPTIVE ANIMAL entails ANGRY BEHAVIOR IS AGGRESSIVE ANIMAL BEHAVIOR sub metaphor. Both languages share this sub-metaphor. The speakers of English and Mongolian conceptualize angry behavior as aggressive animal behavior. But this metaphor is elaborated in different ways in the two languages. The linguistic elaborations will be discussed in more detail. Consider the examples below: ANGRY BEHAVIOR IS AGGRESSIVE ANIMAL BEHAVIOR English: Don't *snarl* at me! (Kövecses 2000: 21) Don't be so stupid, he *snarled*. (OALD)

Mongolian: "Yar yar" geed baihiim. (SD) lit., Being "Yar and yar" fig., He/She snarling. The expressions, *snarl at* in English, and *yar, yar geed baihiim* (lit., *being "yar yar"*) in Mongolian, refer to an angry person's behavior in the two languages. The word "snarl" implies the meaning of "showing the teeth and growling." Speaking in an angry bad-tempered voice is understood in terms of angry animal's sound like growling in both cultures. This is good evidence for the existence of the concept that ANGRY BEHAVIOR IS AGGRESSIVE ANIMAL BEHAVIOR in English and Mongolian.

The reason Why the two cultures share the same metaphor is that anger is regarded as a negative emotion, which causes a person to have some bad effects if one loses his/her control over being angry. This is the universal physiological process for humans. In the part of similarities, basic-level metaphors of anger existing in the two diverse cultures were discussed in more detail. Mongolian has the following culture-specific mappings of the ANGER IS A CAPTIVE ANIMAL metaphor: ANGER IS A LION AND TIGER: *Yama raimaasar aslan bar shigavgaive!* lit., *How a dreadful wife like a lion and tiger fig., Her anger is like a lion and tiger*; ANGER IS A BULL: *ulairsan buhshig* lit., *like a bull growing red fig., his/her anger is like an angry bull*; ANGER IS A HEDGEHOG: *tuntegneh* lit., *to be rounded fig., to be angry*; ANGRY BEHAVIOR IS AGGRESSIVE LION AND TIGER BEHAVIOR: *arslan bar shigdairah* lit., *to attack like a lion and tiger fig., to speak loudly because of anger*; ANGRY BEHAVIOR IS AGGRESSIVE BULL BEHAVIOR: *ulairsan buh shig dairah* lit., *to attack like a bull growing in red fig., to behave angrily*; ANGRY BEHAVIOR IS AGGRESSIVE DOG BEHAVIOR: *yaryarhiih* lit., *to make 'yar, yar' fig., to behave angrily and speak loudly*).

Anger is widely conceptualized as a dangerous animal in Mongolian and Korean. The conceptual metaphor ANGER IS A DANGEROUS ANIMAL indicates the lack of control of anger in both cultures. However, this concept has some culture-specific metaphorical entailments in Mongolian. Three sub-metaphors ANGER IS A DOG, ANGER IS A LION AND TIGER, ANGER IS A HEDGEHOG arise from this central metaphor. The metaphors ANGRY BEHAVIOR IS AGGRESSIVE ANIMAL BEHAVIOR, ANGRY SPEECH IS AGGRESSIVE DOG SOUND, and ANGRY BEHAVIOR IS AGGRESSIVE BULL BEHAVIOR are realizations of animal metaphors for anger.

3.2. Differences

This section discusses cultural variations in the conceptualization of anger metaphors in English and Mongolian from the perspective of cognitive linguistics. This part consists of several subsections that pertain to the differences in emotions with special reference to ANGER between the two languages. The main goal is to demonstrate how the concept of anger varies in sedentary and nomadic cultures. Thus, the differences have been analyzed along the three main parameters. The results of the study suggest that the greater level of specificity in the system brings more cross-cultural differences in English and Mongolian.

Differences due to the existence or non-existence of language-specific mappings

Parameter 1 concerns differences due to the existence or non-existence of language-specific mappings. This study has found that ANGER IS A HORSE; ANGER IS A SNAKE; ANGRY BEHAVIOR IS AGGRESSIVE HORSE BEHAVIOR; ANGRY SPEECH BEHAVIOR IS AGGRESSIVE SNAKE BEHAVIOR; ANGER IS AN OLD SNAKE SKIN mapping exists in English. These mappings do not exist in Mongolian. Instead, Mongolian has ANGER as a hedgehog; ANGER IS A DOG; ANGER IS A BULL; ANGER IS A LION OR TIGER; ANGRY BEHAVIOR IS AGGRESSIVE DOG BEHAVIOR; ANGRY BEHAVIOR IS AGGRESSIVE LION AND TIGER BEHAVIOR and ANGRY BEHAVIOR IS

AGGRESSIVE BULL BEHAVIOR language-specific mappings. There are different mappings of animal metaphors for anger in the two cultures. In English, the metaphor ANGER IS A CAPTIVE ANIMAL shows conceptual mapping from the source domain HORSE, SNAKE, AGGRESSIVE HORSE BEHAVIOR, AGGRESSIVE SNAKE BEHAVIOR, OLD SNAKE SKIN to the target domain ANGER and ANGRY BEHAVIOR. Moreover, the source domain of CHILD and PLANT apply to the target domain ANGER. But this basic-level metaphor shows conceptual mapping from the source domain DOG, BULL, LION AND TIGER, AGGRESSIVE DOG SOUND, AGGRESSIVE LION OR TIGER BEHAVIOR, and AGGRESSIVE BULL BEHAVIOR to the target domain ANGER and ANGRY BEHAVIOR in Mongolian.

Degrees of linguistic elaboration

This section discusses the differences according to the degrees of linguistic elaboration of anger metaphors in English and Mongolian. When comparing conceptual metaphors in the two languages, we find differences in the degrees of linguistic elaboration of shared mappings and non-shared mappings. Barcelona (2001) points out the difference between both languages owing to the existence of a version of the metaphor in one language and its absence, or limited use, in the other.

As mentioned in the previous section, both languages share the metaphor ANGRY BEHAVIOR IS AGGRESSIVE ANIMAL BEHAVIOR is also more elaborated in the nomadic culture.

Despite sharing the same basic-level metaphors, English and Mongolian share different culture-specific mappings of animal metaphors for anger with each other. First, Lakoff and Kövecses (1987) found a metaphorical source domain of animals that characterizes anger in English. Esenova (2009) investigated animal metaphors for anger in English and found several metaphorical entailments of ANGER IS A CAPTIVE ANIMAL metaphor. His investigation has contributed importantly to understanding the concept of anger in English. The basic-level metaphor ANGER IS A CAPTIVE ANIMAL which has already been mentioned entails ANGER IS A HORSE and ANGER IS A SNAKE special-case mapping in English. Thus, this central metaphor describes anger as a sleeping animal that is dangerous if it is awakened, something that needs to be restrained, and something with an unsuitable appetite. Esenova (2009) identifies that these metaphors map the source domains of ANIMAL, namely, HORSE and SNAKE onto the target domain ANGER. Consider the following linguistic realizations of that metaphor: ANGER IS A HORSE; English:

His common sense is a *bridle* to his quick temper. *Unbridled* anger Scipio *bridled* his indignation. Burun was unable to *rein in* his temper. I usually manage to *curb my* temper, and my anger when I'm at home, but at work I don't succeed. However, I will pay you to *curb* your famous temper. You must try to *put a curb* on your bad temper. (Esenova 2009) *bridle* rage; He *bridled* a little at her insensitive remarks. (OALD)

The linguistic expressions *bridle rage* and *rein in his temper* in the examples above imply figuratively the meaning of "to keep one's feelings", specifically, it refers to controlling anger and rage in English. In the example, the expression *curbs one's temper* expresses the meaning "to restrain or control his/her anger". The example that *he bridled a little at her insensitive remarks* shows that he is angry or offended about something, especially by moving one's head up or back in a proud way. Thus, the angry person's action is similar to the action of a bridled horse. All of these linguistic realizations belong to the HORSE domain implies the meaning of "to prevent a horse from getting out or to restrain and control it".

According to Esenova (2009), the metaphor ANGER IS A HORSE describes anger as a horse that is dangerous if it is not restrained. The harm that the horse may cause can be avoided if it is held under strict

control. Consider the following correspondences for the ANGER IS A HORSE metaphor:

Source: HORSE Target: ANGER

The horse corresponds to the anger

The bridles correspond to reason

Being bridled for the horse corresponds to anger being under control

Being unbridled for the horse corresponds to anger being out of control.

The owner of the horse corresponds to the angry person

The reasons why the HORSE domain is a suitable source domain for anger conceptualization are as follows:

An unbridled horse can cause harm to the horse owner and to others, and anger may cause harm to the angry person or others if it is not controlled. They have something in common. Apart from being a dangerous animal, a horse also has some other characteristics: it is a strong, powerful, and energetic animal and it shows intense reactions. Due to these reasons, Esenova claims that the HORSE domain gets mapped onto such an intensive emotional state as anger. Also, the conceptualization of anger as a horse is not a new idea.

This is a deeply entrenched way of thinking about anger in Western culture. He points out that the tendency to conceptualize anger in terms of a horse existed in Western culture long before the Shakespearean period. There have been many examples of anger in terms of a horse in old literature written by Shakespeare. Consider the following line: *English: Anger is like A full-hot horse, who being allow'd his way, Self-mettle tires him.* (Esenova 2009) In English, angry human behavior is understood in terms of the bridling behavior of a horse. The word *bridle* belongs to the HORSE domain. In the current discourse, however, *bridle* implies the meaning of *keeping one's emotional feelings*. In English, we can metaphorically say *bridle one's emotions/passions/ temper/rage*. The reason the speakers of English conceptualize anger as a horse is that people in a sedentary culture think that a horse is considered as a captive animal. However, Mongolians never consider that a horse is a dangerous animal. Instead, they describe a horse as the best friend for human beings. Nomadic people cannot imagine their life experiences without a horse and its great support. There are many positive metaphorical expressions regarding the horse in the nomadic culture. Native speakers of English perceive a horse's bridling behavior as a sign of aggression. When a horse bridles, it tries to escape and wants to be free from displeasure. Esenova (2009) found another kind of anger metaphor mapping the SNAKE source domain onto the target domain of ANGER. He found that angry behavior is understood in terms of aggressive snake behavior. The ANGRY SPEECH BEHAVIOR IS AGGRESSIVE SNAKE BEHAVIOR is a sub mapping of the metaphor ANGRY BEHAVIOR IS AGGRESSIVE ANIMAL BEHAVIOR. English: "You shall yet repent this", he *hissed*. In a *venomous attack* on the family, Mann Booker Prize winner Anne Enright wrote that she was "angry" that Kate and Gerry McCann "refused to accept" their daughter was dead. (Esenova 2009)

The expressions *hissed* and *venomous attack* show that an angry person's speech behavior is understood in terms of aggressive snake behavior in English. Moreover, Esenova (2009) found that ANGER IS AN OLD SNAKE SKIN metaphor in English. He suggests that the metaphor ANGER IS AN OLD SNAKE SKIN is motivated by the biological process of skin shedding in snakes. The poor shedding in snakes is believed to be a sign of bad health or another imbalance in its organism. In a parallel fashion, the retention of anger is understood to be mentally harmful for the angry person. He provides the following correspondences for this metaphor as follows:

Source: OLD SNAKE SKIN Target: ANGER

The old snake skin corresponds to anger.

The snake corresponds to the angry person.

Carrying of the old snake skin corresponds to experiencing anger.

Casting off the old snake skin corresponds to getting rid of anger.

The new snakeskin corresponds to the new positive emotion/trait.

The skin renewal in the snake corresponds to the emotion/mental in the angry person.

In Western culture, the use of "snake" refers to both positive and negative ideas. This culture-specific mapping does not exist in Mongolian.

The concept of ANGER IS A CAPTIVE ANIMAL has some culture-specific metaphorical entailments in Mongolian. Three sub-metaphors ANGER IS A DOG, ANGER IS A LION OR TIGER and ANGER IS A HEDGEHOG arise from this central metaphor ANGER IS A CAPTIVE ANIMAL. The metaphor ANGRY BEHAVIOR IS AGGRESSIVE ANIMAL BEHAVIOR has the following metaphorical entailments: ANGRY BEHAVIOR IS AGGRESSIVE LION OR TIGER BEHAVIOR, ANGRY SPEECH IS AGGRESSIVE DOG SOUND, and ANGRY BEHAVIOR IS AGGRESSIVE BULL BEHAVIOR which are elaborated with culture-specific linguistic realizations of animal metaphors for anger. Consider the following usages of anger in Mongolian: ANGER IS A DOG; *Harvisaa hazah Khasar nohoi met* (SHM: 78) lit., Like Khasar dog biting its placenta. fig., your angry action was like a dog named "Khasar" gnawing on its own after birth. *Balmad dovtloh barug (nohoi) met barav.* (SHM: 78) lit., like a dog attack foolishly and destroys. fig., your anger was like a dog attacking wildly and causing him to die.

In the examples above, the expression *hashaani nohoi shig sanagdchihlaa* (lit., she seems like a dog of the fence) implies that her angry behavior is like an aggressive dog in the fence. The metaphorical expression found from the classical historical source *The Secret History of Mongols*³ (SHM: 78), *harvisaa hazah Khasar nohoi met* (lit., like Khasar⁴ dog biting its own placenta), implies that an angry person is compared to an aggressive dog. Specifically, losing control because of anger is understood in terms of AN aggressive dog that bites one's placenta. In (137), the expression *balmad dovtloh nohoi met barav* (lit., like a dog foolishly attacking and destroyed) means figuratively "Your anger was like a dog attacking foolishly and caused him to die". Thus, the DOG domain has been used to express anger in Mongolia since the 13th century and long before that. This is not a newly created concept in the nomadic culture. The dog barks at something or somebody to protect its belongings, and so it is very dangerous to others if it is untied. Anger is figuratively comparable to a dog, in that, if the self loses his/her control, it is harmful to others.

The data in this study show that the concept of anger has been rich with metaphorical expressions since ancient times in Mongolia. For instance, Temujin⁵ and Khasar's⁶ angry behavior was described

³ The Secret History of the Mongols (1227) is the oldest literary work written for the Mongol royal family sometime after Chingis Khan's death in 1227. It is very unique and contains epic poetry written so skillfully and indeed artistically blended with fictional and historical accounts. Moreover, this classical source is rich with linguistic metaphorical expressions manifesting the concept of emotions including anger, sadness, and happiness.

⁴ This word was explained in more detail in Mongolian Advanced Explanation Dictionary as follows: "Khasar is an archaic use of the oldest name for Mongolian dog and wild animal. In Mongolian folk tales and legends "Khasar and Basar" are described as the strongest and powerful Mongolian dogs. The word "Khasar" was originated from the word "arlsan"(lion) and the word "Basar" was originated from the word "bar"(tiger) as a result of vowel alternations in Mongolian".

⁵ Chingis Khan, born Temujin, was the founder and the Great Khan of the Mongol Empire.

⁶ Chingis Khan's younger brother was named "Khasar".

metaphorically as a dog, lion, and tiger in *The Secret History of the Mongols* (SHM: 78). The conceptual metaphor ANGER IS A LION OR TIGER is more conventionalized in Mongolian. In this metaphor, the source domain "a lion or tiger" applies to anger in the target domain. Consider the examples below: ANGER IS A LION OR TIGER; Mongolian: *Khadand dovtloh hablan⁷ bar met* (SHM: 78), lit., like a tiger attacking on the rocks. fig., your anger was like a tiger attacking others. *Aguuraa daran yadah arslan met* (SHM: 78), lit., like a lion trying to suppress its anger. fig., your anger was like an angry lion that cannot control its anger. *Barij ul saarah bars met* (SHM: 78), lit., like tigers that can't be held. fig., your anger was like tigers that were unable to control their anger.

The most common metaphorical linguistic expressions of anger are shown in the cited examples. In these examples, the angry person is understood in terms of a lion or tiger in Mongolian. In The expression, *arslan bar shig* (lit., like a lion and tiger) is a more conventionalized collocation to refer to an angry person in the nomadic culture. The expression *khadand dovtloh hablan met* (lit., like a tiger attacking the rocks) means figuratively "Your anger was like an angry tiger attacking the others". The expression *aguuraa daran yadah arslan met* (lit., like a lion trying to suppress its anger) shows that an angry person is viewed as an angry lion that cannot control his anger. In the example, the expression *barij ul saarah bars met* (lit., like the tigers that can't be held) means "Your anger was like tigers that unable to control their anger and fury" and it also shows that an angry person is compared to an angry tiger in Mongolian. The examples found in *The Secret History of the Mongols* (SHM: 1227) suggest that Mongolians have conceptualized anger as a lion or tiger since the 13th Century or before.

The concept ANGER IS A HEDGEHOG exists in Mongolian, but this mapping does not exist in English. Since ancient times, Mongolians have conceptualized an angry person as a hedgehog based on the similar characteristics of physical appearance of an angry person and a hedgehog. There is a metaphorical riddle that says "*Tuntger uvgun tumen jadtai.* (lit., The rounded old man with thousands of spears)" in Mongolian. In this riddle, "the rounded old man" refers to a hedgehog. When a hedgehog gets angry, it becomes rounded and expresses its angry behavior rolling down and protecting itself from enemies. Another interesting fact is that Mongolians believe that the hairs of a hedgehog protect them from bad quarrels and discords; thus, people have carried it in the front of their clothes since ancient times.

Moreover, this study has found that animal metaphors for anger are more elaborated in Mongolian than in English. Mongolians have conceptualized anger as a wolf since ancient times. In this metaphor, an angry person is understood in terms of an angry wolf. Consider the examples found in *The Secret History of the Mongols* (SHM: 78). ANGER IS A WOLF: Mongolian: *Boroond dovtloh chono met* (SHM: 78), lit., like a wolf attacking in the rainstorm, fig., Your anger was like a wolf stalking under the cover of a rainstorm. *Hevteshee höndöhöös ömööömöh tsöövör chono met*, lit., like a hyena protecting his den when he is touched on. fig., your anger was like a hyena who fights with anyone who touches him.

The linguistic metaphorical expression *boroond dovtloh chono met* (lit., like a wolf attacking in the rainstorm) shows that anger is viewed as a wolf attacking in a rainstorm in Mongolian. In the cited example from the *Secret History of the Mongols*, the expression *hevteshee höndöhöös ömööömöh tsöövör chono met* (lit., like a hyena protecting his den when he is touched on) indicates that an angry person is understood in terms of an angry hyena who fights with anyone who touches him. In addition, animal metaphors for anger

⁷ "Hablan" is an archaic use to refer to one kind of tiger. (SHM: 78)

were more elaborated in *The Secret History of the Mongols* (SHM: 78) with the use of *suudree dovtloh shonhor met* (lit., like a falcon foolishly attacking its shadow); *semeer zalgih tsurhai met* (lit., like a pike swallowing in silently); *botgonihoo⁸ borvi hazah buur⁹ met* (lit., like a camel biting the heel of its young); *hövuudee höön yadaj ideh angir met* (lit., like a mandarin duck trying to eat his chicks when they fall behind) to refer to the concept of anger.

The metaphor ANGRY BEHAVIOR IS AGGRESSIVE LION OR TIGER BEHAVIOR is elaborated by such expressions as *arslan bar shig dairah*, (lit., to attack like a lion and tiger) in Mongolian. The speakers of Mongolian conceptualize the angry person's behavior as an aggressive lion's or tiger's behavior. This concept is more conventionalized in the nomadic culture. They believe that a lion and tiger are the most dangerous animals that hurt the surrounding people if they are angry. Moreover, angry speech is understood in terms of aggressive dog sounds in Mongolian.

Mongolians conceptualize an angry person's behavior as aggressive bull behavior. In the nomadic culture, the expression *ulairsan buh* (lit., a bull growing red/angry bull) describes the bulls, which lose their control by attacking each other. Therefore, an angry bull is considered too dangerous to surrounding people. The verb *ulairah* (lit., to grow red) means "to show great enthusiasm or very strong feeling". The word *ulairsan buh* (lit., a bull growing red) refers to the angry bull that destroys everything on the way because it loses control in the nomadic culture. In this current discourse, an angry person is understood in terms of an angry bull.

Degrees of linguistic conventionalization

This section discusses differences of anger metaphors which are reflected in linguistic conventionalization in English and Mongolian. Conventionalization is defined as the act of stylizing to conform to a particular style. The conventionality of the conceptual metaphors is regarded as the quality or characteristics of being conventional in thinking. Thus, due to the degree of linguistic conventionalization, there exist some differences in emotional metaphors in the two languages.

Mongolian elaborates on the mapping ANGER IS A DANGEROUS ANIMAL in several ways by producing special-case entailment mappings such as ANGRY BEHAVIOR IS AGGRESSIVE ANIMAL BEHAVIOR. The sub-mappings include ANGRY BEHAVIOR IS AGGRESSIVE BULL BEHAVIOR, ANGRY BEHAVIOR IS AGGRESSIVE LION AND TIGER BEHAVIOR, and ANGER IS HEDGEHOG. The elaborations of these mappings are highly conventionalized in everyday spoken dialogues to refer to an angry person's behavior in the nomadic culture (e.g. *ulairsan buh* lit., a bull growing red, *arslan bar shig dairah* lit., to attack like a lion and tige, *yarzagnah* lit., to baring one's teeth, *tuntegnetlee uurlah*, lit., to be angry to be rounded). Other common conventionalized expressions to refer to the concept of anger as insanity are *uhaan aldatlaa uurlah* (lit., to be angry almost to lose consciousness), and *uhaan aldatlaa uurlah* (lit., to be angry almost to be madden) in Mongolian.

4. Discussion and Summary

This section summarizes the concept of anger and provides the fundamental explanations for why there exist some universal and culture-specific metaphors of anger in the two languages. Consider the following

⁸ The word "botgo" refers to a young camel in its first year.

⁹ The word "buur" refers to a camel (not gelding).

table:

Another conceptual difference exists in the animal metaphors of anger in the two cultures. In a western culture, a horse and snake are considered as dangerous animals, which are used in the source domain to refer to anger in the target domain. Why the HORSE domain is suitable for the conceptualization of anger is explained in the following way: that unbridled horse behavior and an angry person's behavior both cause harm to the owner and others when it is not controlled. In a sedentary culture, riding a horse has not been a part of everyday life experience, in contrast to nomads. The speakers of English view anger as a horse based on the similarities between angry behavior and the unbridled horse which can harm the owner in case it is not restrained. For centuries, people in Western cultures have conceptualized anger as a horse. This notion existed long before the Shakespearean period.

The metaphor ANGER IS A SNAKE has special mappings ANGRY SPEECH BEHAVIOR IS AGGRESSIVE SNAKE BEHAVIOR and ANGER IS AN OLD SNAKE SKIN in English. Esenova (2013) points out that the metaphor ANGER IS AN OLD SNAKE SKIN is motivated by the biological process of skin shedding in snakes. The poor shedding in snakes is believed to be a sign of bad health or another imbalance in its organism. In a parallel fashion, the retention of anger is understood to be harmful to the mental well-being of the angry person in the metaphor above. There are some similar characteristics in that a snake sheds its old necrotic skin and grows a new one, as a human, we get rid of anger and allow new positive emotions to take place. In Western culture, the use of "snake" refers to both positive and negative ideas.

Mongolians have never conceptualized anger as a horse and snake. Instead, they conceptualize anger as a lion and tiger, dog, bull, and hedgehog. People in the nomadic culture consider the horse as the best friend for men on long journeys and as a very important and reliable means of transportation. They cannot imagine their lives without a horse and its support. The herders' everyday work is done with the support of a horse. There are many positive metaphors regarding a horse in Mongolian (*e.g., Mori saitai yavna lit., going with a good horse fig., to be lucky for something*). There is a traditional saying: *Ezgui heer mori eznee hayaddagui. lit., In the people-less steppes a horse does not leave behind its master*. This means that if the owner falls off, it will run back to its own herd. Nomads also have a very different concept about the snake. In the nomadic culture, Mongolians always respect nature and believe in natural force. They call the snake a *khairhan*¹⁰ and avoid doing bad things with it. For these several reasons, Mongolians never conceptualize anger as a horse and a snake. The myth of the creation of the world causes the nomadic people to conceptualize animals in terms of inanimate objects. Mongolians usually use "khairkhan" to refer to mountains. However, this word figuratively implies a snake. They believe that a snake has some supernatural forces, thus, it is taboo to call its name. That is why the SNAKE domain is not used to refer to anger in the target domain in this culture.

In Mongolian folk tales and stories, a tiger and a lion are described as the most dangerous animals. Based on the powerful and energetic characteristics of these animals, the speakers create the animal metaphors of anger in this culture. In Mongolian culture, a dog is considered the best friend for humans, like a horse. Nomadic people move from one place to another searching for a good pasture for their livestock rather than settling permanently in one location. The Mongolian pastoral nomads rely on their animals for survival and

¹⁰ "Khairkhan" is an archaic use to refer to sacred grand mountains. In addition, this word is used as interjection to express the meaning of to be afraid of something, to have faith in supernatural force and to surprise from something. (MAED 2000)

move several times a year. Thus, a good horse and dog are regarded as the best helpers for them. The families which are called *ail*¹¹ in the culture are usually isolated from one another for about 10 or 20 kilometers in the rural areas. In the Gobi,¹² one *ail* is far from another for about 40 and 100 kilometers. Thus, all cattle breeders usually have a good dog to protect their cattle from other wild animals and other dangerous actions in the remote areas of the country. Therefore, the barking sound of a dog always becomes a very good signal for the owners against something dangerous. Thus, the speakers conceptualize an angry person's behavior as an angry dog's behavior in the nomadic culture.

Another culture-specific metaphor is ANGER IS A BULL in Mongolian. This concept is motivated by the similar characteristics of an angry bull's behavior and an angry person's actions. The phrase "angry bull" which is *ulairsan buh shig* (lit., *like a bull growing red*) refers to an angry person. In the nomadic culture, the word *ulairsan buh* (lit., *the bull growing red*) refers to the bull, which loses control by attacking one another; accordingly, it is considered too dangerous to others surrounding the angry bulls that can destroy everything on the way because it loses its control. Thus, nomadic people warn against angry bulls when two bulls attack each other.

Since ancient times, Mongolians have conceptualized anger as a hedgehog based on the resemblance between an angry person and a hedgehog. In ANGER IS A HEDGEHOG metaphor, the angry person is understood in terms of the angry hedgehog rounded and filled with anger. When a hedgehog gets angry, it becomes rounded and expresses angry behavior by rolling down. In the nomadic culture, there is a saying that the hair of a hedgehog protects it from bad quarrels and discord; therefore, people carry it in front of their clothes.

5. Conclusion

As stated earlier, the main purpose of this study is to analyze conceptual metaphors of *anger* by showing evidence from Mongolian in comparison to Korean. Moreover, it should be noticed that this study mainly focuses on language use and its association with the given cultures. Thus, in order to conduct a systematic comparative analysis of conceptual metaphors for emotions in the two languages, this research has adopted several different approaches. Accordingly, this study was very time-consuming. The study on emotion metaphors in the two languages was done within the cognitive semantics framework. To compare the results of the study, the number of parameters proposed by Barcelona (2001) and Kövecses (2001) regarding the identification and description of the conceptual metaphors were selected.

This systematic comparative analysis of emotion metaphors in Mongolian and Korean contributes importantly to the major claims of the Contemporary Metaphor Theory, which states that metaphors are grounded on both universal embodiment and social-cultural experiences. Even though Mongolians and Koreans belong to very different sedentary and nomadic cultures, they share some universal conceptual metaphors for particular emotions with each other. In summary, it is not only the speakers' different social cultural experiences and their preferences of cognitive processes but also the applications to the reality that leads to variations in anger metaphors in the two cultures.

¹¹ In the nomadic culture, the word "*ail*" refers to a family including its housing. Also, a group of "*ger*" is called *ail*.

¹² "Gobi" is a semi-desert in the southern part of Mongolia. I, e. Some places have steppes with a pre-eminently desert character in the country.

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SHM The Secret History of Mongols

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SSEC-16

Terms of cashmere product export

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Abstract- In the first phase of the "Economic Priority Areas" goal of "Vision 2050", "New Revival Policy" and "Mongolian Export" program, the goal of becoming an "exporter of raw materials from an exporter of processed products" was put forward. One of the tasks to be implemented here is defined as "increasing the processing level of agricultural products and increasing the export of meat and wool cashmere products". Therefore, the government conducted a research on the policy tools to support the export of cashmere products and the export process of cashmere products, calculated the impact of cashmere product exports on economic growth in the E-Views program, determined the problems in diversifying exports through cashmere products exports, and made a conclusion.

Keywords- Export, export diversification, trade balance, economic growth, gross domestic product

1. Introduction.

Mining products account for 93% of Mongolia's total exports, and livestock products account for 4% of total exports. This shows that our country's exports are dependent on one sector and there is an urgent need to diversify exports.

Therefore, the possibility of diversifying exports with the export of cashmere and cashmere products has been determined by conducting the following 4 types of research and calculations

1. Calculation of Mongolia's foreign trade indicators
2. Research on the statistical data of the export of cashmere and cashmere products of Mongolia
3. Study of documents required for export activities
4. Research on the current status of cashmere and cashmere products export

Calculation of Mongolia's foreign trade indicators

Mongolia's long-term development policy "Vision 2050", the Government's 2020-2024 action program, foreign policy concepts and export promotion programs "Mongolian Export" have been compared and studied as follows.

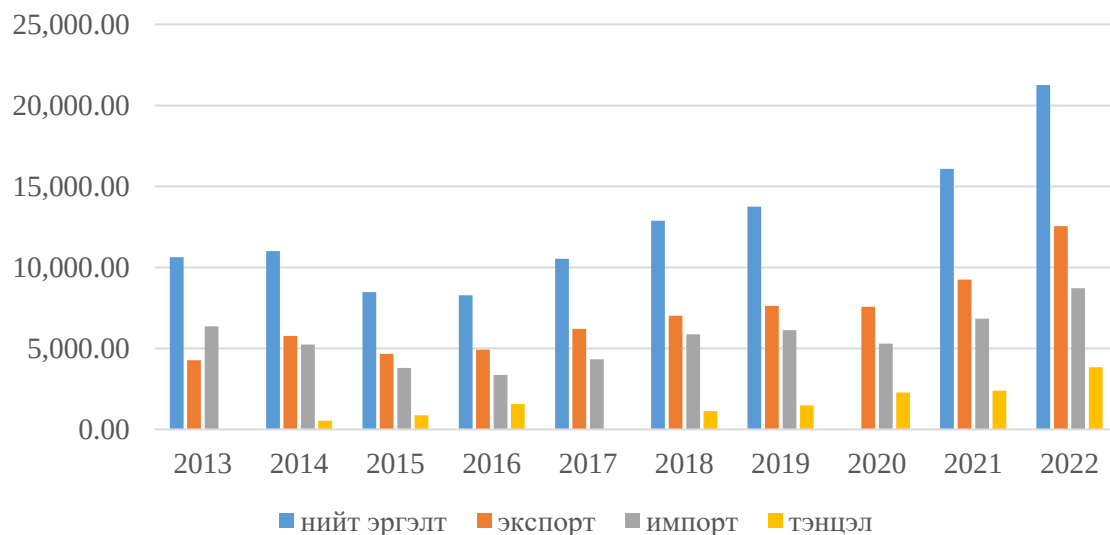
Table 1. Comparison of policies and programs implemented by the government

Mongolian export program /Phase III/	Vision-2050 /Phase I/	The government's 2020-2024 action program	Mongolia's foreign policy concept
To increase the export of non-mining products by creating a favorable and stable environment for production and export, Support the export of value-added products, improve the competitiveness of export products, facilitate trade, and expand the range of export markets.	Leading sectors of the economy will be developed and an export-oriented economy will be created. A country that is an exporter of raw materials becomes an exporter of processed products.	To establish an environment-friendly complex for the processing of livestock and animal-derived raw materials, to increase the export of agricultural goods and products	International trade policy
Creation of a favorable financial, tax and legal environment for the production of export products, investment in export trade Export diversification by supporting the production of non-mining products and support the export of value-added products	Increase the level of processing of agricultural products, increase the export of meat and wool cashmere products Increase the amount of export of processed products	To support herdsmen, to organize agricultural raw materials processing plants regionally, To export value-added products and increase the income of farmers and citizens	- To introduce the leading technology and management in the branches, and to raise the quality and standards of products to international standards and levels - To support the growth of exports

In the above policy documents, the goals of increasing the level of product processing in the agricultural sector, increasing the export of livestock products, and supporting the workers of the sector have been proposed. Mongolia's policy documents on manufacturing industry are interrelated.

As of 2022, our country has conducted foreign trade with 162 countries of the world, the total turnover of foreign trade reached 21244.8 million US dollars, the amount of export exceeded the amount of import by 3836 million US dollars, and the foreign trade balance was profitable. As of the last 10 years, Mongolia's total foreign trade turnover, export and import volumes, and trade balance are as follows.

Figure 1. Total turnover, exports, imports, balance

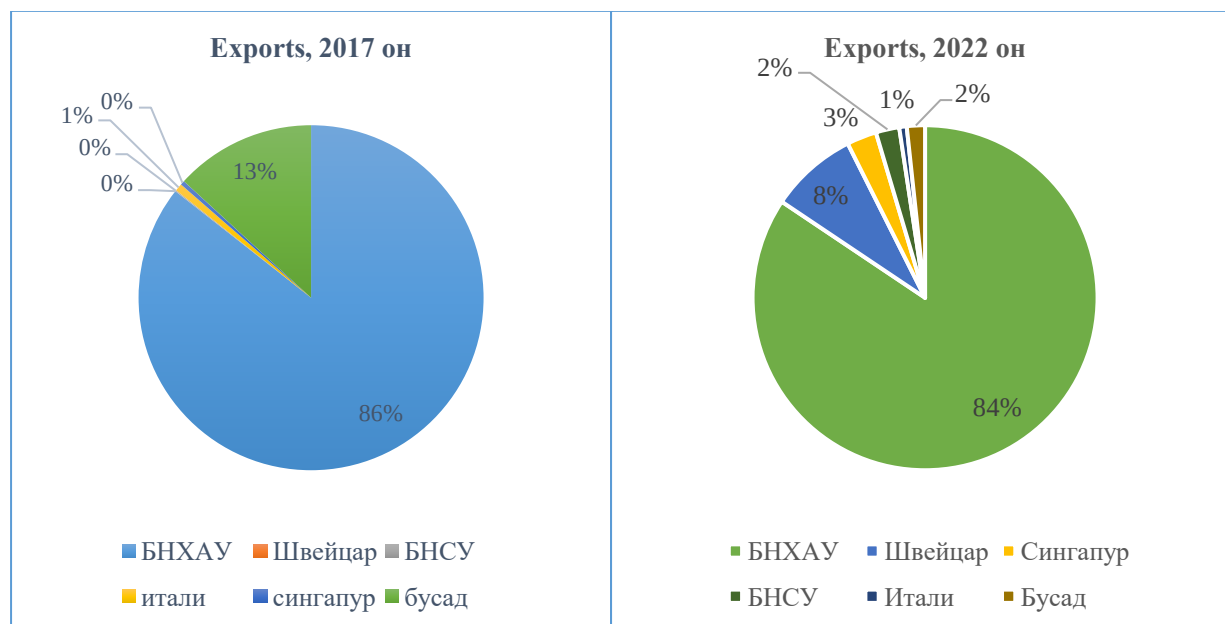


As can be seen from the above picture, the total turnover increased by 24.2%, the export volume increased by 26.3%, the import volume increased by 21.3%, and the foreign trade balance increased by 37.5%. In terms of medium-term compound growth rates for 2013-2022:

$$CAGR = \left[\left(\frac{12540.4}{4269.06} \right)^{\frac{1}{10}} - 1 \right] * 100\% = 11.3\%$$

Mongolia's exports are expected to grow by 11.3% annually in the medium term. Mongolia exported goods to 65 countries in 2022, and the export structure of 2017 and 2022 is compared in the following figure.

Figure 2. Export structure by country, 2017 and 2022



Mongolia's foreign trade terms and foreign trade quota were calculated using the following indicators.

Table 2. Parameters used in the calculation

Indicators	2021	2022
GDP /mln. tug/	43555484.4	52867370.3
Foreign trade turnover /mln. US dol/	16086.6	21244.8
Export price index	160.6	84.9
Import price index	125.6	105.6
Rate /tug/	2849.29	3444.6

Resource: National statistical office , www.1212.mn

Terms of foreign trade:

$$T_t = \frac{IP_{ex}}{IP_{im}} * 100 \text{ or } T_t = \frac{P_{ex}}{P_{im}} * 100\% \quad (2)$$

$$T_t = \frac{84.9}{105.6} * 100 = 80.3 \text{ or } T_t = \frac{84.9}{105.6} * 100\% = 0.8$$

This indicator is less than 1, which indicates that our country's foreign trade conditions are bad. In other words, the increase in export prices of our country is higher than the increase in import prices. This means that the rise and fall of the global market price of the main export products is directly related to the foreign trade conditions of our country.

Quota:

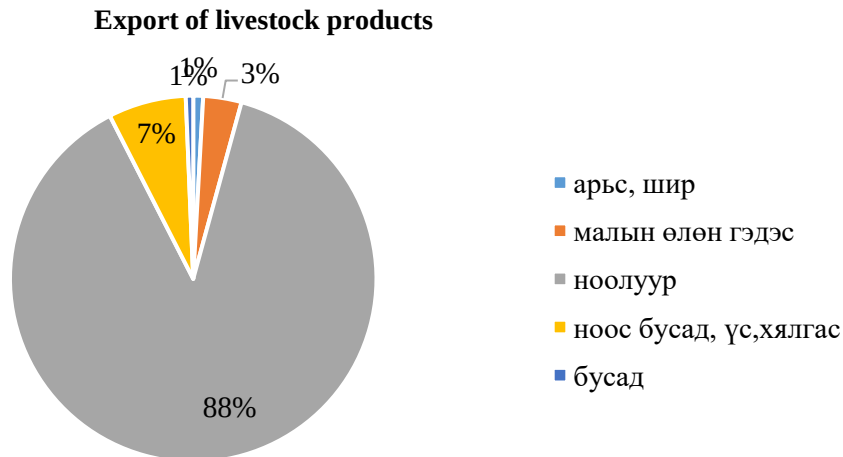
$$Quota = \frac{26330573.8}{43555484.4} * 100\% = 60.6\%$$

This indicator is more than 45%, which means that our country is relatively open to the world market.

Research on the statistical data of the export of cashmere and cashmere products of Mongolia

The figure below shows the export of livestock products in total exports by type of product.

Figure 4. Export of livestock products



Cashmere and cashmere products account for 88% of the total export of livestock products, but it is less than 3% of the total export of our country, which is very small.

However, considering the quantity of cashmere product exports, in 2021, approximately 6.3 million kg of washed cashmere, 260 thousand kg of combed cashmere, and 314 thousand pieces of knitted and woven products were exported. The reason for the decrease in the export of combed cashew is that the production of combed cashew has decreased by 0.25 tons compared to the previous year.

Study of documents required for export activities

As of 2022, the following documents are being prepared for export activities in Mongolia. It includes:

- Price claim
- Packing list
- Certificate of origin
- Hygiene certificate
- Insurance certificate
- Transport documents
- Transit documents
- Export customs declaration
- Receipt of payment of customs duty
- Purchase and sale agreement
- Cargo manifest /to the Chinese customs authority/

Exporters of our country spend an average of 168 hours to prepare the above 11 types of documents, while East Asian and Pacific countries prepare 6-7 documents and spend 65 hours, OECD countries spend 3 hours to prepare 4 documents. Compared to other landlocked countries in the world, the average customs clearance time for our country is about 72 hours, which is one of the problems faced by our country's exporters.

Research on the current status of cashmere and cashmere products export

Cashmere is exported through 7 stages and 8 organizations. Cashmere products are exported through 5 stages and 4 organizations.

Mongolia's resources to increase the export of cashmere and cashmere products: An average of 24,000 tons of cashmere is produced annually in the world cashmere market, of which China alone supplies 12,000 tons or about 50%, and Mongolia supplies 9,600 tons or about 40%.

At the national level, at the end of 2022, according to the livestock census, 71.1 million livestock were counted, and goats accounted for 38.8% of the total livestock population. Compared to the previous year, the number of goats increased by 1.1 million. Mongolia ranks 12th in the world in terms of the number of goats.

Characteristics of Mongolian goat cashmere: The grain diameter of Mongolian goat cashmere is 13.0-16.5 microns, and the average length is 38-45 mm. Due to the extreme climate of Mongolia, it is better than goat cashmere from other countries in terms of heat retention. It also has the characteristics of low pollution, high yield per goat, and many natural colors, so there is no need to use dyes.

Mongolia is the world leader in the production of raw cashmere, and the annual production is estimated to be about 15,000 tons. It is ready to make cashmere products by separating oily, lint, and non-technological hairs from unprocessed cashmere. The total production volume of processed cashmere is 15,000 tons.

Compared to Mongolia's cashew production in the last 5 years, it increased by 7.3 percent annually in 2015-2018, remained stable in 2018-2019, and increased by 7.8 percent in 2020. The highest export of combed cashmere from our country is to Italy, and the highest export of washed cashmere is to China.

The influence of combed cashmere, washed cashmere and finished product export earnings on economic growth was evaluated using E-Views software.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-15.59339	14.02092	-1.112151	0.4662
UGAASAN	0.000183	9.72E-05	1.880145	0.3112
SAMNASAN	-7.57E-05	0.000128	-0.590018	0.6607
BELEN	-0.001522	0.001008	-1.509090	0.3726
R-squared	0.880215	Mean dependent var		3.020000
Adjusted R-squared	0.520862	S.D. dependent var		4.790825
S.E. of regression	3.316200	Akaike info criterion		5.226078
Sum squared resid	10.99718	Schwarz criterion		4.913628
Log likelihood	-9.065195	Hannan-Quinn criter.		4.387494
F-statistic	2.449441	Durbin-Watson stat		1.328926
Prob(F-statistic)	0.431704			

The results of the assessment are presented in above. Based on the evaluation of the simple regression equation, it was concluded that the overall model is not significant because the export earnings

of combed and washed cashmere and the export earnings of finished products account for a very small amount of 3.5% in the overall economic growth.

Therefore, a linear-log model shows how each indicator affects economic growth. According to the assessment, economic growth will increase by 0.2% when the export income of washed cashmere increases by 1,000 US dollars, economic growth increases by 0.064% when the export income of combed cashmere increases by 1,000 US dollars, and the export income of finished products increases by 1,000 US dollars. Economic growth is directly related to increase in dollar by 0.061%.

Conclusion

The research shows that cashmere is an economically important product of export strategy in Mongolia. The research shows that it is necessary to clarify the government's policy decisions regarding cashmere products.

It was believed that supporting the production of primary processing of cashew, exporting semi-processed raw cashew, and exporting it as a final product will further increase Mongolia's exports. Furthermore, it was considered that the gross domestic product can increase with a positive effect on Mongolia's economy.

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SSHS-17

Group and individual psychotherapy for depression level reduction /In the case of teenage mothers/

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Abstract- In this research case we have investigated the problems facing the society in Mongolia, as other foreign countries, then studied how to increase socio-psychological readiness and reduce possible risks. It is observed that teenagers, especially teenage mothers, are more likely to suffer from depression. In 2017, with the support of the World Health Organization, as a result of a study on the topic "Prevalence of mental disorders in the population" involving more than 15,000 people in 11 rural provinces and 5 districts of the capital, within ten years, alcohol addiction disorders increased 25 times, anxiety disorders increased 8 times, and mental disorders increased 25 times, depression increased 7 times. It was found that 65 percent of the total population surveyed had mental problems. Data show that women who become mothers in their teens are 3-6.7 times more likely to experience depression than those who are 40 and older. Teenage pregnancy therefore affects girls' education and earning potential, forcing many to drop out of school. Our study was conducted in order to determine the level of depression of teenage mothers, to reduce their level of depression through group and individual psychotherapy, and to develop recommendations for them, as it negatively affects future opportunities and economic prospects.

1. Introduction

One thing that is common among people is that they take psychological problems for granted and ignore them. Due to this, they may not be aware of the direct or indirect impact on their daily life and health. One of the psychological phenomena that is considered pathological is depression or depression. Depression comes from the word deprimer, which means depressed. With depression, physiological changes begin to occur that go beyond feeling sad. Inactivity prevails in most parts of the brain of people suffering from depression, and because of the inactivity in the frontal cortex, which is responsible for controlling activity, a person begins to load only negative information in his brain instead of positive information.

The World Health Organization released the following facts about depression (WHO, 2017):

- Depression is the 4th most common mental illness in 2015 and is predicted to be the 2nd in 2020.
- In 2017, 4.4% of the world's population, or about 322 million people, were living with depression.
- 4.2% of Mongolia's population or a total of 117,436 people have depression.
- Depression does not distinguish people by age, gender, profession, education background.
- Depression and anxiety are major causes of employee absenteeism and increase the risk of early retirement (Melin et al, 2018).
- A person with depression recovers, but relapses are common. 85% of clients experience an average of four bouts of depression, with frequency increasing and duration increasing if left untreated (Sagg & McNulty, 2006).

- Between 76% and 85% of people in underdeveloped countries do not have access to mental health care. The main reasons for this are people's misconceptions about mental health, lack of knowledge and lack of specialists.
- Depression affects not only the patient, but also family and friends.
- From 2015 to 2050, the number of people over 60 years of age will increase from 900 million to 2 billion, or 20% of them will have mental or neurological disorders. Among them, 5%-7% have depression, stupidity or panic, and 3.8% have anxiety disorders.

Ignorance of reproductive psychological changes in depression leads many women to psychological problems. Here are some facts about pregnancy depression:

- Between 10% and 20% of pregnant women experience pregnancy-related psychological distress.
- The risk of depression is 20% among those who are poor, have poor social care, and are at risk.

In 2018, 88,100 mothers were registered as pregnant and 78,444 women gave birth in Mongolia. In Mongolia, on average, 100,000 women get pregnant, and 10,000 to 20,000 women suffer from depression during pregnancy, which is not a small figure.

RESEARCH SECTION

Survey Methodology

One of the methods to determine the level of depression is AT Beck's test. Using this method, it is possible to determine the level of depression.

Antony, MM, Bealing, PJ, Cox, BJ, Enns, MW, Swinson, RP (1998) Pre- and post-counseling DASS-21 short version of depressed mothers. After the survey, the results were determined. DASS-21 In 1995, Lovibond Sh. and Lovibond PF developed the DASS-21 test with 42 questions. Subsequently, a short version of the test was developed by Anthony, MM, Billing, PJ, Cox, BJ, Enns, MW, and Swinson, RP in 1998. This test is copyrighted by APA in 2019. All rights reserved. The purpose of the test is to measure depression, anxiety and stress, and there are a total of 21 questionnaires with 7 questions per scale. When answering the question, give an assessment on 4 scales: "It has not happened to me", "It has happened to me sometimes or to a small extent", "It has happened to me to a certain extent or for a certain period of time", and "It has happened to me a lot or often".

Research objectives: Determining the level of depression among teenage mothers and investigating the possibility of reducing the level of depression with individual and group psychotherapy for mothers who are above the level of depression

Research objectives:

1. Identifying depression in adolescent mothers.
2. Analysis of experimental and research results of individual and group psychotherapy methods.

V. Research methods and methodology

- As the object of the study, teenage mothers living in Darkhan-Uul province were selected and surveyed using AT Beck's test to determine the level of depression, and 20 mothers were found to have a severe or above average level of depression. 20 women with a high level of depression were selected and conducted a survey using the interview and test method /DASS-21 / and determined the counseling method. Tests, interviews, and observation methods were used in the research, and some results were processed by the SPSS method.

RESEARCH RESULTS

84 teenage mothers living in Darkhan-Uul Province were included in the study. Considering the age group of the mothers involved in the study, there were 7 mothers aged 19, 6 mothers aged 18, 4 mothers aged 17, and 3 mothers aged 15.

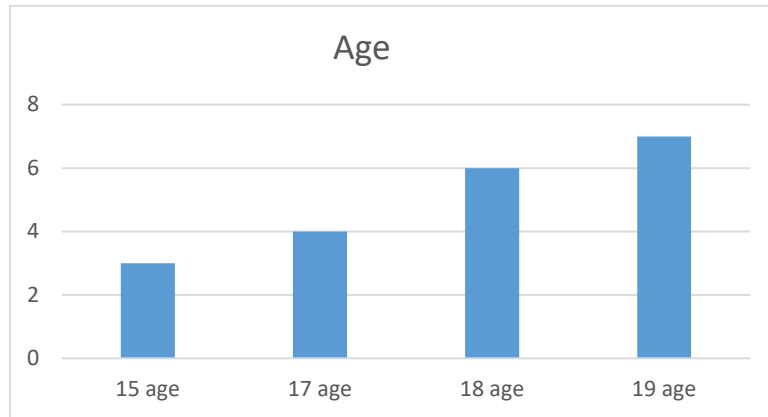


Figure 1. Age category of the mothers involved in the study
In terms of educational status, two of them are in school and the others are temporarily out of school.

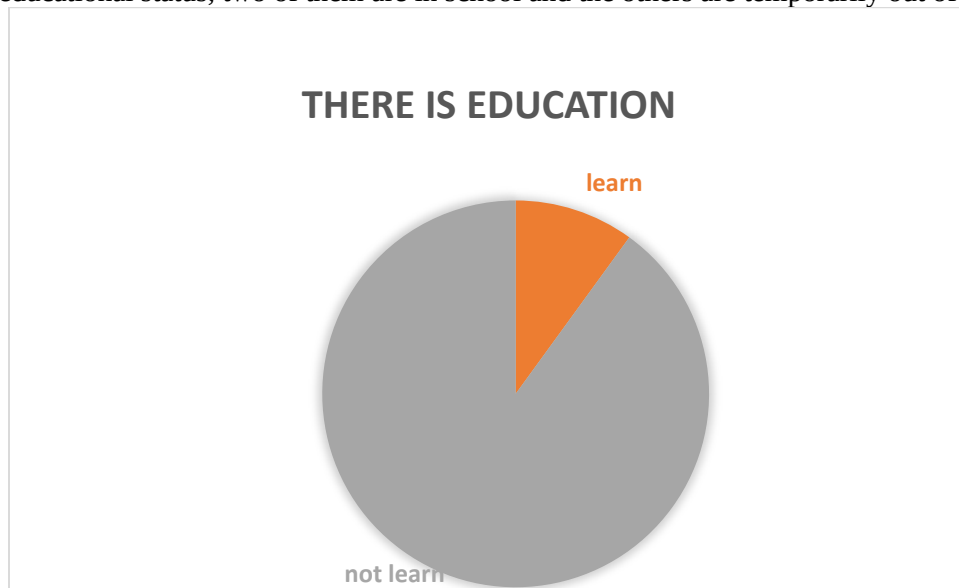


Figure 2. Whether the mothers in the study attended school.

Development of a survey to determine the level of depression

In cooperation with Darkhan-Uul Ayam Family Hospital, 84 teenage mothers were surveyed by AT Beck's test method, and 20 mothers were found to be of severe or above average level.

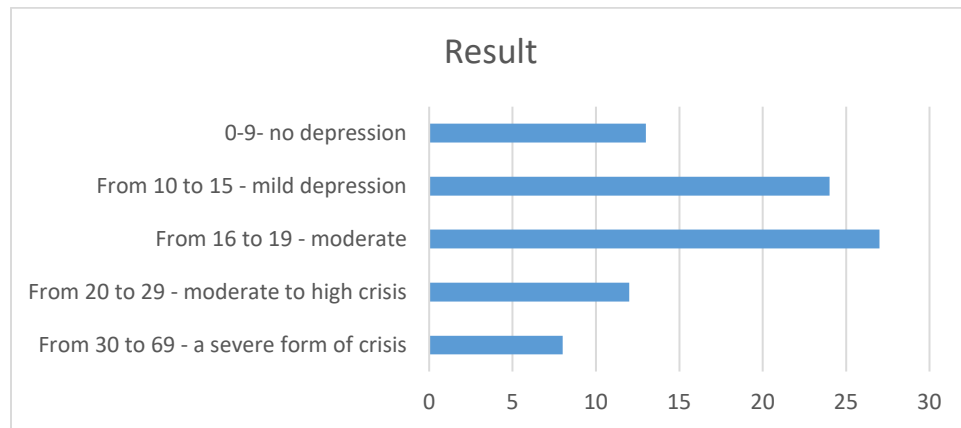


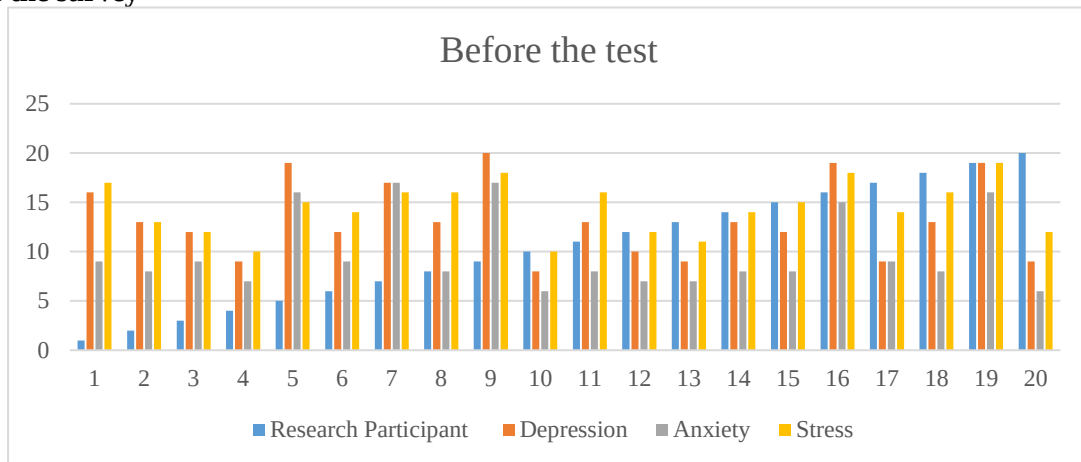
Figure 3

Figure 3. No depression /0-9/ 13 mothers with mild depression /10-15/ 24 mothers with moderate depression /16-19/ 27 mothers with moderate-to-high depression /20-29/ 11 mothers with severe depression 9 mothers of the form were evaluated respectively.

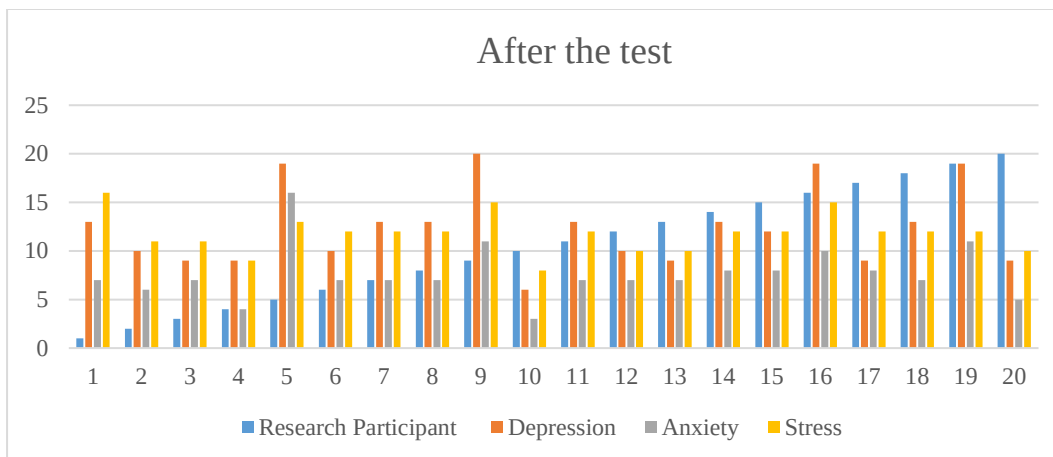
Anthony, MM, Billing, PJ, Cox, BJ, Enns, MW, Swinson, RP (1998) Pre-counseling with the DASS-21 short version of 20 mothers with high levels of depression. and then research and determine the results. Psychological counseling was conducted in groups and individually, and was organized in cooperation with the psychologist of Darkhan-Uul province, N. Dorzhnalgirmaa. Group counseling was conducted using art psychotherapy.



Before the survey



After the survey



	N	Range	Minimum	Maximum	Mean	Std. Deviation
Depression	20	14.00	7.00	100.00	70.4800	14.20928
Stop	20	10	6.00	100.00	81.6800	15.29231
Stress	20	17	10.00	100.00	69.4200	21.51515
Valid N (listwise)						

Figure 4

Figure 3. When assessing the level of depression of mothers in the study before counseling, there were 6 mothers with moderate depression, 9 mothers with severe depression, and 5 mothers with very severe

depression. After group and individual counseling, there were 2 mothers with mild depression, 9 mothers with moderate depression, 6 mothers with severe depression, and 3 mothers with severe depression. According to the research, there was a good side that the level of depression was reduced. This was followed by a positive decrease in anxiety and stress levels.

CONCLUSION

1. Out of 84 women living in Darkhan-Uul Province, 20 women were found to have high levels of depression.
2. As a result of the research, it was observed during the research that the depression level of teenage mothers is high or above the average, and their living conditions and environment have a significant effect.
3. Paying attention to the educational status of teenage mothers, as a result of the project, in addition to reducing the level of depression, and increasing their desire to learn, 3 mothers were trained in 30 schools, 6 mothers in hairdressing training, 10 mothers in English language courses, and 1 mother in UUPTK. indicates a positive effect.
4. A pilot study using group and individual psychotherapy found that adolescent mothers' depression and anxiety levels decreased. After conducting a pilot program of group and individual psychotherapy methods for women with high levels of depression among teenage mothers, the mean results increased from 70% to 55.8%.

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BTNS-18

Satellite Based Surface Evapotranspiration Estimation in Mongolia

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Abstract: The study of evapotranspiration (ET) is significant to physical process controlled by a number of interconnected environmental and eco-hydrological factors in arid and semi-arid region of Mongolia. The main objective of the study is to estimate the spatially distributed actual evapotranspiration using remotely sensed data and to compare the results as determined with meteorological data and ground based point measurements. The Normalized Difference Vegetation Index (NDVI), Land surface temperature (LST) are derived from MODIS data, every 10-day averages climatic data, period full 3 years from 2001 to 2003 and ground pan measurement data of evapotranspiration only in growing season (May to September, 2003), pertaining to three meteorological stations located in Mongolian steppe are used in this analysis and model. We developed new simplified satellite based evapotranspiration estimation model in Mongolian steppe area based on physics of Bowen ratio classical method. The identified factors were related to physical processes influencing evapotranspiration. The results of the study reveal that the variables, air, surface temperature, soil moisture, wind speed are those with the most influence in the evapotranspiration process in arid and semiarid environment of Mongolian steppe area. In this study we used satellite MODIS data in growing season, June-August, 2021 for testing developed new simplified satellite based evapotranspiration estimation model in Mongolian.

Keywords: Evapotranspiration; heat balance; remotely sensed data

1. Introduction

Evapotranspiration (ET) as part of the hydrological cycle is affected by a multitude of process at the interface between soil, vegetation and atmosphere. A number of models for ET estimation have been presented since then. These models, including empirical models, semi-empirical models and physical models, have increased the precision of ET estimation [1]. There are many methods to estimate reference ET using meteorological data: Penman-Monteith combination method (FAO56-PM) [2], the temperature based Hargreaves-Samani [3], the radiation based Priestley-Taylor [4], Makkink [5] and the mass transfer based PET method. Reference ET is the ET rate of a reference crop expressed in inches or millimeters. Most of these methods are based on point data, which do not provide good estimation of ET for large areas. The problem of actual ET estimation over a large area can be solved using remote sensing methods that provide ET on pixel-by-pixel basis. Many researchers ([6]; [7]; [8]; [9]) have already developed various

methodologies by combination of satellite and ground data for large areas since 90s. Remote sensing has come out, over the last decade, with methods for calculating the actual evapotranspiration (ETa) (Vidal and Perrier 1989; Bastiaanssen 1998). Apart from precipitation, water vapor exchange (also called evapotranspiration, ET or latent heat flux, LE) between the atmosphere and terrestrial ecosystems is the major component of the terrestrial hydrological budget (Brutsaert, 1982) [10]. ET, by definition, is the process by which ecosystems return soil water, initially charged from precipitation (PPT), to the atmosphere to balance regional and global water cycling through two pathways: soil evaporation and plant transpiration (Brutsaert, 1982)[8]. Only a few satellite based studies have assessed the hydrological processes of the steppe ecosystems in Mongolia ([11]; [12]). This study focuses on the estimation of ET based on heat balance theory, which partitions between sensible heat flux and latent heat of vaporization flux. The objective of this study to compute spatially distributed evapotranspiration (ET) and by remote sensing over arid and semi-arid region with homogeneous surface condition in the Mongolia steppe area.

2. Materials and method

2.1 Study area

As mentioned in the research objective the study area was selected in such a manner that sufficient ground information is available to facilitate the calibration of energy balance models based on remotely sensed data. This study is conducted on steppe area of Mongolia. The area covers latitudes 45000'N to 50000'N and the longitudes 96000'E to 118000'E shown in Figure1. The Mongolian grassland has a strong continental climate characterized by little rainfall (100 to 350 mm) occurring mostly during the warmer months (June, July and August). The growing season is shorter, generally short grass and small shrubs grow from late spring to med-autumn. The topography of the area is gently rolling and the altitude ranges from 680 to 1200m. Here, soils are classified as sandy loam or sandy silt loam with abundant gravel.

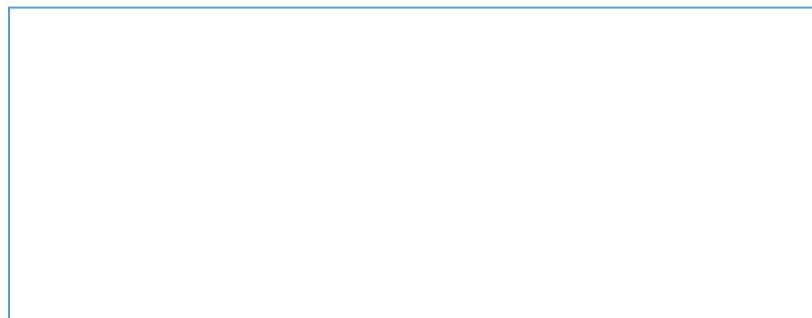


Fig 1. The selected study area Mongolia

- - Location of meteorological station evaporation measure
- - Location of meteorological station in steppe area of Mongolia

2.2 Observation data

The climate data we used 10 day-averages and NDVI period full 3 years from 2001 to 2003 and ground pan measurement data of evapotranspiration only in growing season (May to September, 2003), from selected 3 meteorological stations (Orkhon, Choibalsan and Khalkhgo) located in this study area. The selected grassland 3 meteorological stations 10- day average climatic data trend from April to September, 2003

showed related climate condition for measured ET in the study area (Figure2,3,4, P-Precipitation, PET-pan measurement, Ta- average air temperature, LST- average Land surface temperature RH- Relative humidity and U-average wind speed for 10 day). Figure2 shows Orkhon station's environmental condition is humid than other stations. The growing season air (10-25oC) and surface temperature (15-30oC) increased from May to July. The spring season in the study region wind speed is higher (2-4.5m/c) than other seasons. The most precipitation was from second 10day of July to the middle of August (approximately, 10-35mm per 10day) and Relative humidity increased follow with precipitation.

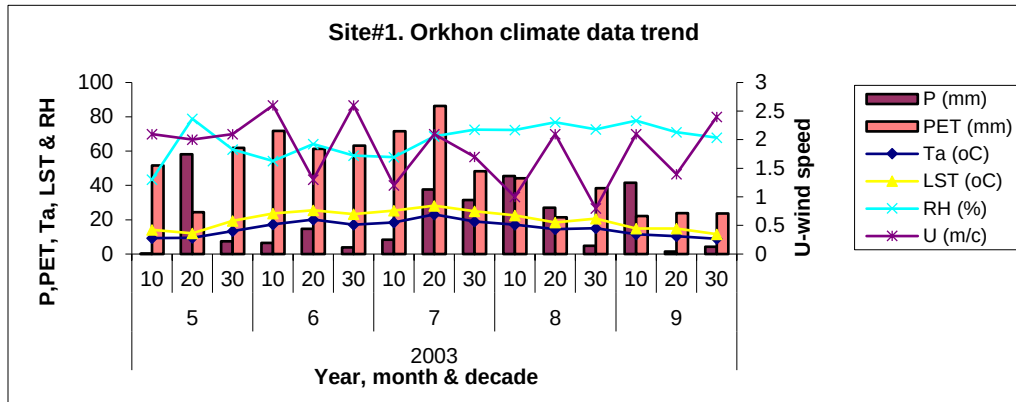
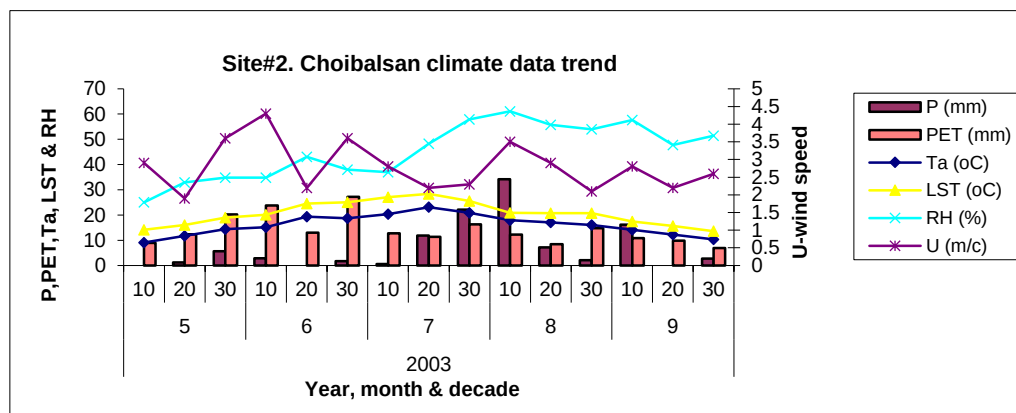


Fig 2. Climate data trend (P-Precipitation, PET-pan measurement, Ta- average air temperature, LST- average Land surface temperature, RH- Relative humidity and U-average wind speed for 10 day) during the growing season (May to September) 2003, site1.Orkhon

Fig 3.



Climate data trend, during the growing season (May to September) 2003, site2.Choibalsan

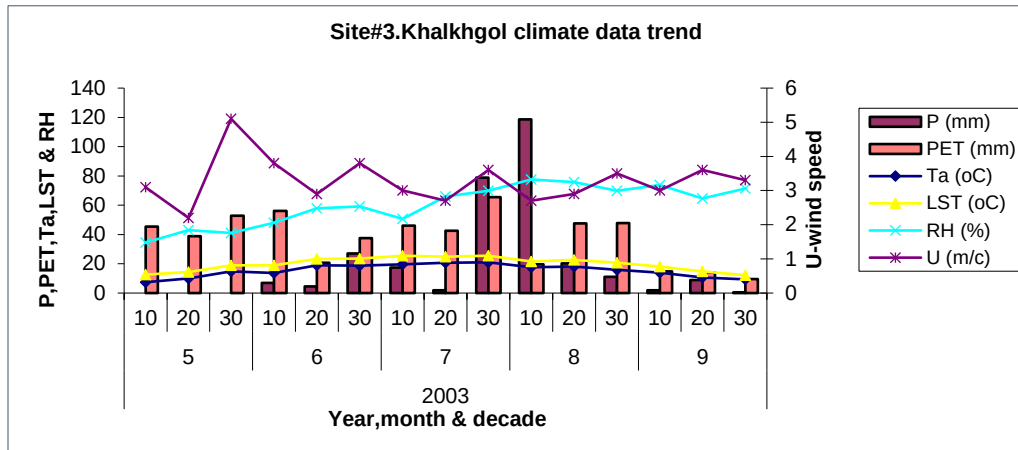


Fig 4. Climate data trend, during the growing season (May to September) 2003, site3.Khalkhgol

Satellite data: MODIS, 2000-2003, 2013, 2021, Landsat8, April 2016.

3.Methodology

We developed simplified new evapotranspiration estimation model based on the physics of energy balance theory, using by MODIS data in the steppe area of Mongolia. The simplified satellite based new evapotranspiration estimation model is adjusted "Bowen ratio" classical method by processed combined climate and satellite data for Mongolian steppe area, which are Normalized difference vegetation index for surface moisture condition, land surface temperature for surface heat condition. A simplified satellite based new evapotranspiration estimation model is as follows.

$$ET = [0.56Ln(NDVI) + 1.8] \times (0.46Ts - 1.4) \quad (1)$$

Where: NDVI- Normalized Difference Vegetation Index/, T_s - Land surface temperature (°C)

Note: 1 kg of water is 0,001 m³ of volume

Evaporation of 1 kg water (1 mm evaporation) from unit area 2,6 MJ is required (FAO,1998). 1MJ/m²/day=0.408mm/day

Results and discution

The main principal component analysis (PCA) method is used by 18 case studies images during 4-9 month of 2013 of evapotranspiration estimation in the Mongolian steppe area. The results of PCA shown in Figure5, here are three types of evapotraspiration: low, medium, and high, depending on the surface relief characteristics.

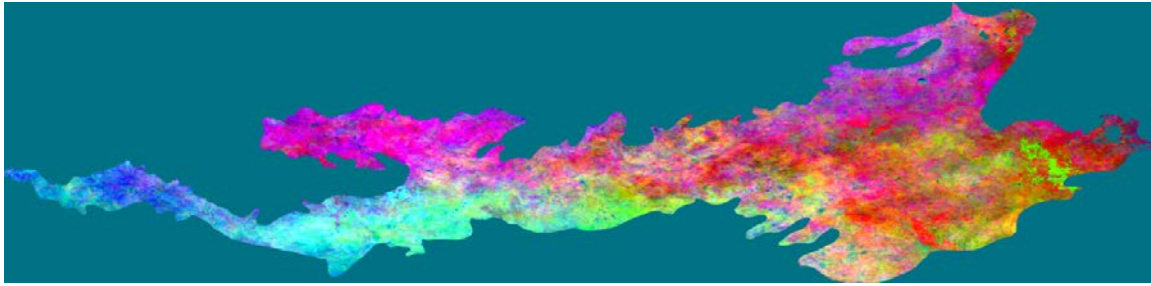


Fig 5. Result of the mean principal component analysis method, during 4-9 months of 2013.

In this study, the simplified new evapotranspiration estimation model have verified the results of a one of mountainous area, Batnorov soum, Khentii province by using Landsat8 satellite data on April 29, 2013. The location of the mountain area was determined by "Google Earth", whereafter evapotranspiration distribution by simplified new evapotranspiration estimation model is estimated (Figure 7).

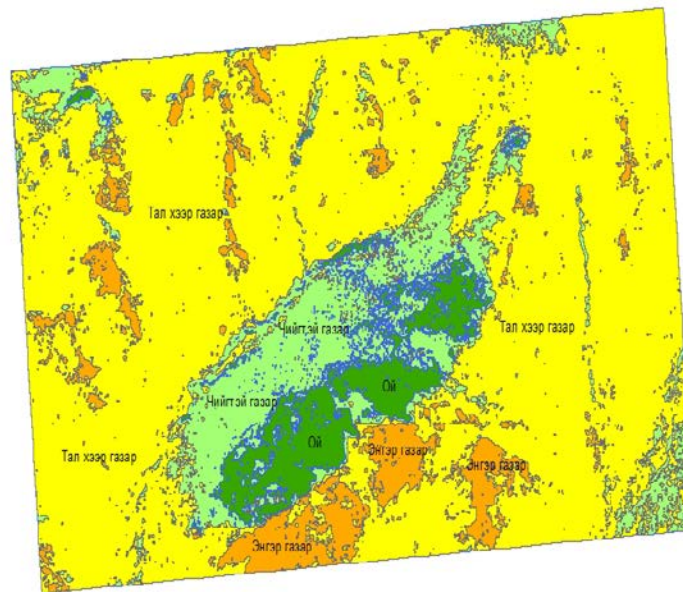


Fig 6. Land cover mapping classification result of selected mountain area in Batnorov soum, Khentii province

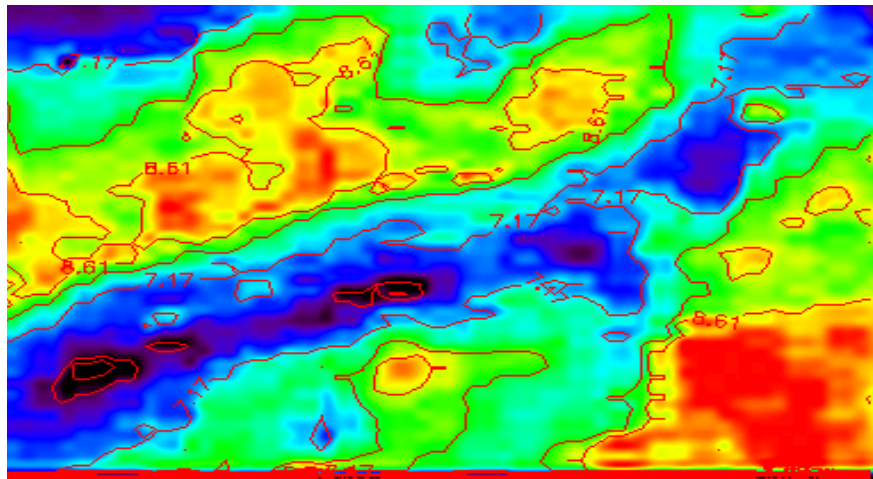
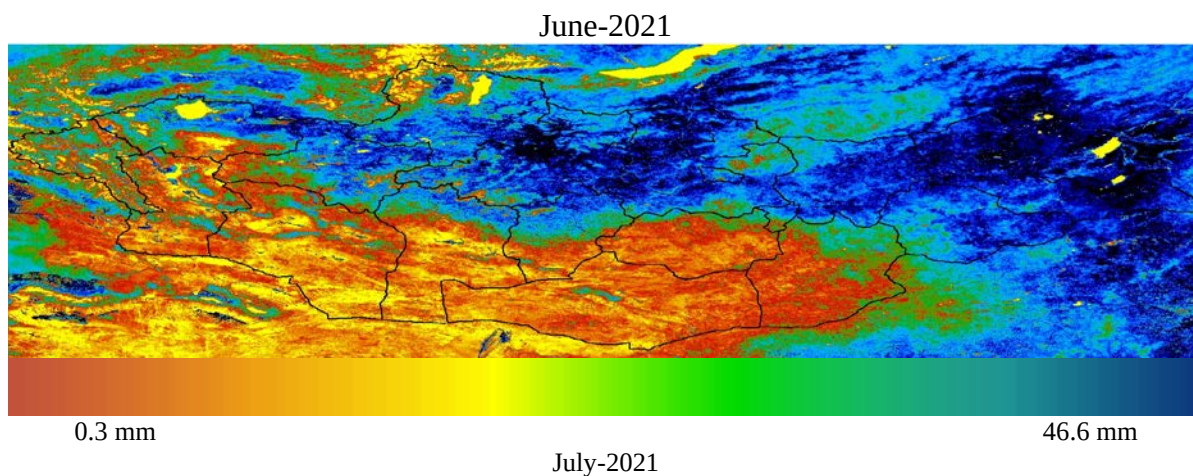


Fig 7. Results of simplified new evapotranspiration estimation model (by “Landsat 8” satellite data on 29, April, 2013) in the selected mountain area of Batnorov soum, Khentii province.

The shown in Figure7, results of simplified new evapotranspiration estimation model. The backside of the mountain with forest area is blue and dark blue colored and related to low evapotranspiration values (6-8 mm). The mountain slopes is green light-colored and related to evapotranspiration values moderately (9-10 mm). The steppe area is red and yellow colored and related to evapotranspiration maximum (11-12mm). The results of simplified new evapotranspiration estimation model is shown low evapotranspiration value on the backside of the mountain with forest area, that means behind of mountain sun light is nondirective and surface temperature is low. In that case this model works with good correlation in the actual condition and including with effects of the geographical and landscape features of the area.

In this study we are used satellite MODIS data in growing season, June-August, 2021 for testing developed new simplified satellite based evapotranspiration estimation model in whole territory Mongolian. Results shown (figure. 8) following:

Surface evapotranspiration distribution in Mongolia. June-August.2021, MODIS data



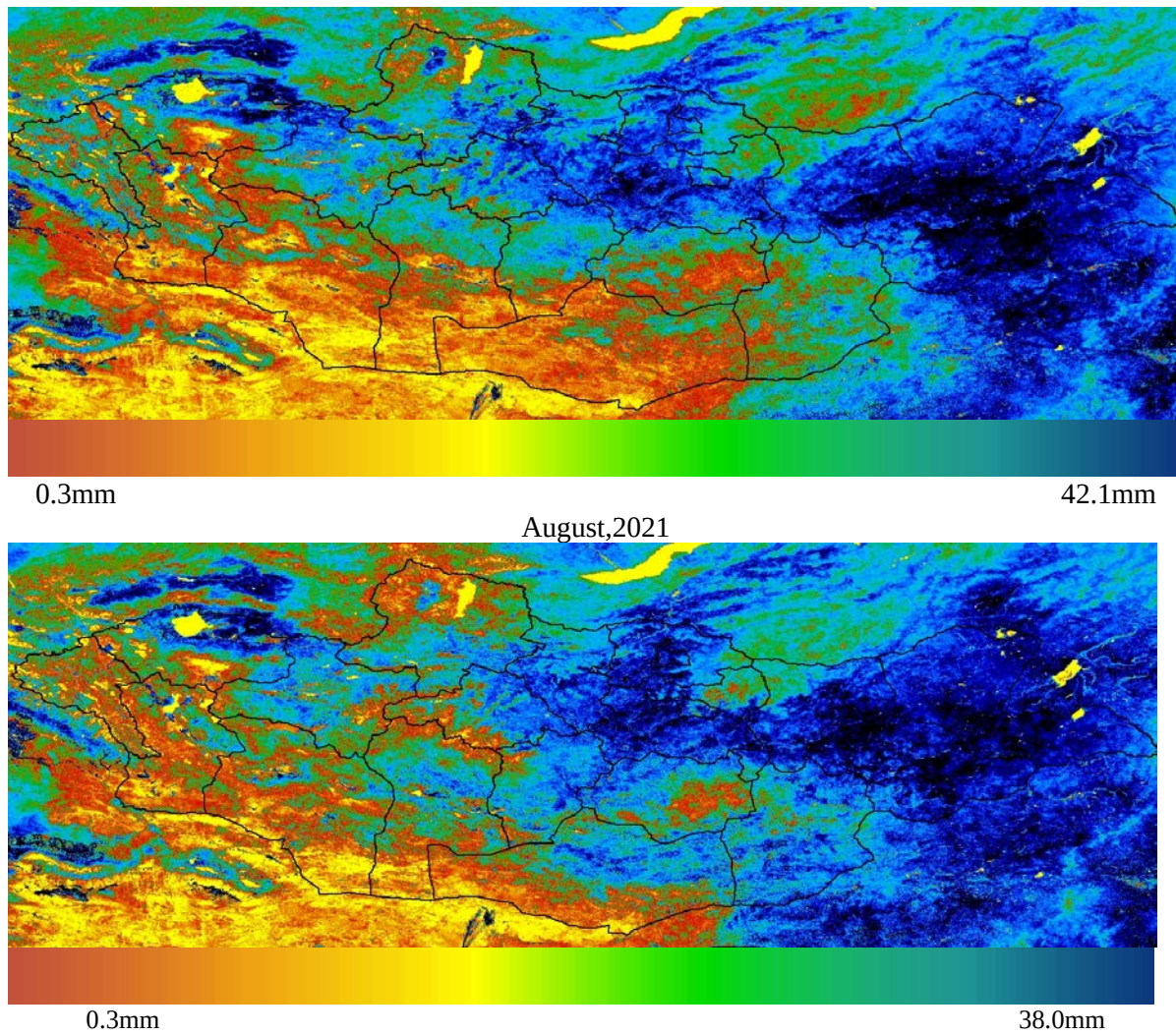


Fig 8. Result of the surface evapotranspiration distribution in Mongolia, during 6-8 months of 2021.

Conclusions

In the developed new simplified satellite based evapotranspiration estimation model we found $a=0.56$, $b=1.18$ coefficients for surface moisture condition depending from NDVI and climate data, $a = 0.46$, $b = -1.4$ coefficients for heat condition depending from LST and air temperature.

New simplified satellite based evapotranspiration estimation model in the steppe area of Mongolia was developed.

The model works normally and good correlation in the actual condition and including with effects of the geographical and landscape features of the area. We have concluded that case new simplified satellite based evapotranspiration estimation model possible to apply for determination of evapotranspiration distribution in steppe area of Mongolia.

Estimated surface evapotranspiration distribution in Mongolia during growing season June-August.2021, results shows spring evapotranspiration values (0.3-46.6mm) was more than summer evapotranspiration values (0.3-38.0mm). The spring wind speed is stronger than other seasons in Mongolia.

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ITME-19

Utilizing a Regulated Technique for Introducing Sulfur into Molten Steel

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Abstract: To manufacture the necessary free-cutting steel billets for the automotive industry, it is crucial to ensure that the steel contains the correct amount of sulfur. The controlled and effective addition of sulfur is a key factor in producing consistent microstructure in sulfur free-cutting steel, which in turn impacts the mechanical properties and machinability of the steel. Due to the limitations of traditional sulfur addition methods in steelmaking, which often lead to unstable results and environmental pollution issues, the introduction of the sulfur cored wire injection process has proven to be a significant advancement.

Keywords: steel for automobile, cored wire, sulfur adding, free-cutting steel

1. Introduction

China has become the leading auto producer globally due to the rapid growth of the automobile industry. The demand for sulfur-bearing steel used in manufacturing transmission gears is steadily rising within the country. While some domestic special steel plants produce a small portion of sulfur-bearing steel, the majority is imported. The primary method of refining sulfur-bearing steel involves adding ferrous sulfide or sulfur in the ladle. In many domestic plants, sulfur powder or pyrites are directly added to the molten steel. This approach presents numerous challenges and drawbacks. Firstly, the addition of sulfur is a complex process with a low success rate and significant fluctuations in content. Secondly, the success rate of a single sulfur addition is low, leading to prolonged operation times and high levels of device, energy, and material wastage. Thirdly, the method results in the generation of a large quantity of highly concentrated toxic gases, predominantly SO₂ and SO₃, causing severe pollution. These harmful emissions not only pose a threat to workers' health but also corrode equipment and factory structures. Lastly, the method is inconvenient and yields a high rejection rate. Consequently, the sulfur cored wire method is rarely utilized in domestic plants. In response, our government has implemented stringent emission regulations, prompting us to seek new technologies for controlling sulfur in free-cutting steel. The methods used at factories are as follows: 1) sulfur powder added directly; 2) pyrites powder added directly; 3) sulfur cored wire or ferrous sulfide (FeS) cored wire adding.

The technique in question is fraught with numerous challenges and disadvantages. Firstly, the process of adding sulfur is intricate, with a low success rate and significant fluctuations in content. Secondly, the low success rate of a single sulfur addition results in extended operation times and high levels of wastage in terms of devices, energy, and materials. Thirdly, the method leads to the production of a substantial amount of highly concentrated toxic gases, primarily SO₂ and SO₃, causing severe pollution. These harmful emissions not only endanger the health of workers but also corrode equipment and factory structures. Lastly,

the method is inconvenient and yields a high rejection rate. As a result, the sulfur cored wire method is seldom used in domestic plants. In response, our government has introduced stringent emission regulations, prompting us to explore new technologies for managing sulfur in free-cutting steel. Furthermore, when it comes to pyrites, there is a rise in material consumption. Conversely, the composition of pyrite is intricate, with a high concentration of impurities and other unwanted elements. As a result, the restricted elements exceed the specified limits.

2. Preparation of the Sulfur Cored Wire

Due to its fine size particles, fluffy nature, high viscosity, and low flow ability, the sulfur powder presents difficulties in forming compared to other alloy powder cores. Through experimentation, several technologies have been applied to overcome this challenge. The sulfur powder core was effectively manufactured with a secure core seam, devoid of cracks and powder leakage. The mass percent of the powder core showed a fluctuation ratio of $\pm 1.0\%$. Refer to Table 1 for details on the specifications of the sulfur cored wire and the chemical composition of the core.

Table 1. The specifications of sulfur cored wire and the chemical constitution of core

Cored wire species	Cross section shape	Outer diameter of cored wire (mm)	thickness of strip (mm)	constitution of the powder core %		Unit powder mass $g \cdot m^{-1}$	Unit wire mass $g \cdot m^{-1}$
				S	water		
Sulfur	Round	10	0.3	≥ 90	< 0.5	120	220

Experimental

The chemical composition of free machining steels utilized for automobile components is detailed in Table 2. Beiman special steel Co. Ltd. conducted the commercial pilot production. During the injection process, the molten steel in the ladle was agitated by blowing Ar. The GNN-3 cored wire injector was employed, with its characteristic parameters outlined in Table 3. The refining ladle had a capacity of 40 tons, with the molten steel reaching a height of 2.2m. The injection temperature ranged from 1570-1590°C, while the slag alkalinity was adjusted to neutral and the oxygen content of steel was controlled within the range of $200-400 \times 10^{-6}$. Samples of the molten steel were taken and analyzed. The injection length was determined based on the sulfur percentage in the steel. Following the injection process, sampling and analysis procedures were carried out.

Table 2. The specifications for different types are outlined

Specification	C	Si	Mn	S	P
Y20	0.15-0.23	0.13-0.33	0.60-1.00	0.07-0.13	less than 0.04
Y30	0.25-0.33	0.13-0.33	0.60-1.00	0.07-0.13	less than 0.04
Y40Mn	0.30-0.40	0.13-0.33	1.18-1.45	0.27-0.28	less than 0.04

Table 3. The defining features of the GNN model cored wire injector.

Outline dimension /mm	Mass /kg	Power of motor /kW	Injection speed / $m \cdot min^{-1}$	Injection precision /m	Wire species round or rectangle	Injection mode
1250 × 500 × 1600	300	6.0	10-150	±0.1	Round 6-15 (mm), or rectangle ≤ 6 × 16 (mm)	Two wires can be fed and feeding rate can be adjusted individually

In the Results and Discussion section, the focus is on the recovery of sulfur during the steel production process. Sulfur, being a highly reactive element with unique properties, requires careful consideration during the entire process. Factors such as the composition of slag and lining materials play a significant role in determining the recovery of sulfur. Precautions are taken before and after the injection process to ensure that the recovery rate is optimal. Through experimentation, it was found that the recovery rate of sulfur in the steel production process reached an impressive 80%, highlighting the success of the procedures in place. The injection speed and injector length used in the experiment have been documented in Table 4 for reference. By carefully considering the properties of sulfur in the core wire and drawing from previous injection experiences with other types of core wire, the decision to inject the sulfur core wire quickly to the bottom of the ladle was made to address potential challenges and ensure the success of the injection process. This approach aims to enhance the efficiency and effectiveness of the core wire injection process overall.

Table 4 The outcomes obtained from the experiment where sulfur was incorporated by means of feeding sulfur cored wire

Type of steel	Wire injecting temperature (°C)	Wire speed (m/min)	S(wt%) before injecting	S(wt%) in finished steel	Mass of molten steel(t)	S(wt%) recovery
Y20	1575	80	0,020	0,100	30	80
Y20	1570	85	0,011	0,950	30	75
Y30	1580	85	0,016	0,105	30	75
Y30	1575	85	0,026	0,100	30	80
Y40Mn	1570	75	0,021	0,028	30	75
Y40Mn	1578	80	0,014	0,027	30	75

In the conventional approach, sulfur or pyrites were directly added, making it challenging to achieve precise sulfur dosing, especially for steel grades with a narrow sulfur content range. Higher sulfur recovery rates were noted for low sulfur steel, while lower recovery rates were observed for high sulfur steel. To address this issue, the utilization of wire injection method can enhance the micro dosing sulfur addition process, offering advantages such as operational simplicity, quick sulfur addition time, and reduced environmental impact.

The size of the sulfur atom is relatively small, contributing to its high activity. This leads to a series of complex physical and chemical reactions taking place between sulfur and various elements present in the materials used in the furnace, such as the furnace charge, slag, and lining. It is not uncommon to encounter situations where the sulfur content exceeds the acceptable limits, resulting in desulphurization phenomena. The challenging nature of sulfur addition is further compounded by the unstable recovery of sulfur.

The sulfur core wire injection method offers a solution to the drawbacks associated with the direct sulfur adding method. This innovative approach effectively avoids or minimizes several issues, including the production of unwanted steel grades, the extended refining time for sulfur-bearing steel, excessive material and energy consumption, and environmental pollution. Moreover, the success rate of adding sulfur in a single operation is significantly enhanced, while the overall technological operation time is reduced. Additionally, various forms of consumption are decreased, leading to an increased utilization ratio of large power electrical furnaces. As a result, the sulfur core wire injection method yields visible economic benefits. Notably, the pass rate for the sulfur-bearing steel refining process is elevated from 86% to an impressive 98%. For a comprehensive comparison between the sulfur core wire injection method and the traditional approach, please refer to Table 5.

Table 5. The comparison between sulfur cored wire feeding practice and traditional process

Sulfur adding technology	Sulfur recovery/ (%)	Control range of sulfur adding	Reserved technological operation		Operation time /min/	Reserved steel grades	Consumption of device, materials and energy	Diffusion of harmful gases
			Sulfur adding	desulphurizing				
Traditional technology	10-60	-	Yes	Yes	Uncertain	Yes	-	Instant vast, high concentration
S cored wire	75	0.02(%)	-	-	1-2	-	Normal	Very less

Summary

The importance of sulfur content in sulfur-bearing steel is negligible, as it can vary between high and low levels. However, when utilizing the wire injection method to introduce sulfur, it is crucial to maintain a high injection speed of no less than 80m/min. This method of reinforcing sulfur addition through wire injection for precise control over sulfur content is indeed viable.

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SSOT-20

Future Development Trend of Sukhbaatar District, Ulaanbaatar City

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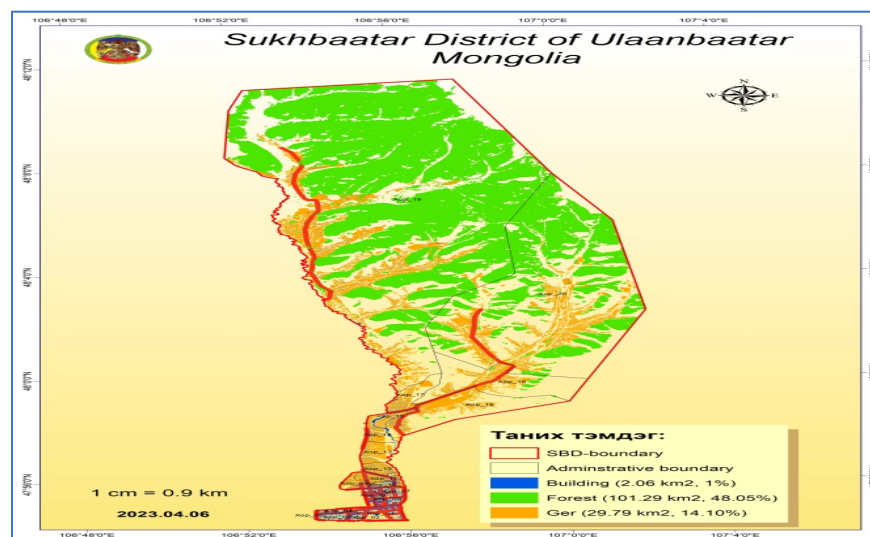
Abstract: In this study, the main social, economic and environmental indicators of Sukhbaatar district of Ulaanbaatar city, their perspective until 2030, development, population growth, migration, poverty, employment, etc. and how planning in turn affects society, economy, and the environment is modeled. Sukhbaatar district is located in the central part of Ulaanbaatar city with many buildings and densely populated areas that have an important influence on the development of the city. Sukhbaatar district is an attractive and convenient district with greenery, ancient heritage streets, cultural service centers, trade, tourism, and opportunities. It is possible to develop the tourism and trade services, small and medium industry development sectors as the priority areas of economic development of the district. Based on about 70 indicators of Sukhbaatar district's population and schools, the dynamic model of the district's strategy and development was developed on the "Vensim" program, and the various policy options for population localization, appropriate level of settlement development, appropriate employment, and welfare services were compared and planned. will be possible. In the dynamic population model, the population's future growth and prospects were modeled using the numerical data of births, deaths, internal and external migration of the region from 2014 to 2022

Keywords: *Аялал жуулчлал, ногоон байгууламж, нийгэм эдийн засаг, загварчлал*

1. Introduction

In this study, many factors such as population growth, migration, poverty, employment, etc. of Sukhbaatar District are considered and how various policies and planning in turn affect the society, economy, and environment are modeled. Today, Sukhbaatar district is a large district of the capital with an area of 20.8 thousand hectares, 20,38639 households and a population of 150547. At the same time, central institutions of government, culture, education and science operate in the district. In Sukhbaatar district, Mongolia's first general education schools No. 1, 2, 3, Kindergarten No. 1, 2, the first state universities, the Mongolian University, the University of Education, the University of Science and Technology, and the Universities of Health Sciences are located and operate. conducted [1],[2],[3]. Today, educational institutions in the district have expanded and developed, and 33,723.84 children are studying in 22 state-owned and 30 non-state-owned general education schools, and 12,940 children are studying in 26 state-owned and 39 non-state-

owned kindergartens [4],[5],[6]. Also, many universities, colleges and vocational education schools have been established and 60,000 students are studying there. The district health center, together with a general hospital and 18 family hospitals, provides primary and secondary hospital care services to citizens. In Sukhbaatar district, Mongolia's first health institutions, the State Clinical General Hospital, the first and second maternity wards are located, as well as more than 100 public and private health institutions and pharmacies in the central district of the capital, providing medical care services to citizens [7],[8]. It is possible to develop tourism, trade services, and light industry as a priority for the economic development of the district. The purpose of this research is to determine the future trends of the district's socio-economic development through the development of the tourism industry in relation to the district's population.



2. Used Data, Material

Table 1. SBD Socio-Economic statistic data: 2014-2022 years

Social indicators	Kindergarten indicators	School indicators
Population	Kindergarten age	Elementary school students
Birth and death		Birth and death
Migration		
Average life expectancy		

3. Method

In this research, in addition to using the method of system dynamic modeling, which is a type of modern mathematical modeling, ordinary differential equations, correlation, and regression formulas and methods were used [11],[12],[13].

- Dynamic modeling of the system, simulation tests, observation and comparison of results, analysis of model parameters, calculation of results were carried out using "Vensim" and "Matlab" programs.
 - Use graphical design methods to display model results and compare numerical data with equations and formulas.
 - In the development of the model, approximately 3 sectors per province, more than 1000 variable parameters, and more than 70 ordinary differential equations will be created, and the solution will be considered and solved by the Runge-Kutta numerical method. The system dynamics model invented in the United States of America in the early 1960s is a mathematical method that calculates the basic parameters of complex problems in the three spheres of society, economy and environment, the factors affecting them, and future trends [14],[15]. The main purpose of the system dynamics model is to calculate the interdependence of social, economic and environmental indicators, and the first experience of developing the "Mongolian Macroeconomic T-21 Model" is in Mongolia [9],[10]. The system dynamics model reminds us to carry out research on the causes and conditions of development policy and planning in a new way based on science, to look at society, economy and the environment as interrelated systems, to make policy decisions, and to use a new methodology to calculate the results. shows. By using the system dynamics model in regional development policy and planning, it will become an important source of calculations, news, and information for planning, developing, and making decisions on scientifically based development policies. The model will include the following social, economic and environmental indicators.
 - Population growth calculation uses the exponential law with the equation $\frac{dP}{dt} = kP(t) = P_0 e^{kt}$ and (Population) $\frac{dP}{dt} = (\text{Birth rate} - \text{Death rate} + \text{Migration rate} - \text{Migration rate}) * \text{Population}$ is calculated as.
 - Cobb-Douglas production function was used to model economic sectors. The industry production variable represents the annual value added of the service industry. To calculate this, the Cobb-Douglas distribution function corresponds to $Y = A * K^{\alpha} * L^{1-\alpha}$
- Output = Initial output * Relative capital $^{\alpha}$ Capital sensitivity * Relative employment $^{(1-\alpha)}$ Capital sensitivity) * Productivity effect.
- Variable parameters such as education, infrastructure, health, technology and natural disasters have been considered for productivity effects on production. These are governed by parameters such as relative life expectancy, impact of natural disasters, relative index of secondary education, relative density of infrastructure, budget for science, and relative density of skills.
- Also, it is necessary to properly evaluate the actual values of those indicators that determine many indicators in determining the suitable location of the factory. Using the Analytical Hierarchical Process (AHP) in the study, we designed our own codes and calculated the importance of the criteria using the following formula.

$$S_i = \sum X_i W_i$$

Here: X_i - criterion value, W_i - criterion weight value

4. Results and Discussion

Based on about 70 indicators of Sukhbaatar district's population and schools, the dynamic model of the district's strategy and development was developed on the "Vensim" program, and the various policy options for population localization, appropriate level of settlement development, appropriate employment, and

welfare services were compared and planned. will be possible. In the dynamic population model, the population's future growth and prospects were modeled using the numerical data of births, deaths, internal and external migration of the region from 2014 to 2022.

SYSTEM DYNAMIC MODELING

Correctly calculating the future of the population serves as a basis for making accurate social, economic and environmental indicators. Therefore, when preparing the population perspective, it was provided until 2030 by age and gender. In order to extract these numbers, historical statistics need to be correct without errors.

Social indications

Population

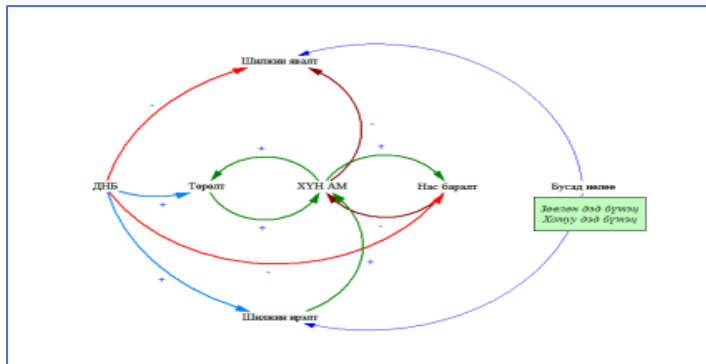


Figure 2. Causal loop diagram of population estimation

The total population was calculated based on variables such as birth, death, immigration and migration in the population sector of Sukhbaatar district. Probabilities were derived for each age of women of childbearing age based on the timing of births.

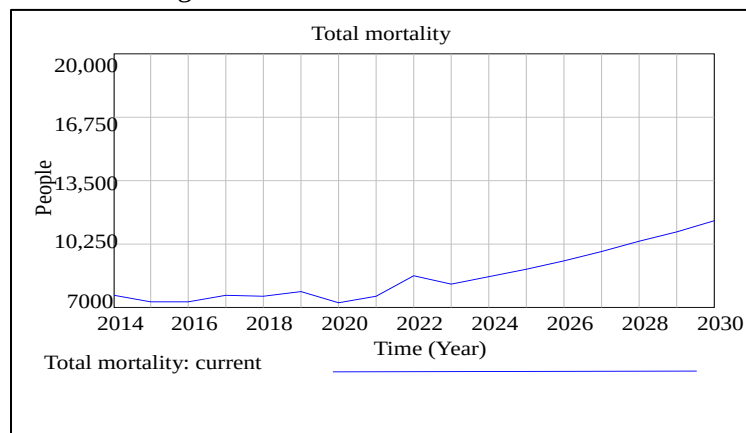


Figure 3. Probability of total mortality until

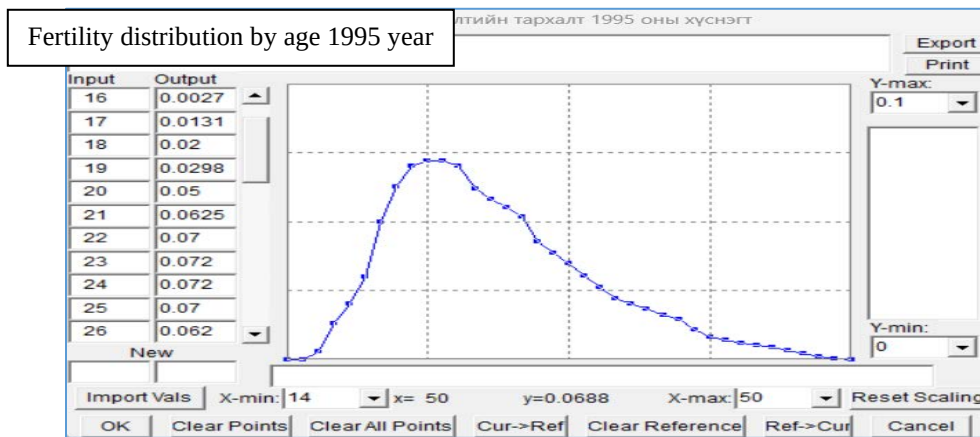


Figure 4. Fertility distribution by age, 1995

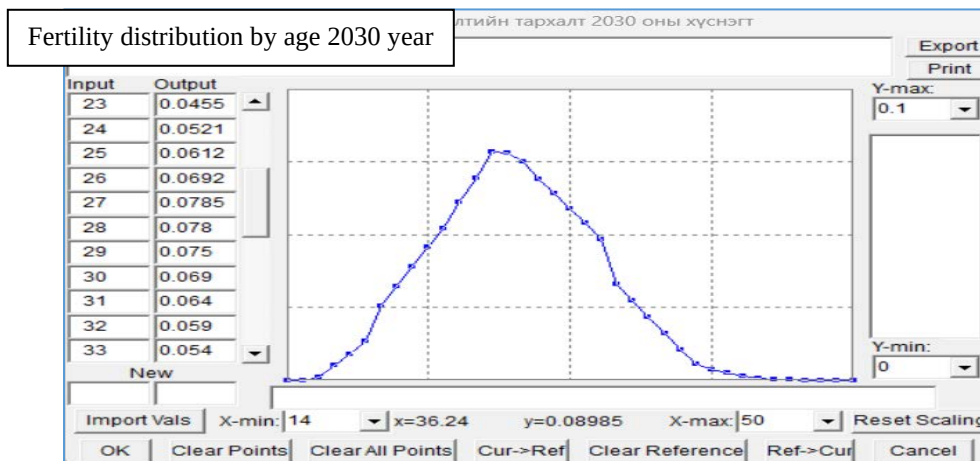


Figure 5. Birth distribution by age in 2030

According to the calculation of the birth model of Sukhbaatar district, as of 1995, the average age of birth was 19-20 years (picture4.), while in 2030, the average age of women giving birth was between 25-26 years, and a decreasing trend was observed in the number of women giving birth. Due to population growth, mortality is also expected to increase until 2030 (figure3.) From this sector, we can see the growth of the total population of Sukhbaatar district.

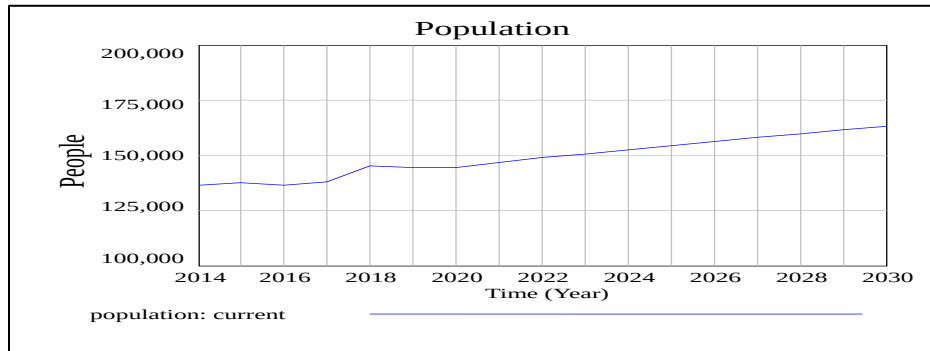


Figure 6. Total population of Sukhbaatar district, model estimation until 2030

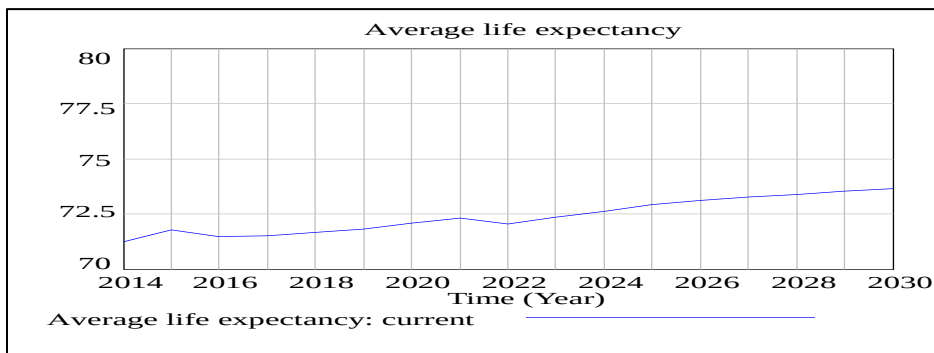


Figure 7. Total population of Sukhbaatar district, average life expectancy until 2030

According to model calculations, the average life expectancy in Sukhbaatar district was 71 years in 2014, and it will be 74 years by 2030. The share of people over 65 in the population is increasing due to the increase in life expectancy.

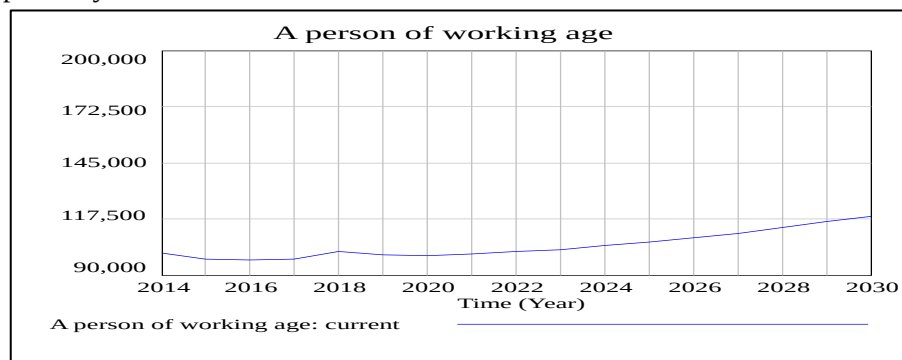


Figure 8. Working age population.

For Sukhbaatar district, as a result of the calculation, the labor force was 100871 in 2014, which gradually increased to 118842 by 2030, which indicates favorable conditions for the labor force (figure 8).

Table 2. Demographic load

Indicator	2017	2018	2019	2020	2021
Population	40	43	44	45	
aged	460	835	559	295	45 435

0-14 years					
Population aged 65 and over	6 915	7 374	7 784	8 091	8 452
Population aged 15-64	90 672	94 126	92 066	91 230	90 655
Demographic load*	52.2	54.4	56.9	58.5	59.4

31.4% of the total population of the district in 2021 are children under 15 years old, 62.7% are people aged 15-64, and 5.9% are elderly people aged 65 and over.

Table 2 shows the number of breadwinners per 100 people of working age, or the burden on society.

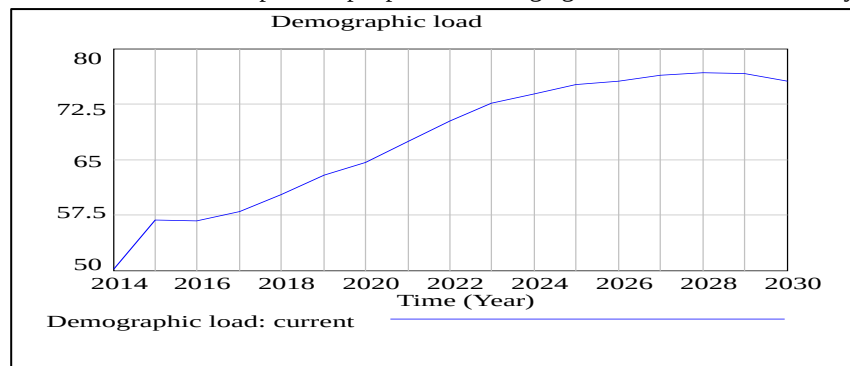


Figure 9. Demographic load

The demographic load, expressed as the sum of children under 16 and the elderly population aged 65 and over, compared to the population aged 16-64, is 59.4 as of 2021, which means that every 100 people of working age support approximately 55-60 people.

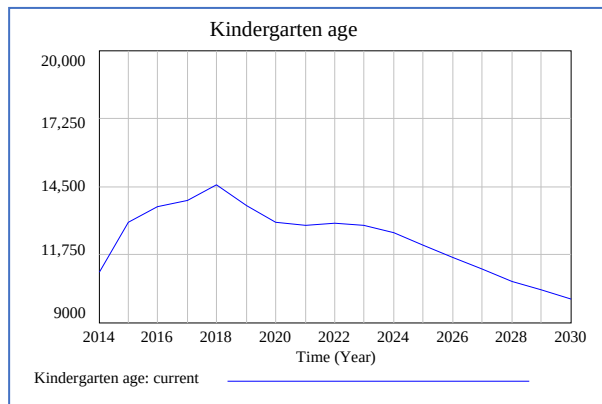


Figure 10. Kindergarten age

The number of kindergarten age children is decreasing from 11,027 in 2014 to 9,931 by 2030 (Figure 10). This indicates that the birth rate is decreasing.

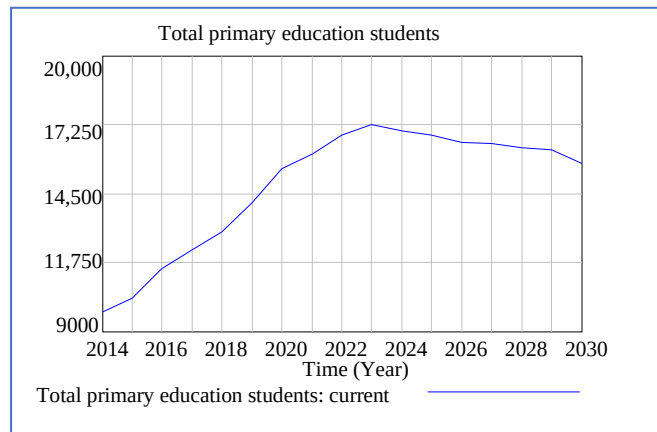


Figure11. Total primary education students

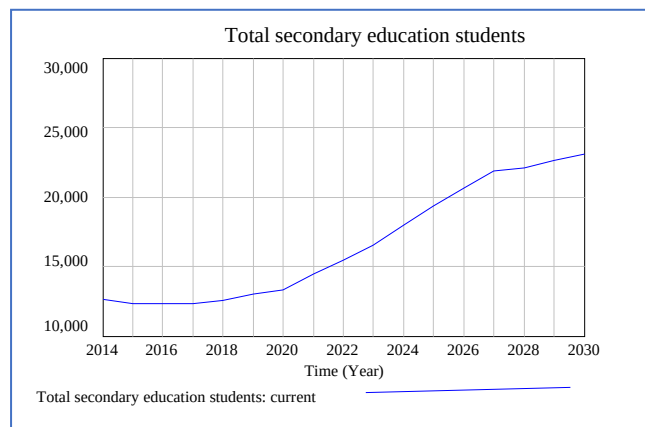


Figure12. Total secondary education students

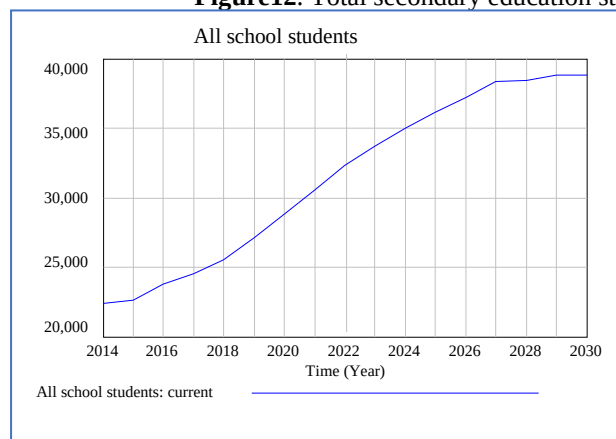


Figure 13. All school students

The number of students in secondary schools is increasing year by year, indicating that Sukhbaatar district should pay attention to the availability and capacity of schools in future planning (figures 11, 12, 13).

Conclusion

This research work shows that by calculating the future trend of population growth and labor force resources of the district, intensively developing the tourism sector in accordance with the demographics, it is convenient for the optimal planning of the socio-economic development of Sukhbaatar district. The number of children of kindergarten age decreased to 1096 in 2014 compared to 2030, which indicates the tendency of the birth rate to decrease year by year.

Demographic load as of 2021 is 59.4, which means that every 100 people of working age support approximately 55-60 people. It is believed that it will continue to grow in 2030 due to the increase in the number of people of retirement age. It is believed that the number of students in general education schools is increasing year by year, and the results of the calculation make it possible for Sukhbaatar district to optimally reflect the availability and capacity of schools in its planning in the future.

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SSSED-21

Analysis of students' satisfaction with 1+3 program at School of Technology in Darkhan-Uul, MUST

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Abstract— School of Technology in Darkhan-Uul is one of Affiliated schools of Mongolian University of Science and Technology that is located in rural area. In 2023-2024 academic year, School of Technology offer 1+3 program with other affiliated schools located in Ulaanbaatar and 32 students are studying in 1+3 program. Evaluating the quality of education and accrediting academic programs are now more driven by student satisfaction. The goal of this research is to determine students' satisfaction with 1+3 program. In this research, a satisfaction questionnaire survey was conducted online. The survey was adapted from the tools developed by Baik et al. (2015) to measure the first-year university experience. The findings indicated that, overall, students were motivated to pursue higher education in order to enhance their career prospects and acquire new skills. Additionally, students expressed moderate levels of satisfaction with their learning experiences and university involvement. When considering student identity and satisfaction, it is worth noting that students generally held positive views on their status as learners and their satisfaction with their courses.

Keywords— academic program, higher education, quality of education

1. INTRODUCTION

As a freshman, transitioning from high school to university can be quite a challenge. It's important for students to be able to adjust and fit into the campus life, including the way they learn, think, communicate, socialize, and handle other related matters. How well students adapt to the academic and non-academic atmosphere on campus greatly impacts their sustainability and success in their university studies. Unfortunately, if new students struggle to adapt to the university environment, they may encounter various problems. Some may even choose not to continue their studies into the second year or transfer to a different university that they feel is a better fit. Students who struggle to adapt and still manage to stay in college may end up being low-achieving students or require more time to complete their studies. Teachers play a crucial role in the entire educational process, particularly in teaching and evaluating students' progress. In higher education, there are no dedicated supervisors who oversee and support teachers during their lectures. Teachers seem to have complete control over designing and delivering lessons, as well as assessing students' learning outcomes. Coaching provided by departments and faculty leaders focuses more on administrative matters. Freshmen are required to adapt to campus life, which includes engaging in academic pursuits. The university is responsible for offering top-notch academic support to students. Unfortunately, there are many students who struggle to participate in academic activities due to lack of awareness or inadequate academic services. Student drive is heavily influenced by their surroundings, whether it be physical, social, or academic. The quality of lectures at university is believed to fall short of meeting the expectations of incoming student.

2. RESEARCH METHOD

The purpose of this study is to find out how satisfied first-year students are with their lectures, the assessment of what they have learned, and the academic services provided to them. Additionally, the study aims to explore the connection between student motivation and these factors. The study was conducted among 32 first-year students enrolled in the 1+3 program at the School of Technology in Darkhan-Uul, MUST, during the academic year 2023-2024. The survey utilized the instruments created by Baik et al. (2015) to assess the first-year experience of university. The utilization of the individual satisfaction questions has been restricted, primarily due to their specificity, limited focus, and numerous measures. The satisfaction questions for individuals are categorized into these main themes: teaching, assessment, and generic skills and learning experiences. The research data was collected by using questionnaires, but it was limited to only students. The questionnaire utilized a Likert scale with options ranging from 1 to 5. The Student Satisfaction survey had four parts: Explanation of the goals, range, and methodology of lectures, instructor's expertise in the subject matter and delivery, participation in lectures, and assignments. The Learning Outcomes Assessment survey also had four parts; Description of Scope and Assessment Method, Proper Implementation of Assessment in Lectures, Contextual and Authentic Assessment, and Feedback and Utilization of Assessment Results. There are six aspects that make up the variables of academic service. These aspects include Educational Facilities, Lecturers and Academic staff, Responsiveness, Treatment of Students, Understanding of Student Interests, and Academic Information System Services & Ease. On the other hand, the Student Learning Motivation variable questionnaire comprises of five aspects, which are Persistence in acquiring knowledge, Degree of determination in overcoming challenges, Curiosity and attentiveness in the process of learning, Aspiration for excellence in acquiring knowledge, and Autonomy in the pursuit of learning.

The data was looked at in different ways and the results are in Table 1.

Table 1. The Categories of Data Analysis Results

	Mean	Category
1	4.00-5.00	Excellent
2	3.00-4.00	Great
3	2.00-3.00	Poor
4	1.00-2.00	Very poor

3. FINDINGS

3.1. Students Satisfaction with the lectures

The data analysis showed that students were quite satisfied with the lectures, with a mean value of 3.82 and a standard deviation of 0.67. You can find the average values and standard deviations for each aspect in Table 2.

Table 2. Outcomes of Students Satisfaction with the lectures

	Aspect	Mean	SD	Category
1	Explanation of the goals, range, and methodology of lectures	3.87	0.76	Great

2	instructor's expertise in the subject matter and delivery	4.01	0.73	Excellent
3	Participation in lectures	3.97	0.67	Great
4	Assignments	3.65	0.85	Great
	Lecture	3.87	0.67	Great

In general, the students were quite satisfied with how the lectures were conducted (Mean = 3.87; SD = 0.67). The lecturers showed a very good understanding of the course material (Mean = 4.01; SD = 0.73), which was the highest score compared to the other aspects. The lectures that were evaluated by the students were from semester 1 and semester 2. These courses were considered to be basic subjects that were generally easy to understand. The explanation of the lecture objectives, scope, and mechanism was classified as good with a mean of 3.87 and a standard deviation of 0.76. This aspect is very important because it gives students an initial understanding of the material and how the lectures will be conducted. The interaction during the lectures was also classified as good (Mean = 3.97 and SD = 0.67). This assessment indicates that students are actively participating in the lectures. These findings align with previous studies that emphasize the importance of an effective teacher or lecturer who possesses a strong grasp of the learning materials and strategies, understands student characteristics, communicates and interacts well with students, utilizes media effectively, monitors student learning progress, and takes responsibility for student learning outcomes. Therefore, the satisfaction of the students with the lectures at the Department of Fundamental Science at School of Technology, MUST is encouraging, although there is still room for improvement. A high level of student satisfaction will inspire enthusiasm and motivation to learn, leading to optimal learning outcomes. The aspect of assignments, although it falls into both categories (Mean = 3.66 and SD = 0.84), received the lowest rating compared to the other aspects. Specifically, the items related to lecturers returning checked assignments to students received the lowest score and had fewer categories. All teachers should really focus on giving feedback to students on their assignments.

3.2. Satisfaction with Learning Outcomes

The second part of the study was to determine students' satisfaction with Learning Outcomes. The data analysis on how happy students were with their Learning Outcomes Assessment revealed that the average score was 3.81, with a standard deviation of 0.73. The mean and standard deviation for each aspect is presented in Table 3.

Table 3. Results of Satisfaction with Learning Outcomes

	Aspect	Mean	SD	Category
1	Description of Scope and Assessment Method	3.83	0.95	Great
2	Proper Implementation of Assessment in Lectures	3.90	0.93	Great
3	Contextual and Authentic Assessment	3.74	0.92	Great
4	Feedback and Utilization of Assessment Results	3.69	1.04	Great
	Learning Outcomes	3.80	0.73	Great

Overall, students were quite satisfied with how learning outcomes were implemented, with a mean of 3.80 and a standard deviation of 0.73. The assessment process was also rated as good across the board. The assessment's alignment with lectures received the highest average score of 3.90, which is excellent because it shows how well assessment and learning are integrated. This supports the idea that assessment should be an integral part of the learning process to enhance student learning. Teachers use formative assessment results to improve lectures, ensuring they have a clear understanding of student progress and needs. Effective assessment plays a crucial role in learning outcomes, and students have shown positive satisfaction with the assessment process. However, there is room for improvement in providing feedback on assignments, indicating that lecturers should focus on enhancing formative assessment implementation.

3.3. Student satisfaction with educational experience.

The data analysis findings regarding student satisfaction with Academic Services indicated a mean value of 3.67, with a standard deviation (SD) of 0.50. Detailed average values and standard deviations for each aspect are presented in the Table 4.

Table 4. Results of Satisfaction with Educational experience

	Aspect	Mean	SD	Category
1	Educational Facilities	3.30	0.71	Great
2	Lecturers and Academic staff	3.74	0.54	Great
3	Responsiveness	3.70	0.66	Great
4	Treatment of Students	3.68	0.72	Great
5	Understanding of Student Interests	3.73	0.68	Great
6	Academic Information System Services	3.72	0.72	Great
	Educational Experience	3.67	0.50	Great

The assessment results of Academic Services indicate that they are considered good, with a mean score of 3.67 and a standard deviation of 0.50. Similarly, all aspects of academic services are also classified as good. The educational facilities, which encompass adequate classrooms, laboratories, workshops, and other supporting amenities, are also classified as good. However, the average value for educational facilities is the lowest compared to other aspects, with a mean score of 3.48 and a standard deviation of 0.71. The lectures provided to first-year students, including practical courses, are still at a basic level, but there are available facilities for equipment and materials for practical exercises. Despite this, there are still some obstacles that need to be addressed, such as limited student access to laboratories and workshops, as well as a shortage of certain practice equipment.

Students generally have positive feedback about the services provided by lecturers and academic staff. However, one issue that students face is the limited time available for consultation with lecturers outside of scheduled lectures. Overall, students feel well-treated by the lecturers and academic staff, both during and outside of lectures. The information system services and convenience are also considered satisfactory by students. However, there are some areas that students believe need improvement. For instance, the wifi signal provided for students is often weak and occasionally experiences errors. Academic services play a

crucial role in keeping students loyal to their tertiary institutions. Research indicates that the quality of services offered greatly impacts student loyalty. When students receive excellent service, they feel satisfied and develop trust, leading to a stronger bond with the university. Moreover, since first-year students come from different backgrounds and cultures, higher education institutions must be able to cater to this diversity by providing top-notch services to all students.

4. CONCLUSION

Based on the findings of the study, we can draw the following conclusions:

1. The satisfaction of students with lectures, assessment of learning outcomes, and academic services has a significant impact on their motivation to learn. This influence can be seen both individually and when considering all these variables together. In other words, how universities provide services to students can either increase or decrease the motivation of first-year students.
2. Lecturers play a crucial role in providing services to students. A qualified lecturer is someone who can meet the academic needs of students according to the specified guidelines. Their expertise and support are essential in ensuring that students receive the necessary assistance and guidance.
3. When students have high motivation to learn, they tend to achieve better learning outcomes. The correlation between motivation and achievement is strong, indicating that motivated students are more likely to excel academically.
4. Additionally, high learning achievements have the potential to further enhance students' motivation to learn. Success breeds motivation, and when students experience positive outcomes, they are more likely to be motivated to continue their learning journey.

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SSPT-22

Analysing Students Political Attitudes: Case for Age Group 18-25 in Darkhan-Uul Province

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Abstract: The subject of this research is the political orientations student youth, which manifest as the factors of inclusion of young people into the sociopolitical processes. The students who are the object of the study are the people who are most likely to join the ranks of the country's political, economic and cultural elite. The author describes in detail the key theoretical approaches towards studying the political orientations and social attitudes of the youth in international and national researches. The results of studies of political activism and social characteristics of young people in different countries, such as the UK, USA, China and Russia, show that the political views and activity of young people depend on their social environment. This paper analyzes the analytic cognitive style and political orientation of students at age 18-25 in School of Technology in Darkhan-Uul, MUST and it was an online questionnaire-based data collection process by G. Almond and S. Verba. Based on the results of the study, it can be concluded that students are less interested in politics and less active, but they understand and feel that the political process plays an important role in public life. It was observed that they have low confidence in various government institutions and officials. Among the ideological and political orientations, adherence to the principle of social justice prevails, while the principle of the free market accounts for less than a quarter of respondents.

Keywords: students, youth, political orientations, ideological attitudes, political participation, patriotism, trust in power, protest moods, youth policy

1. Introduction

The 2024 is the election year. In addition, local, parliamentary and presidential elections will be held in more than 60 countries around the world, and some countries such as Russia, Taiwan and Indonesia have already had their election results. The time for regular parliamentary elections in our country is approaching. As of 2022, 29.3% of Mongolia's total population and 44% of all citizens of voting age are young people. In the 2021 Mongolian presidential election, the turnout of aged 18-25 was 50.1%, and the number of aged 20-24 had the lowest turnout. It means that only one out of every two young people voted. Generation Z" or young people growing up in the high-tech era, are the first generation to grow up in a free democratic society, and whether our democracy can be strengthened in the future directly depends on their political activity and participation.

Why is there such a large number of young people who can strongly influence the election results? However, this neglected election elects people who have the right and responsibility to decide important issues that

directly affect our daily lives. For this reason, the issue of involving young people in the political life of the country has become one of the most complicated issues of our time.

Young people are a special socio-demographic group that shapes the future image of the country and plays the role of social reproduction. During the transition to adulthood, young people face various social and economic challenges that affect their participation in socio-political processes. Today's young people vary greatly in terms of their share of the population in different regions, their education, their values, and their opportunities to pursue their aspirations.

There are several definitions of the age range of youth in sociological research. According to the World Bank, for statistical purposes, youth is defined as the population aged 15-24. In many countries, including the United States, sociologists define the youth of the population as 12-24 years old, but further distinguish between "adolescents" (12-18 years) and "youth" (18-24 years). But in Russia, the category of "youth" includes people from 14 to 30 years old: In 2017, the "Law on Promotion of Youth Development" in Mongolia defined 15-34 years old as youth. As of 2022, 29.3% of Mongolia's total population and 44% of all citizens of voting age are young people. Today, the total population of 18-24-year-olds in our country is 317,376, of which 112,451 or 35.4 percent are undergraduate students. [1] Most of them are studying in Ulaanbaatar city, 2,959 students in Darkhan-Uul province.[1]

These students are the ones most likely to join the ranks of the country's middle class and political, economic, and cultural elite.

Political orientation is understood as an individual's approach to socio-political reality, as well as principles, opinions, concepts, and belief systems that determine people's political position.[2] One of the classic works on the study of political attitudes is the work of G. Almond and S. Verba published in 1963 "Civil Culture: Political Attitudes and Democracy in Five Countries"[3]. They proposed three forms of political orientation:

1. Cognitive orientation ("knowledge and beliefs about the political system, its role, content, information received from the environment")

2. Emotional orientation ("Attitude towards the political system and feelings about the results of its activities")

3. Evaluative orientation ("judgement and evaluation of political objects" that combine the norms and criteria of values with information and feelings)

The author of the book "Social-Political Psychology" G.G. Diligensky. He learns that the individual acquires many attitudes from the social experience of other people, from representatives of their social group (environment). Therefore, an interesting conclusion was made that the socio-political orientation of young people becomes a product of social views and positions shared by representatives of the older generation. [4]

In 2005, J. Alford, S. Funk, J. H. Ibbins conducted a study that proved that political attitudes are highly heritable. A study of young people's political views and participation in politics in the UK found that young people with low levels of education are less likely to participate in elections, and young people have more negative attitudes towards social welfare.

The results of a sociological survey conducted among young people in Shanghai, China, among foreign studies on the political orientation of young people, are of great interest. According to the results of the survey, the issues that most worried Chinese youth were housing reform (49.23%), health and pension insurance reform (36.49%), and consumer price reform (34.12%). They considered that the two most

important criteria for successful government management are "social stability" (42.3%) and "strong economy" (51%). Therefore, young citizens evaluate political events and even political regimes based on how they affect their economic well-being.[5]

Mongolian political scientist S. Boldsaikhan” While the level of traditional political participation of bold young people is rapidly declining in most countries, new forms of "non-institutional" participation have emerged, such as joining civil society organizations, collecting signatures on petitions, expressing opinions online, participating in protests, etc.

In other words, we believe that we are living in an interesting time where it is possible to influence politics to some extent just by clicking like or share on social media.[6]

In recent years, in many countries, including our country, the political participation of young people has been weak. The purpose of the article is to study the political trends that are the factors that attract students to the political process, to evaluate their interest in political events, their trust in government institutions, their views on the main socio-political principles of society, and their patriotism.

2. Research Survey

In order to determine the social and political attitudes of young students, from March to April in 2024, the questionnaire was conducted among the students of Darkhan School of Technology (MUST), National University of Medical Sciences (Darkhan), University of Agriculture (Darkhan), Darkhan University, and University of Humanities in Darkhan-Uul province. The survey was conducted using the google forms program. The set of research questions was aimed at determining three levels of youth attitudes: 1. At the cognitive level – students' interest in socio-political processes, issues of political participation, and level of trust in the political system were determined; 2. At the emotional level - the possible reaction of students to the violation of their rights, the level of patriotism; 3. At the level of evaluation, we aimed to clarify the opinions of young people about the best socio-political system and determine the coherence of their life plans with social development.

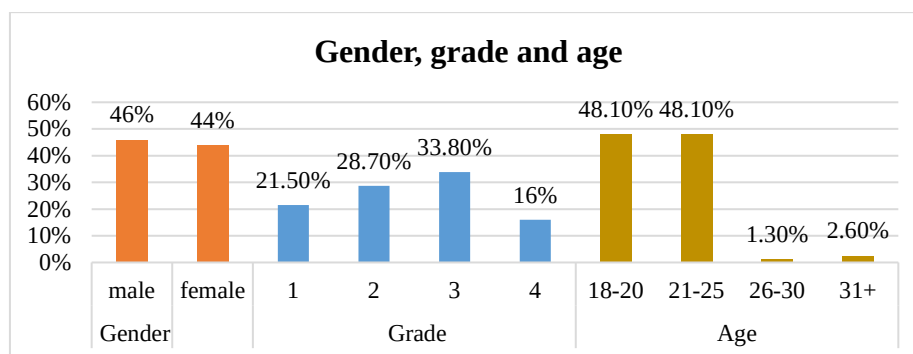


Figure 1. The students' gender, grade, and age

In Figure 1, it shows that a total of 474 students were asked to fill out the questionnaire, including students aged 18-25. Among them , 109 respondents (or 45.9%) of the respondents were male-youth and 128

respondents (or 54.1%) were female-youth. As result, we could investigated the study of the political trends of the student youth at the cognitive level, it was seen whether they are interested in socio-political life, the issue of political participation, as well as the level of trust in the authorities. See Table 1.

Table 1. Survey results

	Questionnaire	Summary
1.	Are you a student interested in the political and economic life of Mongolia?	20.3% of respondents are closely monitoring the development of the situation; 55.2% "observes the situation and changes, although it is not very interesting to me"; 15.6% are not interested in political events, and 8.8% could not give a clear answer. Therefore, it can be concluded that our students are not very interested in politics, but they understand that the political process plays an important role in social life. This situation cannot help but affect their political activity, especially the traditional political participation of voting in elections.
2.	Do you participate in elections?	In response to this question, 20.7% "try to participate in elections if there is time"; but 34.6% of them vote in the elections without fail, and 16% of them said that they will vote without fail when they reach the voting age, which means that the number of people who are interested in the political and economic events of the country roughly coincides with the number of people who are going to participate in the elections.
3.	In your opinion, which social and political forces in Mongolia can be trusted the most?	32% of young students expressed their lack of trust in the head of state and government institutions. According to our research, law enforcement agencies (police, courts, prosecutors) lead with 14.5%, followed by business representatives with 10.5%; mass medias / radio, television, facebook,etc. / were 8.9%, Government of Mongolia and state institutions were 8.2%; President of Mongolia was 6%; The leaders of the parliament and local administrative organizations of Mongolia were 3.5% each, the members of the Great Khural of Mongolia were 3%, the mayor of Ulaanbaatar, churches and religious organizations came in with 0.9%. Confidence in any political institution reflects the whole complex of objective and subjective social relations, and at the same time, it is the result of the demands of the social environment on the political system and the youth policy pursued by the state.

We investigated the emotional level if there is the possible reaction of students to the violation of their rights as the level of patriotism. In Figure 2, it is shown that their trust in the law enforcement system is low (as 14.5%), 56.9% of respondents chose to turn to the police, prosecutors, and courts. 11% of the surveyed students said that "they will not do anything because they are sure that any action will fail", 12.7% of students are ready to turn to the authorities, 9.7% to the media and the public. get public attention by contacting the organization, 2.5% are ready to "use personal connections and rewards" and only 7.2% are ready to organize protests. Therefore, the majority of young people as 60%, they would like to act according to the law in risky and uncertain situations attitude is a good thing. But a few is ready to protest.

Figure 2. Reaction of students to the violation of their rights

In the Figure 3 and 4, we tried to identify the level of patriotism in real as paying on their mind about their views in broaden frame. Here is the result of it, the question as "Do you consider you are a patriot?" was amounted 71% out of all students. how to explain the concept of "patriot" with multiple options in order to know what the concept of "patriot" means. The respondents' answers are shown us that as civilians on duty and as legal ones were amounted 30.1% like the prior, as the lover of the country amounted 22.5%; how to be proud of the history and culture of our country amounted 15.8%; how to actively fight against the threats that are destroying the country amounted 12.3%; how to protect the country with armed if necessary

amounted 6.3 %, their willingness for future of the country amounted 8.3% each ; their willingness for bright future amounted 6%; being warmhearted of the country amounted 0.6% each.

This survey identified a very positive attitude of young people towards patriotism. In other hand, an important factor in the development of patriotism is the attitude towards the history, culture, achievements, and success of the country, as well as faith in the future of the country. The participants of the study emphasized the active components of patriotism, such as obeying laws, fulfilling civic duties, and fighting external and internal threats, which shows that patriotism is not only an abstract concept in students' minds.

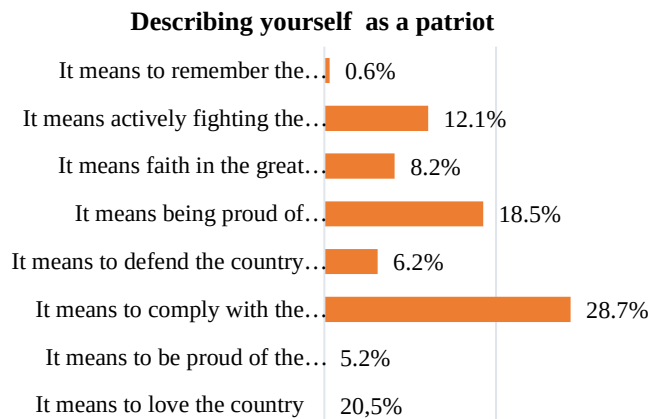


Figure 3. The level of patriotism
Figure 4. Students' understanding on patriotism

As at the level of values, the opinions of young people about the socio-political system were clarified, and their dependence on the level of optimism and pessimism of their life plans and the development of social relations was revealed.

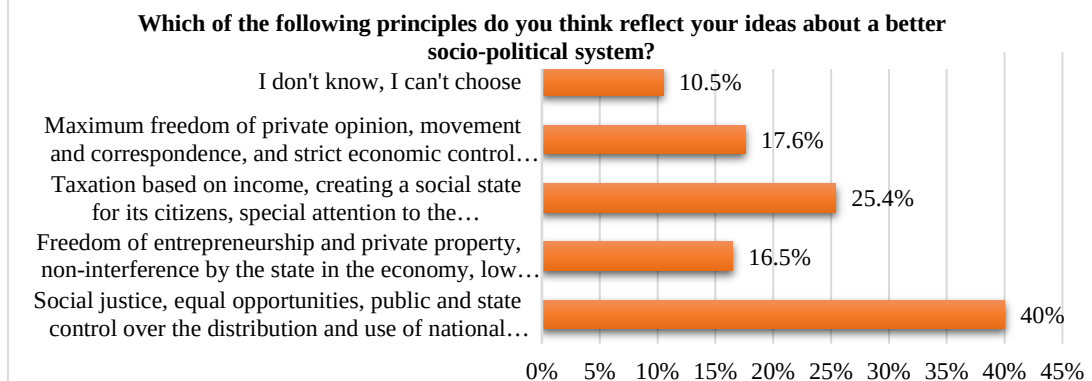
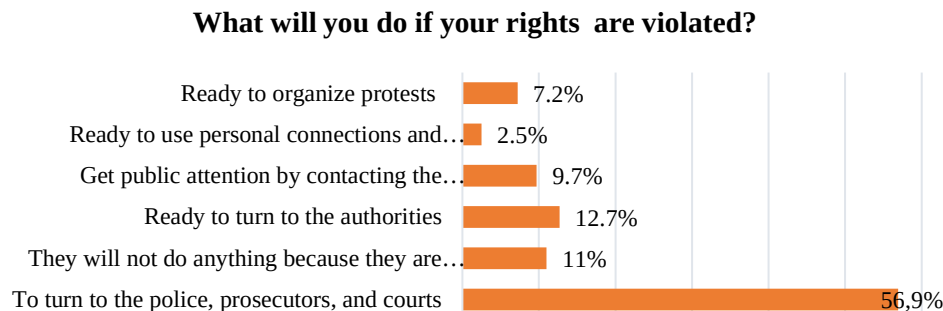


Figure 5. Students' understanding of a good social and political system.

When clarifying the ideological and political attitudes of young students, we paid attention to the fact that the generally recognized categories of liberal, communist and socialist hardly reflect the views of young people and may be incomprehensible to them. So ask them, "Which of the following principles best represents your idea of a better socio-political system?" The question was asked. In doing so, socialism, right-liberalism, socio-democracy; made a choice by listing the main principles and characteristics that define four ideologies, including left liberalism.

It is noteworthy that 40% of the respondents chose the socialist principles of social justice, equal opportunities, public and state control over the distribution and use of national resources, and took the leading position.

25.4 % of the respondents chose taxation based on income, creation of a social state for citizens, state and public organizations to pay special attention to the development of "people" in the frame social-democratic principles. Freedom of enterprise and private property, non-interference by the state in the economy, low taxation of all forms of business e.g. right-liberalism amounted to 16.5 % chose. The libertarian approach was chosen by 7.6% of the respondents for the maximum freedom of personal opinion, movement and correspondence, and strict economic control of big business. The percentage of people who did not choose any of the proposed options was 10.5%, which is quite high, and perhaps we did not offer enough options. It should be emphasized that it is difficult to align today's youth with any specific ideology and opinion, and the answer to this question allows us to judge only a certain attitude. Most striking is the preference for socialist ideals of social justice and state control of the economy over liberal ideals of free enterprise and markets. It is concluded that the formation of the concept of this good social system was influenced by parents and older relatives, that is, people who were socialized during socialism. One of the important characteristics that characterizes the youth of this generation is the level of optimism. See Figure 6 and 7.

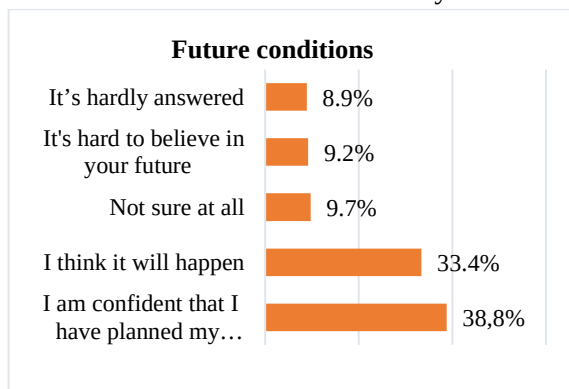


Figure 6. Future conditions

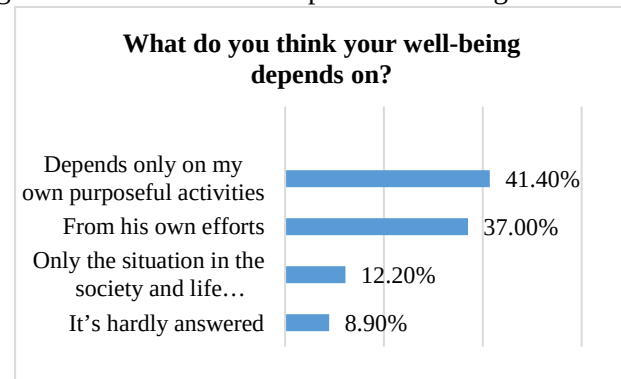


Figure 7. What do you think your well-being depends on?

According to the results of the survey, 72% of young people are confident and optimistic. Factors that affect students' optimism are the fact that they have little involvement in solving the problems of everyday life and that there are ample opportunities for self-development. Many studies have shown that the level of optimism tends to decrease with age. Social well-being and expectations are closely related to the perception of the country's situation. "What do you think most depends on your well-being?" to the question, the majority of respondents amounted 41.4% answered that they are sure that it depends only on their own goals, creative activities and efforts, while life conditions and their own strength

37.5% of them believed that it depends equally on effort. According to the answers, 78.9% of students believe that they should be active and purposeful, and it is very commendable that they do not have a tendency to assign all their responsibilities for their own well-being to the society. In Figure 8 we had some answers on the question as “What do you think hinders the implementation of the youth life plan in our country?”

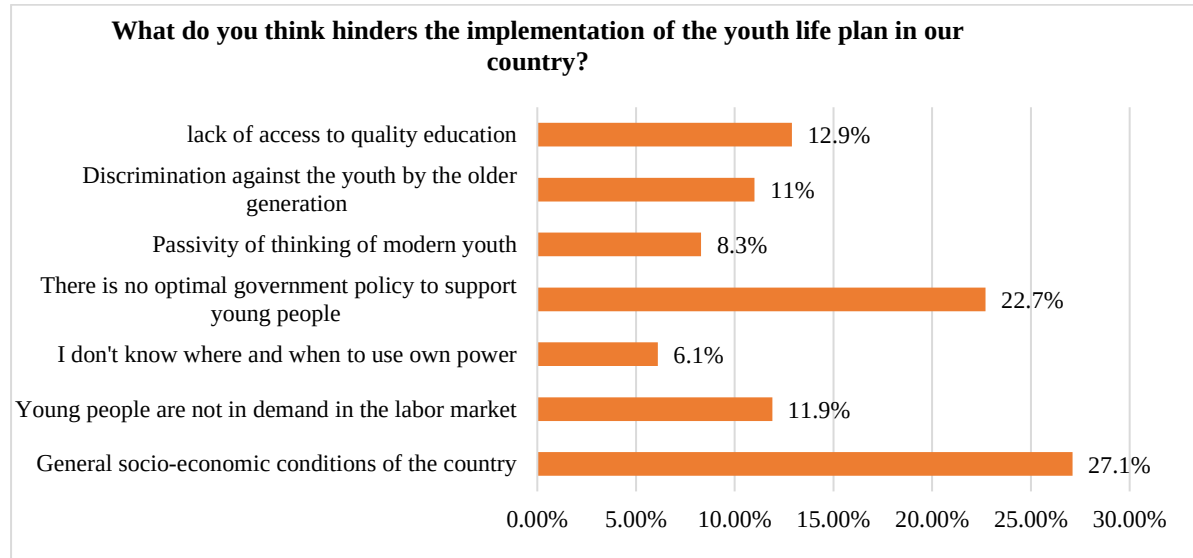


Figure 8. Problems of youth

Finally, "What do you think is an obstacle to the implementation of the youth life plan in our country?" In the 2-3 choice question: Out of 27.1% said the general social and economic situation of the country, while 22.7% said there is no optimal state policy to support the youth; out of 11.9% of young people are in low demand in the labor market; out of 12.9% pointed to "the lack of access to quality education; out of 11% discriminated against the youth of the older generation; out of 8.3% emphasized the "thinking and passivity of modern youth" and out of 6.1% "where and how to use their power I don't know," he answered. According to the answers above, young people believe that the government and society should bear the responsibility for the failure that may occur due to the lack of optimal government policies to support young people, low demand of young people in the labor market, lack of access to quality education, and discrimination by the elderly. At the same time, about 9% of the respondents agreed that youth activity is weak. In the answers to the last two questions of the survey, young people combine the unfavorable conditions of the social environment with optimistic expectations, which shows that they have a very contradictory assessment of the influence of objective factors that influence success.

3. Conclusion

According to the results of the research, many factors affect the political participation of students and youth aged 18-25, but the lack of basic social and political knowledge has a direct impact on young people not participating in elections and not being able to make independent choices when voting. Therefore, it is important to take basic education courses, programs and influence measures for young people aged 15-18 years about social and political participation, and to make political education a compulsory subject for

students in higher education. Students do not trust the existing political system, the main government institutions and officials, which is the result of the government's youth policy. Developing policies that take into account the interests of young people and solve problems is an opportunity to increase the active participation of young voters.

At the emotional level of political orientation, most of the students or 56.9 percent preferred to solve the problem within the legal framework. The percentage of students who consider themselves patriotic was amounted 71%. In the definition of patriotism, there is an awareness of the need to actively express patriotism - to fulfill one's civic duties, to protect the country with a weapon in hand, and to actively fight internal threats or 47 percent, which shows that students are quite energetic young citizens.

At the level of values, 40 percent of the respondents chose the basic principles of socialism: social justice, equal opportunities, and control over national property, according to foreign political scientists (J. Alford, S. Funk, J. Hibbins) does not contradict the conclusion.

The results of the research, especially the opinions of young people about what prevents them from implementing their life plans, show what should be considered in order to influence their political activities. First of all, it is necessary to increase the effectiveness of government policies aimed at youth, especially to increase the opportunity to provide jobs for university graduates, to provide broad information about currently implemented youth programs, and to increase access to quality education.

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SSED-23

Some Results of Teaching Business English using PBL

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Abstract— This research highlights the positive outcomes of implementing Problem-Based Learning (PBL) for both the co-lecturer and the students in an English for Business program at School of Technology in Darkhan-Uul Mongolia. In this study, qualitative research methods are employed to examine and explore the implementation of projects in the classroom. The research involves conducting classroom observations to observe how these projects are carried out. Additionally, interviews are conducted with ten student representatives and the co-lecturers to gather insights on the advantages of Problem-Based Learning PBL. Most of the research conducted in the field of PBL primarily examines its impact on learners' language skills and project-related knowledge. However, this paper highlights the positive effects of PBL on personal, professional, and particularly social development, which have not received much attention in current literature. The study's findings revealed that while development was observed in all three areas, there was a significant difference, with social development being unexpectedly highly valued by the learners. Additionally, the lecturer in this study emphasized the benefits of PBL in terms of motivation and discipline-based knowledge acquisition..

Keywords: Business English , PBL, English language skill, co-teaching

1.INTRODUCTION

Project Based Learning (PBL) is an instructional strategy that educators can employ to actively involve ESL/EFL students in their learning process. By utilizing PBL, teachers can effectively assist students in developing a diverse range of English language skills and related soft skills, including critical thinking, effective communication, and collaborative teamwork. PBL holds particular value in the context of teaching English for Specific Purposes (ESP), particularly in the realm of Business English. In ESP courses, the focus is typically centered around a specific occupation or profession, such as English for Cultural Management, English for Library Science, English for Museum Management, English for Business, English for Academic Purposes, English for Tourism, and so forth. The implementation of the Problem-Based Learning (PBL) approach brings about a significant transformation in the role of instructors or lecturers, as they assume the role of facilitators or coaches. This transition is aptly captured by the well-known phrase "guide on the side" rather than "sage on the stage." Throughout the course of the project, the coach, who takes on the role of the instructor, consistently engages and collaborates with student teams, providing them with iterative feedback. In PBL environments, I personally prefer to refer to myself as a "senior learner" rather than a "professor," as the most effective PBL coaches are those who actively learn alongside their students. Given that PBL projects typically involve teamwork, the development of English language skills can be effectively distributed among learners with varying levels of proficiency, including low, intermediate, and high. This implies that during team collaborations, each individual student's unique strengths and preferred learning methods, such as reading, writing, listening, watching, or speaking, can contribute to and reinforce the

English language abilities of other team members and the group as a whole. Consequently, both students and instructor-coaches have the opportunity to learn from and teach one another, creating a dynamic and mutually beneficial learning environment. The PBL teaching method's guiding principles and desired educational outcomes are congruent with the aims of fostering business English proficiency in students pursuing a business English major. Furthermore, business English students express a keen anticipation for a transformative teaching methodology.

2. RESEARCH METHODS

This qualitative case study aims to examine the utilization of Problem-Based Learning (PBL) within an Business English course at the university level. The primary objective is to gain a deeper understanding of the advantages of PBL by exploring the attitudes, beliefs, and experiences of the participants involved. This research concentrated on English for Business courses that were offered to English-major students at the School of Technology in Darkhan-Uul aimag, Mongolian University of Science and Technology (MUST). The research involved the project implementation within a group of 23 students at the School of Technology in Darkhan-Uul, MUST. One lecturer who was from Fulbright English program held a Master's degree in English Language Teaching but lacked experience in teaching ESP courses, another one was an experienced lecturer not only teaching ESP but also she has Ph.D in co-teaching methodology. The primary objective of the 16-week English for Business course was to enhance students' proficiency in Business English language and expand their knowledge in Business-related subjects. The course utilized the textbook "Business English" (Taylor John Zeter Jeff), published by Career Paths, along with supplementary materials provided by the course instructors who served as co-teachers. In accordance with the course objectives, the curriculum was structured based on a number of criteria. Initially, students were guided through the essentials of business communication in English to impart practical English skills. Subsequently, the goal was to improve students' English listening and speaking abilities in a business context, and to introduce them to business strategies in various business settings. Moreover, we aimed for our students to build a strong foundation in global business through real-world experiences, a key objective of the curriculum design.

During the initial ten weeks of the course, the instructors introduced the curriculum and covered the first five units, which encompassed topics such as product brands, travel, banking, currency exchange, and finance. Each of these topics aimed to equip students with the necessary language skills and professional knowledge applicable to various business contexts. Additionally, at the conclusion of each unit, students were presented with a case study to further enhance their understanding. The remaining five weeks of the course were dedicated to students engaging in group projects and delivering project presentations. We divided students into 4 groups and each group discussed about some challenges that they have faced in their learning environment, then they selected the most important thing that they want to change by getting grant project. Our students had written their project proposal for 3 weeks and they gave presentations about their project at American corner in Darkhan-Uul. During their presentation some workers of US Embassy had observed their presentations.

In this research, a combination of qualitative and quantitative approaches was employed to examine the perspectives of students regarding the project-based business simulation. The data collection techniques utilized in this study included focus group interviews and questionnaires. The reason for conducting focus group interviews in this study was to tackle the matter of how project-based English learning in a simulated

business setting affects the participants. This was done by allowing the participants to share their experiences and insights, which were generated through their interactions with one another. The focus group interview gave participants a chance to think about and discuss questions, listen to different viewpoints, and contribute more details to the original discussion. Group discussions not only allow participants to share different perspectives, but also encourage them to think more deeply about their beliefs, attitudes, and experiences. Therefore, the benefits of using focus group interviews in this research included:

- a. gathering a variety of viewpoints and insights that arise from group interactions
- b. understanding how participants discuss a business simulation course.

The focus group interview in this study focused on openly discussing three key areas related to participants' perceptions and experiences:

- a. their thoughts on taking a business English course and their expectations as future learners;
- b. identifying factors that contribute to the effectiveness or ineffectiveness of the course;
- c. exploring the impact of their expectations and desires from the business English course.

After enrolling participants for the focus group discussion, the researcher developed an interview protocol. The protocol included questions such as: What aspects of the business English course impressed you the most? Did you notice any variations in business English courses after completing this course? Have you observed any improvements in your English proficiency, learning abilities, and professional knowledge following this course? The participants were then divided into 5 focus groups for the interviews. The group discussions were recorded and subsequently transcribed. Each group interview lasted around one hour. All interviews took place after the students had completed their projects and course obligations.

Thematic analysis was conducted through the following procedures:

1. Familiarizing oneself with the data by reading and re-reading it
2. Coding or labeling the entire text
3. Identifying themes that exhibit broader patterns of significance
4. Reviewing the themes to ensure they accurately represent the data
5. Defining and naming the identified themes
6. Composing a narrative that integrates quotes from the interviewees.

3. FINDINGS

The data gathered from the questionnaire and qualitative method will now be analyzed and discussed. Out of the questions asked, there were five items that received a high percentage of strong agreement or agreement. These items are as follows:

- a. I have access to a variety of resources to carry out the project.
- b. I strongly believe that the success of the project requires the involvement and effort of every team member.
- c. Completing this project helped me see how my learning applies to the real world.
- d. Completing the project allowed us to take charge and create our own strategies.
- e. Completing the project required us to work hard and not give up.

From the focus group interviews, a total of six themes emerged as a result of the qualitative analysis. These themes include Marketing and Communication Skills, Highly Practical, Interesting, and Vivid

Course, Highly Professional Course, Increase in Oral Language Skills, Teamwork Skills, and Presentation Skills. Consequently, the integrated results from both quantitative and qualitative methods revealed six categories of outcomes from the business simulation. These outcomes indicate that students were able to develop marketing and communication skills, enhance their proficiency in English speaking, presentation, and PowerPoint construction, recognize the significance of teamwork, demonstrate persistent efforts grounded in professionalism, comprehend the relevance of the course to real-world applications, and exercise autonomy in decision-making and policy formulation.

When questioned about what they found most impressive about the project, the majority of students shared that they were able to gain real-world experience in writing their projects. They mentioned that this course helped them develop their communication skills, negotiation techniques, marketing strategies, and understanding of body language while presenting a product. Additionally, they learned how to effectively utilize marketing strategies and communication skills to give presentations. Students also highlighted that through hands-on learning, they acquired practical skills like presenting products in English, grasping business principles, and mastering effective communication - all of which are not typically found in textbooks. Moreover, they emphasized the importance of not only communicating with customers but also with their team members during the sales process, as any miscommunication could impact the project's success. The students' feedback during the interviews is summarized in Table 1.

Table 1. Thematic Analysis

Students	Interview answers
S02	PBL is awesome because I can select the topic that I love for my project. It's super important to have the freedom to choose topics that truly interest us because it helps us stay motivated and put in our best effort. It's great that we get to choose our own topics instead of having the teacher decide for us.
S04	This course opened my eyes to a whole new world. We explored the depths of communication skills, negotiation skills, marketing and selling strategies, and body language. It was an incredible journey of self-discovery!
S12	My education provided me with the opportunity to develop effective personal communication skills, while also learning about the principles of marketing and business
S16	The class helped me see how important it is to talk to others. If we don't speak up, people won't know what we're thinking. If I did things my own way in this class, it wouldn't have been successful. I found out that good communication takes practice to tell others what we want and make sure they understand our goals.
S20	I discovered how crucial marketing strategies are. If we want to get customers interested, we need to have excellent communication skills that can make them want to buy our products.

The majority of students indicated that this business English course completely changed their perspective. Initially, they believed business English classes were all about rote memorization of vocabulary specific to business, which they found dull. However, they were pleasantly surprised when the instructor encouraged them to develop a business plan, market a product, and engage in real business activities. Consequently, most students expressed that they found the course enjoyable, stimulating, and practical.

Table 2 presents the findings regarding the influence of PBL on professional competencies.

Table 2. Analysis of professional competencies

	The project supporting me	N	Mean	Std.D
Teamwork Skills	Enhance my teamwork skills by collaborating with others	23	3.40	0.53
	assigning tasks, evaluating progress language.	23	3.30	0.54
	making decisions on project timelines,	23	3.33	0.60
	Embrace diversity in skills, personalities, and interests within the group.	23	3.35	0.51
	Fulfill responsibilities as a committed team member and learn about leadership from others.	23	3.43	0.48
Communication skill	Enhance my ability to express thoughts, feel more self-assured when discussing with others, and become better at negotiating.	23	3.32	0.52
	Develop my English presentation skills to confidently speak in front of my classmates.	23	3.09	0.63
	Acquire adaptable communication skills to effectively interact in various situations.	23	3.23	0.52
	Cultivate the art of active listening, valuing diverse opinions, and respectfully engaging in discussions.	23	3.41	0.51
	Prepare myself to answer follow-up questions from teachers during the concluding presentation debate.	23	3.01	0.57

In this project, the learners mentioned that they gained valuable knowledge about the significance of working together as a team. They also learned how to assist one another efficiently while respecting time constraints. Moreover, they discovered the importance of utilizing each team member's unique strengths and the role of effective leadership in achieving success. The project participants also highlighted their acquisition of presentation skills. They emphasized that proficient presenters do not rely on reading the words directly from the slides. Instead, they effectively incorporate information, elucidate the main points using the slides, and strive to keep the audience engaged.

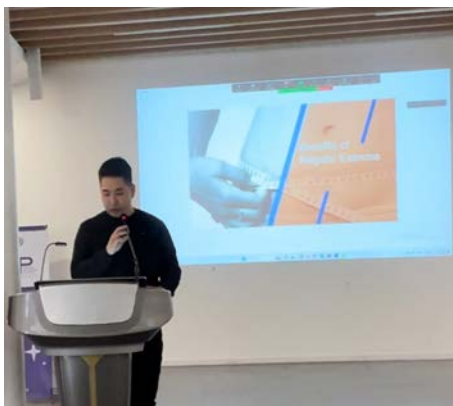
The results from the questionnaire show a range of responses regarding the participants' perspectives on different aspects of the project. It is evident that there is a mix of agreement and disagreement among the participants when it comes to their abilities and experiences during the project. The data indicates that some participants feel strongly about certain aspects, such as teamwork and individual effort, while others have a more neutral stance. Overall, the questionnaire results provide valuable insights into the students' perceptions of their learning experiences and achievements throughout the project.

CONCLUSION

Based on the information provided earlier, it can be concluded that:

1. Students expressed that they were given the autonomy to establish their own decisions and regulations within the course. They found the course to be both professional and engaging, leading them to willingly dedicate time to discussing the team project. It was emphasized that students needed to collaborate to reach the best decisions for their project within the course.
2. It was highlighted that without the establishment of mutual trust and respect to handle conflicts within the group, students would struggle to achieve productive group work. The instructor aimed to create a psychologically comfortable and stress-free group environment by providing systematic guidance on team-based business simulations.
3. Throughout the semester, students were encouraged to develop a set of group norms to promote open idea exchange and enhance interactions within the group. The instructor closely monitored the groups, reminding them of the expected group norms and learning outcomes. This approach aimed to ensure that students understood their project tasks and how to engage in constructive discussions. Ultimately, the study's findings aligned with the concept of team psychological safety, emphasizing the importance of respecting diverse perspectives and fostering a safe environment for students to achieve collective success.

APPENDIXES





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SSED-24

A comparative analysis of children's ability to retain information: Case for normal and autistic children at 8-10 ages

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“During childhood, there is a significant increase in the ability to retain information for short periods of time. This growth in temporary storage of speech-based material occurs from the preschool years to adolescence and involves various complex changes in different cognitive processes. The research conducted in this study focuses on assessing the short-term memory capabilities of a child diagnosed with autism in comparison to a typically developing child at 9 age by using some color pictures cards developed by Mongolian National Institute of Educational Research and black cartoon on TV. Child diagnosed with autism spectrum disorder exhibited notably higher retention accuracy levels when being taught with photographs as opposed to cartoons. In a surprising turn of events, this child also displayed more precise responses compared to typically developing child when learning from photographs. The findings of our study indicate that child with ASD benefit significantly from the increased iconicity provided by photographs when learning new words, thus supporting the use of color photographs in picture-based interventions.

Keywords: vision ability, cognitive development, autism, concentration, equal inclusion education

1. Introduction

Memory has been extensively studied in the cognitive process by both foreign and domestic scientists. The "Study of Children's Psycho-Physiological Development" Group at the Institute of Educational Content and Methodology delved into the forest development of preschool children, examining language development and memory usage in children aged 4-7. The research revealed that children's speech-meaning memory becomes more organized with age, expanding their daily use of memory and enhancing their ability to manage it effectively. Additionally, the level of forest development in children, intentional and non-intentional forest development, forest recognition, and other research indicators in speech, perception, and thinking, all show a common trend of improvement with age. Individual differences among children of the same age were also noted. Researcher O. Myagmar's study on "Forgetting and its patterns" highlighted the impact of educational materials on the memory of university students and youth. The research emphasized the importance of considering forest patterns, especially in terms of time, effects, and characteristics of delays, when organizing lessons to mitigate forgetfulness. Similarly, Researcher J. Batdelger's work on the "Physical-mental development of young children" in 1999 shed light on the forest features at each preschool age, contributing valuable insights to the field. Early childhood development is intricately connected to perceptual development, characterized by being non-targeted and non-intentional. The relationships children form with objects and

adults play a crucial role in their overall development. However, it has been observed that preschool age marks the initiation of goal orientation in children. 2. While the research conducted by our country's scientists on forest development in early childhood has not been fully explored, the existing summaries suggest that studies on various aspects of forest development during the preschool years have been conducted at a satisfactory level. Nevertheless, there is a need for further research during the early school years to enhance our understanding in this area. 3. The research on memory conducted by our country's scientists lacks a systematic approach, but studies on cognitive function and forest development in preschool children have commenced at an appropriate level. To maintain the momentum of this research, it is recommended to delve into the memory characteristics of young school children for a more comprehensive understanding. Gillett conducted a significant study comparing the brain development of preschool and school-aged children with that of adults, marking the first study of its kind in the 20th century. A.N. Leontiev explored the intentional and non-intentional determinations of children's development, utilizing syllables and words, while P.I. Zinchenko and Z.I. Istomina examined the impact of different forms of activity on children's decision-making processes. N.A. Kornienko, on the other hand, focused on comparing children's ability to identify objects and words. The study of cognitive models of forests gained momentum in the 1960s, thanks to advancements in information and technology. Cognitive studies typically delve into the reception, storage, processing, and transmission of information. Overall, these studies collectively demonstrate that deliberate rational actions, specific methodologies, goal-setting, cause-and-effect analysis, and establishing meaning all contribute to effective determination and recall.

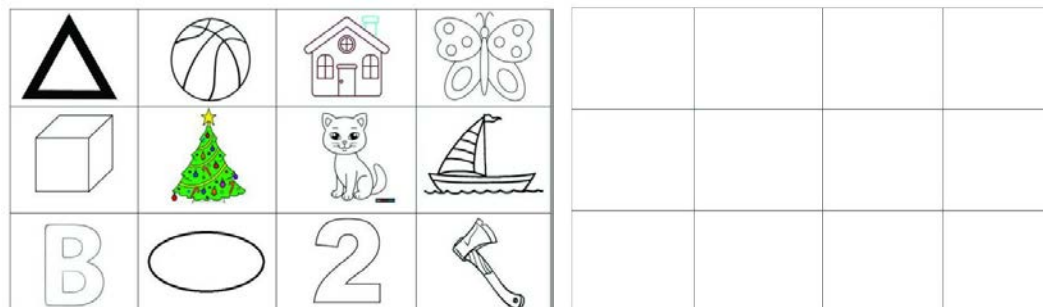
2. RESEARCH METHOD

The purpose of this study is to investigate and compare the visual short-term memory abilities of both normal and autistic children. The research subjects selected for this study include middle-range autistic students (I and A) as well as physically and mentally healthy individuals (G and E). The research objectives are twofold: firstly, to examine and determine the ability to perceive visual information within a short period of time, and secondly, to analyze the results of the research on short-term listening abilities. The survey methodology employed in this study is based on the "Diagnostics and Indicators of Comprehensive Development of Children (6-10 years old)" issued by the Human Development Research Sector of the Institute of Education. Specifically, the study utilizes "J. Miller's method" to assess the ability to perceive visual information in the short term, and the methods of "AR Lurney" to evaluate short-term listening skills.

2.1 Short-term visual acuity (8-10 years old)

According to psychology, the visual sense plays a crucial role in acquiring information. It is believed that simple icon identification is easier than digitization and identification because it heavily relies on visuals. By setting goals within a short timeframe to sequentially establish numerical and digital information, not only does it demonstrate short-term memory, but it also contributes to the development of abstract thinking. As children grow older, their ability to perform these tasks improves. The environment plays a significant role in supporting a child's cognitive development as a learning method. At the age of 8-10, children's abstract thinking skills begin to develop, and their calculation abilities reach a certain level, enabling them to identify and recall numbers effectively. In order to study the subjects' ability to perceive, retain, and recall images or pictures within a short period of time, the study utilized "J. Miller's method". This method involved presenting a table with pictures to each child, either individually or in groups, for a specific duration. Once the time was up, the

page was turned down, and the children were asked to draw what they remembered from the blank table in the correct order. The results were determined based on their performance in this task.



[Table -1] Features and specifications of each level

Score	Scale	Level	Feature
0-2	1	Very insufficient	The ability to retain information for a certain period of time is weak. In a limited time (25-30 seconds) information can be determined, stored and recalled.
3-5	2	Insufficient	Information cannot be fixed, stored or recalled in a short period of time.
6-8	3	Average	Short-term retention of information, long-term retention, retention, and recall of information.
9-11	4	Sufficient	Able to identify, store and recall information in a short period of time.
12	5	Very sufficient	Information can be very well established, stored and recalled in a short period of time.

[Table -2] Results of a comparative study of short-term visual acuity

Material	I Autistic child	A Autistic child	E Normal child	G Normal child
12 pictures, timer	4 pictures were drawn 2 of them were correct	8 pictures were drawn 7 of them were correct	8 pictures were drawn 6 of them were correct	6 pictures were drawn 2 of them were correct

Child Y completed the task of studying image identification, storage, and recall by looking at each picture in the table for 30 seconds and attempting to draw them. Out of 12 pictures drawn, 4 were correct, with 2 matching the research key perfectly. 2. Child A managed to correctly identify 6 out of 12 pictures, indicating a higher accuracy rate compared to child Y. 3. Child E drew 8 pictures, with 6 being optimal and 2 matching

the key but placed in the wrong table. Additionally, 4 tables out of 12 were left without any drawings. 4. Child D drew 6 pictures, with 2 placed correctly in the table and the remaining 4 not in the appropriate table, although they were identified as correct images.

The research findings indicate that normal children tend to prioritize following instructions from their teachers, which can limit their ability to express themselves freely. In contrast, autistic children exhibit a natural inclination to express their opinions from their unique perspective.

2.2. Auditory recognition in the short term (ages 8-10)

The ability to retain information after a brief period of listening is a crucial aspect of cognitive function. Improved listening skills correlate with higher overall cognitive abilities. Listening and recognizing words require focus and creativity. As children grow older, their capacity to identify abstract, unfamiliar, and complex words gradually expands beyond basic vocabulary. It is relatively easy to recall information heard through imagination. Researchers suggest that individuals can remember around 5-7 unrelated words in a short span of time. To assess students' listening, retention, and recall abilities, the "AR Lurney" method was utilized to gather study results. Children can participate in groups or individually. Following instructions, researchers ensure children are prepared to listen attentively, confirm understanding, and repeat if necessary. After capturing their attention, researchers slowly, clearly, and evenly present a set of 10 words, which children then write down in any order. The focus is on recalling the words rather than perfect writing. Once the children have completed the task, the research findings are compiled and analyzed.

[Table -3] Features and specifications of each level

Score	Scale	Level	Feature
0-2	1	Very insufficient	Information cannot be determined, stored or recalled after hearing it.
3-5	2	Insufficient	After listening to the information, most of it cannot be fixed, stored and recalled.
6-8	3	Average	After listening to the information, he can remember a few words, but sometimes he forgets them.
9-11	4	Sufficient	He can retain and recall information after hearing it, but he forgets a small part of the information.
10	5	Very sufficient	After listening to the information, it can be well established, stored and recalled.

[Table -4] Results of a comparative study of short-term listening comprehension

Materials	I Autistic child	A Autistic child	E Normal child	G Normal child
10 words /smoke, sleep, bubble, cashmere, noise, bush, clock, ice, night, tree/	3 words written correctly <i>Утаа, бөбөлөн, нолоог</i> (said the correct word in his mouth and wrote it wrong)	10 pictures were drawn 4 of them were accurately /Poor writing skills/	5 words written correctly <i>smoke, sleep, bubble, night, tree</i>	4 words written correctly <i>smoke, sleep, night, tree</i>

Child I successfully identified the word "bubble" out of a total of 10 words when tested for the ability to recognize, store, and recall information after hearing it. In the case of child A, he drew 10 pictures based on the 10 words he heard. However, he accurately depicted only 4 words, namely ice, balloons, clocks, and trees, while the remaining pictures were influenced by the instructions given by the examiner and did not correspond to the assigned words. This indicates weaknesses in both his written and verbal skills, as well as limited auditory memory capacity.

Child E managed to write a total of 5 words correctly, demonstrating accurate and legible handwriting. On the other hand, child G also wrote 4 words correctly and legibly. However, it was noted that he struggled with identifying, retaining, and recalling most of the information after listening to it. This distinguishes him from autistic children in terms of intellectual abilities, as their characteristics differ.

3. Conclusion

Educational professionals across all levels of institutions recognize the significance of enhancing their understanding of autism and ensuring equitable education for children with autism, tailored to their unique characteristics and intellectual capacities. To achieve this, they actively engage in training programs that foster teachers' comprehension, attitudes, and instructional approaches, thereby ensuring the effective accommodation of autistic children's learning needs and their ongoing education. Additionally, courses are systematically organized to facilitate collaboration between parents and teachers of autistic children, promoting a cohesive support system. Regular autism awareness campaigns are conducted, supplemented by training sessions delivered by both local and international experts in psychology and teaching, which aim to enhance the knowledge of autism among students and foster their professional growth. These initiatives emphasize the potential for normal intellectual development in individuals with autism, fostering a comprehensive understanding among educators. Recognizing that drawing serves as a primary mode of expression for many children on the autism spectrum, educators strive to identify and nurture their unique skills, designing tailored programs to maximize their intellectual potential. Ultimately, all educational professionals should acknowledge the immense opportunity to cultivate the exceptional strengths of these children, while embracing their differences and providing the necessary support for their educational journey.

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SSHS-25

Conducting an empirical investigation into the utilization patterns and effectiveness of health applications

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Abstract- In the contemporary era, there has been a substantial global surge in the demand for and utilization of smart technology-based devices. In the Mongolian context, post-2020, a rapid proliferation of smart health monitoring devices has transpired, resulting in an escalated adoption rate. Notably, within the health sector, citizens predominantly engage with electronic doctor services and online scheduling platforms for medical care appointments.

A research lacuna exists in the examination of health application usage among Mongolian citizens. Consequently, the primary objective of this study is to address this gap by systematically investigating and elucidating the current landscape of health application usage within the Mongolian populace.

The survey questionnaire was formulated through a Google Form, and data were collected via a singular administration of the survey. A predominant 78.9% of the total participants reported active utilization of health applications. Notably, the majority of respondents access application information through mobile phones and smartwatches.

Keywords: Mongolians, smartwatch, mobile phone.

SSBA-26

The Impact of Entrepreneur's Age on Serial Entrepreneurship Speed: The Moderating Effect of Positive gains after failure

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초록: 본 연구는 창업가의 연령, 실패 후 긍정적 이득이 재창업 속도에 미치는 영향을 분석하였다. 일반적으로는 고령의 창업가들이 신속한 재창업을 추진하는 현상이 관찰되고 있으나, 이에 대한 명확한 설명은 아직 미흡한 상태이다. 본 연구에서는 창업가의 연령, 실패 후 긍정적 이득을 주요 변수로 설정하고, 선행연구를 바탕으로 이들의 재창업 속도에 미치는 영향을 실증적으로 분석하였다. 연령만으로는 재창업 속도가 빠르다는 결과는 나타나지 않았다. 반면 연령이 증가함에 따라 실패 후 긍정적 이득이 높은 창업가의 재창업 속도가 빨라지는 경향을 확인하였다. 이는 창업가의 연령과 실패 후 긍정적 이득이 상호작용하여 창업 성공에 긍정적인 영향을 미치는 것으로 해석되며, 이를 반영한 창업가 교육 프로그램의 필요하다는 시사점을 제시한다.

주제어: 재창업, 창업가의 연령, 재창업 속도, 실패 후 긍정적 이득

1. 서론

1.1 연구 배경 및 필요성

국내 재창업 생태계를 활성화하고 기업 생존율을 높이기 위해 장기적인 지원책이 필요한 것으로 지적되었습니다. 2023년 10월 26일에 발표된 중소벤처기업연구원의 보고서에 따르면, 국내 창업 기업 중 3곳 중 2곳이 창업 후 5년 내에 폐업하는 것으로 나타났습니다. 이는 OECD 회원국 평균인 54.6%보다 11.6%포인트 높은 수치입니다. 이에 따라 국내 창업 기업의 생존율 향상을 위해 재창업 지원 체계를 강화해야 한다는 보고서의 강조가 있었습니다.

창업은 McGrath(1999)에 의하면 불확실성과 위험이 따르는 과정이며, 이는 창업가들에게 불안과 불확실성을 초래합니다. 그러나 창업 실패를 학습 경험으로 삼을 수 있다고 주장했습니다. 실패를 통해 창업가는 자신의 실수를 파악하고 미래의 성공을 위해 준비할 수 있습니다. 이러한 과정을 통해 창업 생태계는 실패를 허용하고 학습을 촉진해야 합니다.

재창업은 새로운 도전과 기회를 모색하는 것을 의미하며, 연구에 따르면 재창업가는 초기 사업을 시작하는 연령이 다른 창업가보다 낮다는 결과가 있습니다. 그러나 재창업가의 특성과 행동 간의 관계에 대한 연구는 미흡하며, 이는 새로운 연구 기회를 제시합니다.

본 연구의 주요 목적은 구체적으로 다음과 같다. 첫째, 창업가의 연령, 재창업 속도, 실패 후 긍정적 이득과 관련된 선행연구를 철저히 검토하고, 이를 토대로 본 연구의 연구모형과 가설을 설정할 것

이다. 둘째, 창업가의 연령이 재창업 속도에 미치는 영향을 검증하고, 실패 후 긍정적 이득이 창업가의 연령과 재창업 속도 간의 관계에 미치는 영향의 차이를 검증할 것이다. 셋째, 수행된 분석 결과를 기반으로 창업가 및 창업관련 실무자들에게 유용한 시사점을 제공할 것이다.

2. 이론적 배경

2.1. 재창업의 개념

Ucbasaran et. al.,(2009)에 따르면 창업 의지와 결정적인 역할을 하며, 종종 시간과 자금, 노력의 상당한 투자가 필요하다. 또한, 윤남수(2013)는 재창업의 중요성을 강조하며, 이 과정에서 강력한 창업 의지가 필수적이라고 설명한다. 이는 재창업이 단순히 한 번의 실패 후에 포기하는 것이 아니라, 실패를 통해 배운 교훈을 토대로 새로운 도전에 나섬으로써 성공을 이루는 과정임을 나타낸다. 재창업은 또한 포트폴리오 창업과 구별된다. 재창업의 개념은 Westhead and Wright(1998)에 따르면 일부 창업가들이 반복적으로 사업을 창업하고 성공을 이끌어간다는 사실에 근거하고 있다. Baron and Ensley(2006)는 이러한 특징이 재창업가들이 자신의 기술과 전략을 지속적으로 개선하고, 후속 사업에서 더 나은 성과를 도출하는 기회로 작용한다고 설명하고 있다.

2.2. 창업가의 연령

창업분야의 연구에서 연령은 창업 의도, 동기, 창업 행동과 관련이 있다고 한다(Obschonka et. al, 2017). 특히, 재창업가의 연령은 재창업 행동에 대한 지각된 바람직한 태도와 관련이 있으며, 연령이 증가함에 따라 창업가의 위험 회피 성향도 증가한다는 연구 결과가 있다(Miller, 1984). 연령에 따라 우선순위가 변화하므로, 기업가의 활동을 통해 경제적 또는 비경제적 사회적 가치를 창출하고자 하는 의지는 생애 단계에 따라 다를 것이다.

일반적으로 창업 실패 후 임금 근로자로 전환하는 경향이 청년층에서 더 활발하게 나타나는 경향이 있고 중장년 및 노년층은 연령이 많아질수록 임금 근로자로의 취업이 어려워진다. 어린 연령의 창업 실패자들은 아직 취업 기회가 열려 있어 재창업보다는 임금 근로자로의 취업을 선택하는 경향이 크다(김기승, 2011). 따라서 어린 연령층에서는 창업 실패자의 재창업 경향이 상대적으로 낮게 나타날 것이다. 중년층에서는 창업 실패 경험이 재창업으로 이어지는 경향이 높을 것이다. 중년층은 큰 직업적 변화에 제약이 있을 수 있지만, 중년에 이어지는 커리어의 중간 단계에서 여전히 새로운 도전에 적극적일 가능성이 크다. 경력과 전문성이 높아지며 누적된 경험이 새로운 도전의 기반이 될 수 있기 때문이다. 실패 경험은 시행착오를 통해 적절한 해결 방법을 찾도록 도와주는 중요한 경험으로 알려져 있다(Bergmann et. al, 2007). 중년층은 실패를 통해 배움을 적극적으로 얻을 수 있으며, 이를 재창업에 적용하여 성공하고자 한다. 따라서 중년층에서는 실패 후 재창업이 높게 나타날 것이다. 장영미(2018)의 연구에 의하면, 생계형 창업에서의 실패가 고령 창업가의 재창업에 부정적인 영향을 미칠 가능성이 크다고 하였다. 고령층의 생계형 창업은 경쟁이 높고 사전에 창업 준비가 부족해 실패 확률이 크며, 실패 후 재창업에 필요한 자금 확보가 어려울 수 있다. 또한, 높은 연령으로 인해 새로운 것을 학습하고자 하는 의지가 감소하며, 재창업은 더 큰 위험을 감수해야 하는 도전으로 인식된다. 이종선(2020)의 연구에서도 고령의 실패 창업인은 재창업 경향이 낮을 것이라고 하여 연령과 재창업간의 연구 결과는 일관성이 없다고 볼 수 있다.

2.3. 재창업 속도

재창업 속도(Serial Entrepreneurship Speed)는 창업가가 이전에 창업한 기업을 떠나거나 실패한 후에

다시 새로운 기업을 창업하거나 새로운 사업을 시작하는 과정에서 걸리는 시간을 나타낸다. 이러한 과정은 종종 이전의 경험을 바탕으로 새로운 기회를 발견하고 창업가가 새로운 도전에 나서는 것을 포함할 수 있다. 재창업 속도는 단순히 이전의 실패만을 다루는 것이 아니라, 창업가가 이전 기업을 엑시트(exit)(팔거나 매각)하거나 다른 방식으로 종료한 후에도 해당한다. 이는 창업가가 새로운 기회를 발견하거나 다른 비즈니스 모델을 시도하며, 이러한 과정에서 소요되는 시간을 포함한다. 이전 연구에서는 재창업 속도가 창업 의도와 관련이 있으며, 창업 의도가 높을수록 재창업 속도가 빨라진다는 것이 확인되었다(Kautonen et al., 2015). 이는 창업가가 이전의 경험을 토대로 빠르게 새로운 기회를 추구하고자 하는 의지를 반영하는 것으로 해석된다.

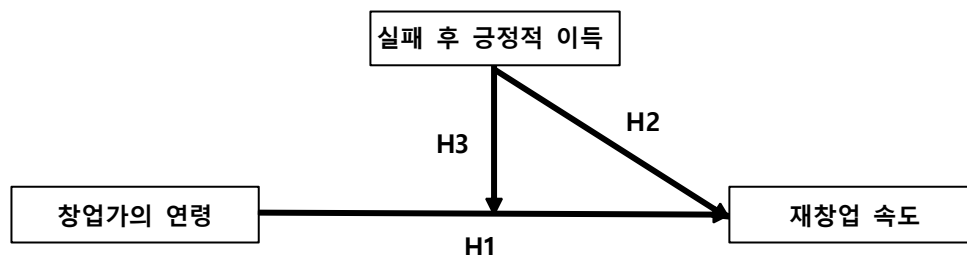
2.4. 실패 후 긍정적 이득

창업 실패는 여러 가지 방법으로 해석될 수 있으며, Shepherd and Haynie (2011) 등의 연구자들에 의해 다양한 관점에서 분석되었다. Ucbasaran et al., (2013)은 창업 실패를 기업가가 설정한 최소한의 경제적 생존 가능성을 충족시키지 못해 사업을 중단하는 것으로 정의하였다. Amankwah-Amoah et al., (2016)은 창업 실패 후의 네 가지 고유한 단계를 제안하였다. 이는 창업가가 실패를 경험한 후 통과하는 과정을 설명하고 있으며, 다음과 같다: 1. 슬픔과 절망의 단계: 창업가가 실패로 인한 슬픔과 절망에 직면하는 단계이다. 이 단계에서는 실패에 대한 충격과 상처를 받고, 자아에 대한 의심과 자신감 상실이 높을 수 있다. 2. 전환 단계: 이 단계에서는 창업가가 실패를 받아들이고 이를 극복하고 새로운 시작으로의 전환을 시도하는 단계이다. 이는 과거의 경험을 반성하고 배우는 과정을 포함한다. 3. 형성 단계: 형성 단계에서는 창업가가 새로운 기회를 탐색하고 새로운 사업 모델을 발전시키는 단계이다. 이는 창업가가 새로운 비전을 세우고 실현하기 위한 준비를 하는 과정을 포함한다. 4. 유산 단계: 유산 단계는 창업가가 새로운 사업을 성공적으로 출발시키고 안정화시키는 단계이다. 이는 새로운 사업의 성공을 위해 노력하고 성과를 달성하는 과정을 포함한다. 이러한 네 가지 단계는 창업가가 실패를 극복하고 새로운 기회를 찾아나서는 과정을 설명하며, 창업가의 성공적인 재창업을 위한 중요한 지침을 제공한다. 이들은 창업 실패 경험이 기업가의 후속 창업 행동에 영향을 미칠 수 있다고 결론지었다.

3. 연구모형 및 가설설정

3.1. 연구모형

본 연구에서는 선행연구를 바탕으로 독립변수로 창업가의 연령을 설정하였고, 조절변수로 실패 후 긍정적 이득을 설정하였다. 종속변수로 재창업 속도를 선정하고 가설검정을 위하여 회귀분석과 조절된 조절 효과분석을 시행하였다. 본 연구의 연구모형은 다음과 같다.



3.2. 가설설정

본 연구에서는 연구모형을 바탕으로 검증해야 할 연구가설을 다음의 형태로 설정하고자 한다. 첫째, 창업가의 연령과 재창업 속도 간의 관계, 둘째, 실패 후 긍정적 이득과 재창업 속도 간의 관계, 셋째, 창업가의 연령과 재창업 속도 간의 관계에 실패 후 긍정적 이득 조절효과로 총 3가지 가설로 설정하였다. 본 연구에서 가설을 설정하게 된 배경과 구체적인 가설 설정은 다음과 같다.

3.2.1 창업가의 연령과 재창업 속도

본 연구는 재창업가들의 경험과 연령이 재창업 과정에 미치는 영향을 분석하는 것을 목표로 두었다. 연령이 증가할수록 커리어에 큰 변화를 주지 않는 경향이 있다(Parrado et. al., 2007). 어린 연령층은 관련 분야에서의 인적 네트워크 형성과 지식 축적이 부족하여 새로운 커리어로의 전환 비용이 적다고 한다 (Parrado et. al., 2007). 이로 인해 재창업을 선택하지 않더라도 비용 부담이 적으며, 창업 실패 후에도 취업을 통해 새로운 커리어를 시작할 수 있는 유리한 상황이라고 한다. 반면에 중장년층 및 노년층은 나이가 많아질수록 임금 근로자로서의 취업이 어려워진다는 연구 결과가 있다. 어린 연령층의 경우 사회생활 경험이 부족한 경우가 많아 임금 근로자로서의 선택을 통해 사회 경험을 쌓고, 그 후 창업에 대해 더 나은 준비를 하고자 할 것으로 보인다. 따라서 어린 연령층에서는 실패한 창업 후 재창업 경향이 낮을 것으로 보인다.

가설 1: 창업가의 연령이 증가함에 따라 재창업 속도가 느려질 것이다.

3.2.2. 실패 후 긍정적 이득과 재창업 속도

Shepherd(2003)의 관점에 따르면, 실패는 기업가들이 교훈을 얻기 위한 중요한 기회로 간주된다. Cope(2005)는 실패로부터의 학습이 추상적이고 일반화된 형태를 띠며, 이를 통해 기업가들은 새로운 비즈니스 상황에서의 도전에 대응할 수 있게 된다는 점을 강조하고 있다. Sarasvathy and Menon(2002)은 실패를 통해 얻은 경험이 "무엇이 효과가 있고 무엇이 효과가 없는지"를 배우는 데 필수적인 도구로 작용한다고 주장하고 있다. Politis(2005)는 실패를 새로운 기회를 찾고 비즈니스 프로세스를 향상시키기 위한 학습의 "디딤돌"로 설명하고 있다. 기업가들은 실패를 통해 얻은 경험을 통해 추상적이고 일반화된 학습을 획득하며, 이는 인지적 조기 경고 시스템을 개발하고, 이후의 벤처에서 예상 시정 조치를 취할 수 있도록 도움을 줄 수 있다(Politis, 2008). 이러한 관점들은 결국 기업가들이 실패를 통해 지속적인 학습과 성장을 이끌어내는 과정에서의 중요성을 강조하고 있다. 이전의 실패 후 긍정적 이득은 새로운 기회를 빠르게 파악하고, 그에 따른 조치를 취하는 데 도움을 줄 수 있다. 실패 후 긍정적 이득을 효과적으로 적용하면, 재창업 속도에서 발생하는 문제에 대한 대응 속도가 빠를 수 있다. 이에 따라, 실패 후 긍정적 이득이 높은 경우 창업가의 재창업 속도가 더 빠를 것으로 예상된다.

가설 2: 실패 후 긍정적 이득은 재창업속도에 영향을 미칠 것이다. 실패 후 긍정적 이득이 높아질수록 재창업 속도가 빨라질 것이다.

가설 3: 실패 후 긍정적 이득은 창업가의 연령과 재창업속도 간에 관계를 강화시킬 것이다. 같은 연령일 때 실패 후 긍정적 이득이 높은 사람은 낮은 사람보다 재창업속도가 빠를 것이다.

3.3. 변수측정

실증분석에 사용된 변수들의 조작적 정의는 <표 1>과 같다.

변수 유형	측정변수	조작적 정의	출처

종속변수	재창업 속도	이미 새로운 창업을 시작한 경우 이전의 실패 후 새로운 벤처의 출시를 시작하는 데 얼마나 걸렸습니까? (1=2 년이상, 2=1-2 년, 3=6 개월-1 년, 4=6 개월 이하)	Kautonen et al. 2015
독립변수	창업가의 연령	연령대 (1=18 이하, 2=18-29, 3=30-44, 4=45-60, 5=60 이상)	Baù et al., 2017
조절변수	실패 후 긍정적 이득	창업의 실패는 나에게 다른 방법으로는 배울 수 없는 귀중한 교훈을 주었다. 창업 실패의 경험은 회복력과 인내력을 키우는 데 도움이 되었다. 나는 재무 관리, 시장 조사, 리더십과 같은 분야에 대한 통찰력을 얻었다.	Cope 2005
통제변수	경제적 가족지원	나는 가족으로부터 경제적 지원을 받았다.	Rau 2014
	심리적 가족지원	나의 가족은 나의 사업을 성공시키기 위해 필요한 도덕적 지원을 해준다. 나는 가족들로부터 필요한 정서적인 도움과 지원을 받았다.	
	자기효능 감	새로운 비즈니스 기회를 성공적으로 파악하는데 얼마나 자신이 있습니까? 신제품을 성공적으로 만들어 낼 자신이 얼마나 있습니까? 창의적으로 생각하는 것에 얼마나 자신이 있습니까? 아이디어나 새로운 개발을 성공적으로 상용화할 자신이 얼마나 있습니까?	Zhao et al.(2005)
	실패 원인	나는 창업 실패 후 나의 성격이 창업에 동기 부족이라고 생각하였다. 나는 창업 실패 후 나의 성격이 창업에 나는 창업 실패 후 나의 성격이 창업에 동기 부족이라고 생각하였다. 나는 창업 실패 후 나의 성격이 창업에 부적절한 성격이라고 생각하였다.	Piadehbasme nj (2016) Higgins E.T (2001)
	운영 기간	현재 창업을 얼마나 공식적으로 운영했습니까? (1=1 년 미만, 2=1-2 년, 3=2-3 년, 4=3 년이상)	

4. 연구 결과 분석

4.1 자료수집 및 연구표본

구분		빈도	백분율	구분		빈도	백분율
성 별	남자	68	62.4%	실패경 험	있음	109	100%
	여자	41	37.6%		없음	0	0.0%
창 업 가 의 연 령	18세-29세	24	22.0%	현재 창업 운영기 간	1년 미만	13	11.0%
	30세-44세	38	34.9%		1년~2년	34	31.2%
	45세-60세	39	35.8%		2년~3년	32	29.4%
	60세 이상	8	7.3%		3년 이상	31	28.4%
창	2 번째	61	56.0%	학력	고등학교 또는 중등학교	11	9.2%
					무역/기술/직업 훈련	7	6.4%

업 경 험 정 도					일부 대학 학점 또는 학위 없음	14	12.8%
	3 번째	31	28.4%		학사 학위	37	33.9%
	4 번째	11	10.1%		석사학위	31	28.4%
	5 번 이상	6	5.5%		박사학위	10	9.2%

4.2 변수의 측정 결과

4.2.1. 주요변수 기술통계

변수		N	Mean	S.D.	왜도	첨도
종속변수	재창업 속도	109	2.513	1.005	-.011	-1.059
독립변수	창업가의 연령	109	3.284	.893	.039	-.855
조절변수	실패 후 긍정적 이득	109	5.473	1.386	-1.067	.917
통제변수	경제적 가족지원	109	3.858	2.405	.040	-1.588
	심리적 가족지원	109	5.663	1.281	-.788	-.103
	자기효능감	109	5.420	1.294	-.569	-.586
	실패 원인	109	4.823	1.518	-.155	-.537
	운영 기간	109	2.752	.992	-.177	-1.072

4.2.2. 신뢰도 분석 및 탐색적 요인분석

	1	공통성 값
실패 후 긍정적 이득 1	.900	.810
실패 후 긍정적 이득 2	.847	.718
실패 후 긍정적 이득 3	.895	.802
전체	2.329	
%분산	77.629	
누적%	77.629	
KMO(Kaiser-Meyer-Olkin) 표본 적합도 .720		
Bartlett 구형성 검정 $\chi^2 = 147.251$ (df = 3, $p < .000$)		

출 방법: 주축 요인 추출

회전 방법: 카이저 정규화를 사용한 베리맥스

4.2.3. 상관관계 분석

	변수	상관계수							
		1	2	3	4	5	6	7	8
종속변수	재창업 속도	1							
독립변수	창업가의 연령	.073	1						
조절변수	실패 후 긍정적 이득	-.057	.239*	1					
통제변수	경제적 가족지원	-.226*	-.030	.132	1				
	심리적 가족지원	-.177	.248**	.554**	.099	1			
	자기효능감	.005	.129	.594**	.254**	.512**	1		
	실패 원인	-.257*	.045	.323**	.613**	.443**	.446**	1	
	운영 기간	-.196*	.132	.259**	-.042	-.012	.116	-.115	1

* $p < .05$, ** $p < .01$

4.2.4. 회귀분석

		모델 1		모델 2		모델 3	
		β	t	β	t	β	t
상수			7.648		5.931		4.807
통제변수	경제적 가족지원	-.147	-1.261	-.143	-1.233	-.149	-1.302
	심리적 가족지원	-.209	-1.873	-.275	-2.270	-.260	-2.173
	자기효능감	.284	2.572	.252	2.108	.223	1.879
	실패 원인	-.231	-1.742	-.227	-1.718	-.240	-1.842
	운영 기간	-.264	-2.894	-.300	-3.145	-.323	-3.409
직접효과	창업가의 연령(A)			.134	1.440	.335	2.506
	실패 후 긍정적 이득(B)			.084	.676	.761	2.175
조절효과	A × B					-.755	-2.066
F		4.617		3.717		3.891	
R ²		.183		.205		.237	
수정된 R ²		.143		.150		.176	
R ² 의 변화량		.183		.022		.033	

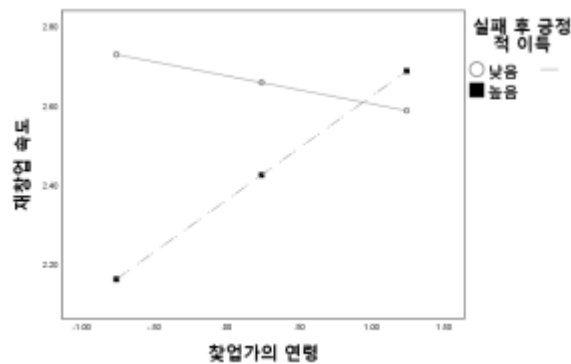
종속변수: 재창업 속도

4.2.5. PROCESS macro

		B	SE	t	p	LLCI	ULCI
상수		4.563	.608	7.501	.000	3.356	5.770
직접효과	창업가의 연령(A)	.377	.150	2.506	.013	.078	.675
	실패 후 긍정적 이득(B)	.183	.255	.719	.473	-.323	.690
조절효과	A × B	-.427	.207	-2.065	.041	-.838	-.016
통제변수	경제적 가족지원	-.062	.047	-1.302	.195	-.157	.032
	심리적 가족지원	-.203	.093	-2.173	.032	-.389	-.017
	자기효능감	.173	.092	1.878	.063	-.009	.355
	실패 원인	-.159	.086	-1.842	.068	-.330	.012
	운영 기간	-.327	.095	-3.409	.000	-.517	-.136

실패 후 긍정적 이득	Effect	SE	t	p	LLCI	ULCI
낮음	-.050	.142	-.355	.722	-.332	.231
높음	.377	.150	2.506	.013	.078	.675

(그림 2)을 보면, 실패 후 긍정적 이득이 높은 경우 재창업속도가 유의하게 빨라지는 것으로 나타났다. 반면 실패 후 긍정적 이득이 낮은 경우는 재창업속도가 달라지지 않는 것을 확인할 수 있다.



(그림 2) 실패 후 긍정적 이득의 이중조절효과분석

제 5 장 결론 및 시사점

5.1. 연구 결과

본 연구는 특히 기업가의 과정에서 창업가의 연령, 재창업 속도, 실패 후 긍정적 이득과 같은 셋 가지 요인에 초점을 맞추었다. 본 연구는 재창업가의 정의나 특성에 중점을 두며, 일반적으로 재창업 속도에 영향을 미칠 수 있는 창업가의 연령과 같은 핵심적인 인구통계학적 변수에 초점을 맞추었고

통제변수로 다양한 실패 원인과 가족지원 변수를 통합해서 분석하였다. 따라서 본 연구는 사업 실패를 경험한 재창업가의 행동 특성 뿐만 아니라 실패로부터의 학습과 회복 과정에 대한 심층적인 논의를 제시하였다.

본 연구의 목적은 창업가의 연령은 재창업속도에 미치는 영향, 실패 후 긍정적 이득은 재창업속도에 미치는 영향을 검증하고, 그 관계에서 실패 후 긍정적 이득의 조절효과를 검증하였다. 이를 위하여 창업가들이 사업실패한 후 다시 창업하고 있는 재창업자들 대상으로 자료를 수집하였으며, Hayes Process macro 분석 방법을 사용하여 조절된 조절모형을 검증하였다. 분석 결과를 요약하면 다음과 같다.

첫째, 재창업 속도에 영향을 미치는 변수들의 주 효과를 분석한 결과, 창업가의 연령은 재창업 속도에는 유의한 영향을 미치는 것으로 나타났다. 창업가의 연령이 재창업 과정에서 중요한 요소임을 시사한다. 노령의 창업가가 경험이 풍부하고 이를 통해 더 신중하고 효과적인 의사결정을 내릴 수 있다는 것을 강조한다. 따라서, 창업가의 연령을 고려하여 재창업 전략을 개발하고 실행하는 것이 중요함을 시사한다. 이러한 결과는 재창업에 대한 이해를 높이고, 실제 재창업 과정에서의 의사결정에 도움을 줄 수 있을 것이다.

둘째, 실패 후 긍정적 이득이 재창업 속도에 미치는 영향을 조사하였다. 실패 후 긍정적 이득이 재창업 속도에 유의한 영향을 미친다는 것을 확인하였다. 이는 실패를 통해 얻은 긍정적인 경험이 재창업 과정을 빠르게 진행하도록 도와준다는 것을 시사한다. 따라서, 창업자들이 실패를 긍정적으로 경험하고 이를 학습으로 활용하는 것이 재창업 속도를 높이는 데 중요한 요소임을 강조하고 있다.

셋째, 실패 후 긍정적 이득이 창업가의 연령과 재창업 속도 간의 관계를 강화시킨다는 결론을 도출할 수 있다. 이는 실패 후 긍정적 이득이 더 노령의 창업가들이나 경험이 풍부한 창업가들에게 더 큰 영향을 미쳐서 재창업 속도를 더 높이는 데 도움이 된다는 것을 시사한다. 따라서, 창업가의 연령과 실패 후 긍정적 이득은 재창업 속도에 상호 보완적으로 작용할 수 있다.

5.2 연구의 시사점

본 연구과에 따른 시사점은 다음과 같다. 첫째, 창업가의 연령이 재창업 속도에 미치는 유의한 영향을 확인할 수 있었다. 특히 노령의 창업가는 경험이 풍부하고 이를 통해 더 신중하고 효과적인 의사결정을 내릴 수 있는데, 이는 재창업 과정에서 중요한 요소임을 시사한다. 이러한 결과는 창업가가 재창업을 고려할 때 자신의 연령을 고려하여 전략을 개발하고 실행해야 함을 강조하며, 실제 재창업 과정에서의 의사결정에 도움을 줄 수 있을 것으로 예상된다.

둘째, 실패 후 얻은 긍정적 이득이 재창업 속도에 유의한 영향을 미친다는 사실을 확인하였다. 이는 실패를 긍정적으로 경험하고 이를 학습으로 활용하는 것이 재창업 속도를 높이는 데 중요한 역할을 한다는 것을 시사한다. 따라서 창업자들은 실패를 두려워하지 않고 긍정적으로 받아들여야 하며, 실패를 통해 얻은 경험을 적극적으로 활용하여 재창업 과정을 빠르게 진행할 수 있도록 해야 한다.

셋째, 분석 결과를 통해 실패 후 얻은 긍정적 이득이 창업가의 연령과 재창업 속도 간의 관계를 강화시킨다는 결론을 도출할 수 있다. 특히 실패 후 긍정적 이득이 노령의 창업가나 경험이 풍부한 창업가들에게 더 큰 영향을 미치는 것으로 나타났다. 이는 이들 창업가들이 실패를 긍정적으로 경험하고 그로부터 더 많은 것을 배워 재창업 속도를 높이는 데 도움이 된다는 것을 시사한다. 따라서 창업가의 연령과 실패 후 긍정적 이득은 서로 보완적으로 작용하여 재창업 속도를 증진시킬 수 있음을 나타낸다.

종합적으로 살펴보면, 연령별 창업가의 특성을 고려하여 창업 지원 정책을 개발하고, 특히 고령

창업가들에게는 경험과 자기효능감을 활용한 창업 지원책을 강화하는 방향으로 정책을 개발할 필요가 있다.

5.3. 연구의 한계점

본 연구는 재창업 속도에 영향을 미치는 다양한 요인들을 조사하고 분석하였으나, 이에에는 몇 가지 한계점이 있다. 연구의 한계점은 다음과 같다.

첫째, 본 연구의 샘플 수가 적다는 한계로 인해 연구 결과의 일반화 가능성이 제한되었다. 더 많은 참여자를 대상으로 한 연구가 필요하며, 이를 통해 보다 정확하고 신뢰성 있는 연구 결과를 얻을 수 있을 것이다.

둘째, 이 연구에서는 한정된 데이터셋을 기반으로 분석을 수행하였기 때문에 결과의 일반화 가능성에 제약이 있을 수 있다. 이를 통해 다양한 문화, 산업, 지리적인 영역에서의 재창업 속도에 대한 일반적인 이해를 확장할 수 있을 것으로 예상된다.

마지막으로, 이 연구에서는 통제변수를 사용하여 재창업 속도에 영향을 미치는 다른 요인들을 제어하려고 노력하였으나, 모든 잠재적인 변수들을 완벽하게 제어하기는 어려웠다. 따라서 향후 연구에서는 더 많은 변수들을 고려하고 분석하는 것이 필요할 것으로 보인다.

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SSSED-27

Using rubrics to test students' performance

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Abstract: The purpose of English language courses is to develop students' ability to communicate in English. An important component of communication skills is the ability to speak. Therefore, in order to improve the ability to speak English, there is a need to objectively evaluate the knowledge of students, as well as a condition to prevent objective, fair, and non-subjective evaluation.

In this article, we have specially evaluated the speaking ability of students who are studying Academic English course, and we have developed and tested a model of a rubric evaluation table to evaluate the students' speaking ability using a rubric.

A rubric is a sheet that gives a level definition corresponding to certain criteria and evaluates the student's performance. When developing a rubric table, it is important to consider the common characteristics of examinees. An overview of researchers' perspectives on how rubric assessments can be used to assess students' creativity in a standardized curriculum is presented.

Researchers have classified rubric assessments by purpose and format. For the purpose of evaluation, it is classified based on the type of course and the ability to evaluate. In terms of shape, they are classified as one-dimensional and multi-dimensional, and their advantages and disadvantages are discussed.

In addition, the evaluation of foreign language creative ability with a rubric increases the confidence of teachers and students and clarifies the learning process, and the preparation of a rubric table, the evaluation of the students' English-speaking ability, and the recommendations that will facilitate the correction of the mistakes made by the students after the assessment, and the improvement of their speaking skills will be explained in detail in this article.

Key words: Speaking ability, competence, type of evaluation, evaluation criteria, student's active interest in learning, reality

HSTS-28

Some human resource issues in the tourism industry

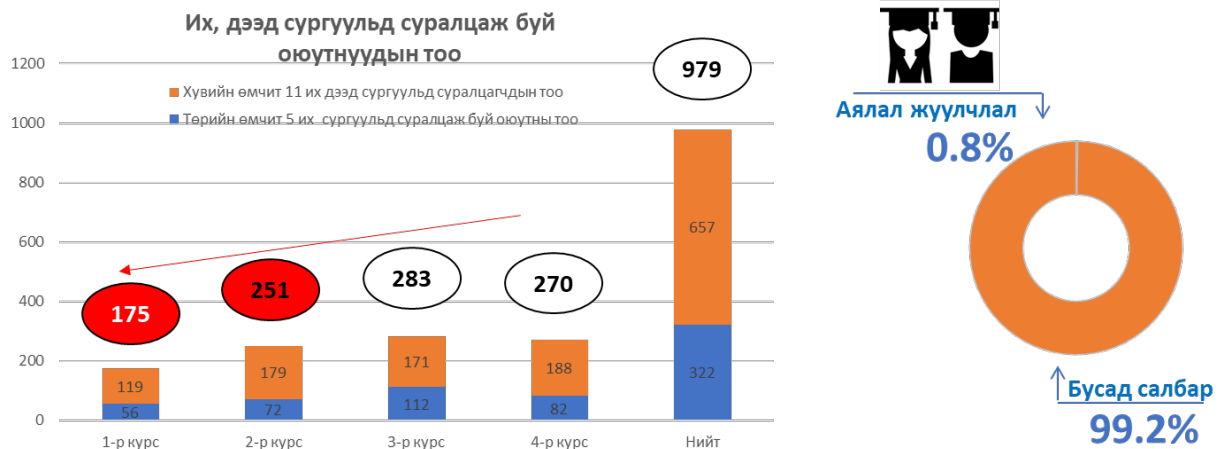
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ABSTRACT- In conducting a human resource component of tourism, I intend to do this research, believing that it can influence tourism professionals' choices by increasing public tourism education. Universal education is considered important in professional choices because it influences career choices, such as family, friends, teachers, and social attitudes. Most importantly, a study of the experienced knowledge of "Travel" by primary school students who are choosing their profession aims to provide them with professional tourism guidelines, identify the current state of tourism production, and promote some ways that will influence their further career choices.

1. Introduction.

The tourism sector is one of the fastest-growing sectors in the world. In 1954, the first tourism organization was established in our country and received 16 tourists. At that time, 25 million tourists traveled around the world. However, as a result of the development of the tourism industry at all stages over the past 70 years, 1.4 billion tourists traveled around the world annually, while our country received 640,000 tourists in 2023, which was the highest figure in history. The tourism law was first approved by the Mongolian government on 05.05.2000 with 6 chapters and 24 articles, but after 23 years, it was renewed on 05.04.2023, and tourism was included in the list of sought-after professions in Mongolia, which shows the revival of the tourism industry. it is an existing case. Also, the Government of MU has announced "Vision-2050" Mongolia's long-term development policy, "New Revival Policy" and the Government of Mongolia has announced 2023-2025 as the "Visit Year of Mongolia" and the goal is to receive 1 million tourists. even though the goal of 1 million tourists, it is not able to meet the demand of the labor market to serve tourists. 78% of tour operators, 68% of tourist camps, 25% of hotels, and 50% of restaurants lost their human resources due to the impact of the Covid-19 pandemic.



Graph 1 The number of students studying tourism in Mongolia

The most important way to better manage the rapid growth of the tourism industry is to develop the right policies, which should start with reforming the tourism model, improving the knowledge of domestic tourists, and creating proper human resource planning. To prepare human resources for tourism, the Ministry of Education, Tourism Education, and Development Association, tour operator companies, hotels, and tourist centers have been conducting a joint human resource program since 2023. In the future, the most important thing to ensure the development of the tourism industry is human resources, and this study aimed to study how the tourism industry prepares its human resources. Family, friends, teachers, and social attitudes influence the interest or choice of profession in tourism. It is assumed that the more knowledgeable people are about tourism, the more influence they will have on their career choices.

Objectives of the research work:

To carry out the research, the following objectives were set. It includes:

1. Study the current state of the tourism industry
2. The current state of tourism human resources
3. To study the understanding of the tourism profession among high school students who are going to choose a profession
4. To put forward some proposals that may affect the choice of tourism profession

Studied:

Due to the lack of basic research on human resources in the IT sector, it may be difficult to ensure the appropriate ratio of supply and demand in the labor market and to systematically prepare and plan human resources.

Innovation:

Although the MU government has announced 2023-2025 as the year of visiting Mongolia (MUZGT, 2022 No. 264), one of the main problems facing the development of the sector is expected to be the problem of human resources. Therefore, it is innovative in that it studies how the human resources of the industry are prepared.

Research methodology: To carry out the research work, the following research methods were used and summarized in the SPSS program.

1. Interview method
2. Method of observation
3. Interview method

In the year 2000, a large number of specialists were trained in the field of tourism, and about 2,000 specialists graduated each year, this is because at that time, there were many educational programs about the field, and tourism information was disseminated to the public. Therefore, for me, to develop the tourism sector, it is most important that we first provide our citizens with industry information protect our tourism resources, and educate them about the concepts of the tourism industry. In this way, the awareness of tourism will reduce the shortage of human resources, the negative effects of waste on nature, and unprofessional decision-making will be reduced, and people's knowledge about tourism will increase.

More than 50,000 people work in 349 tourist resorts, 613 travel companies, and 468 hotels in our country, and these organizations provide services to domestic and foreign tourists. It can be seen from the fact that the number of classes in one course of a school studying in this field is very low. A total of 979 students are studying in the field of tourism, which is 0.2 percent of all students studying in Mongolia.

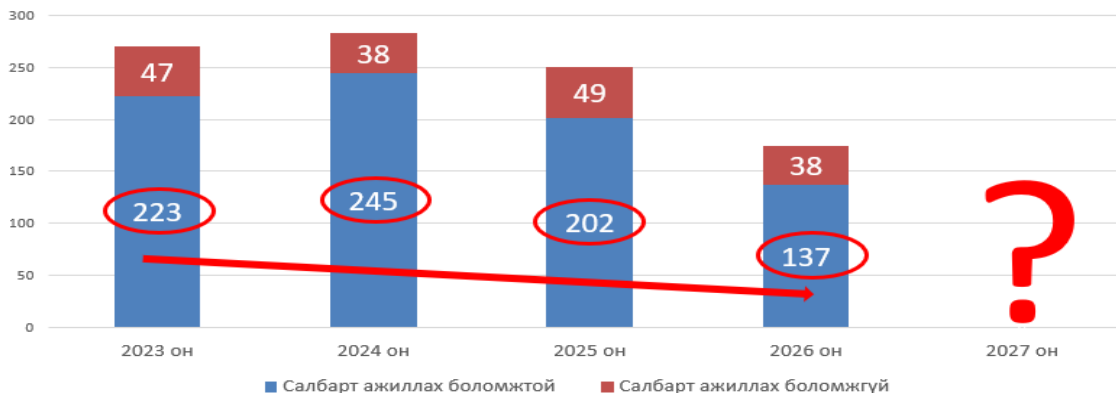
Forecast of the supply of highly educated human resources available in the tourism and hospitality industry labor market 2023-2026.



Судалгааны үр дүн:

4. АЖ, ЗҮ хөдөлмөрийн зах зээлийн нийлүүлэлтийн таамаг

Аялал жуулчлал, зочлох үйлчилгээний салбарын хөдөлмөрийн зах зээлд
2023-2026 онуудад нийлүүлэх боломжтой дээд боловсролтой хүний
нөөцийн нийлүүлэлтийг таамаглал



Graph 2 Prediction of the supply of highly educated human resources available in the tourism and hospitality industry labor market in 2023-2026

To prepare human resources to work in the tourism industry, the concept of tourism education is very important. aimed to identify the current situation and put forward some ways that can be implemented in the future. 100 students of 16-18 years of age in 5 secondary schools were included in the research. The research was conducted using an open questionnaire and summarized in the SPSS program.

Which school do you study at?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	17	17.0	17.0	17.0
	3	33	33.0	33.0	50.0
	4	19	19.0	19.0	69.0
	53	21	21.0	21.0	90.0
	16	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

Question 2 of the survey: Have you been on a trip before? 70% of the respondents answered yes and 30% said no. It can be seen that the majority of students are participating in the tourism industry. Have you been on a tour before?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	тийм	70	70.0	70.0	70.0
	үгүй	30	30.0	30.0	100.0
	Total	100	100.0	100.0	

Did you know that tourism is one of Mongolia's leading industries? 88% of the participants answered that they did not know and 12% said that they did, indicating that the students lack knowledge about the leading branches of Mongolia.

The tourism sector is one of the leading sectors of Mongolia do you know

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Мэднэ	12	12.0	12.0	12.0
	мэдэхгүй	88	88.0	88.0	100.0
	Total	100	100.0	100.0	

Question 4 of the survey: Do you have a course on career choice education? 77% of the respondents answered yes and 23% answered no. These are conducted in most high schools.

Do you have a career education course?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	тийм	77	77.0	77.0	77.0
	үгүй	23	23.0	23.0	100.0
	Total	100	100.0	100.0	

Question 5 of the survey: What do you think the profession of tourism is? 21% of the students answered that they would like to go for a walk, 11% would bring people from abroad, 54% would not know, 5% would be an intermediary, and 9% would be others.

What do you think the profession of tourism is?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Зугаалах	21	21.0	21.0	21.0
	Гадаад орны хүмүүсийг авч ирэх	11	11.0	11.0	32.0
	Мэдэхгүй	54	54.0	54.0	86.0
	Бусад	9	9.0	9.0	95.0
	Зуучлагч	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

Question 6 of the survey: Have you ever thought about choosing a career in tourism? 91% of the respondents answered no, 6% maybe, and 3% yes. According to the responses, 3 out of 100 students, or 3%, have an understanding of the tourism profession, which is believed to be the main reason for the small but continuous number of students in this field to date.

Ever thought about choosing a career in tourism?

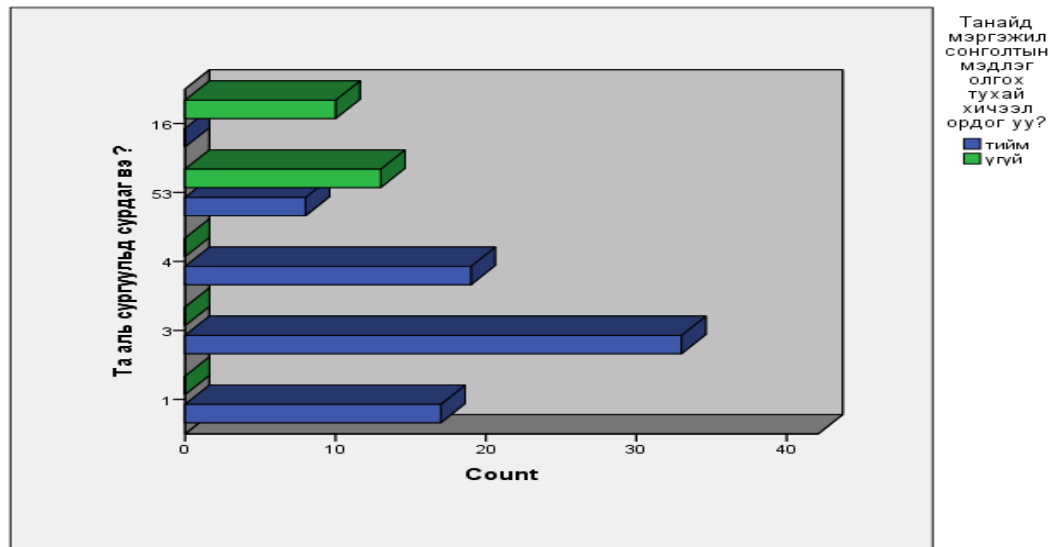
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Тийм	3	3.0	3.0	3.0
	магадгүй	6	6.0	6.0	9.0
	үгүй	91	91.0	91.0	100.0
	Total	100	100.0	100.0	

Question 7 of the survey: Has the tourism profession been discussed in your class? 8% of respondents answered yes and 92% answered no, which shows that most of the students do not know about the tourism industry, and there is a lack of promotion of the tourism profession in the school environment.

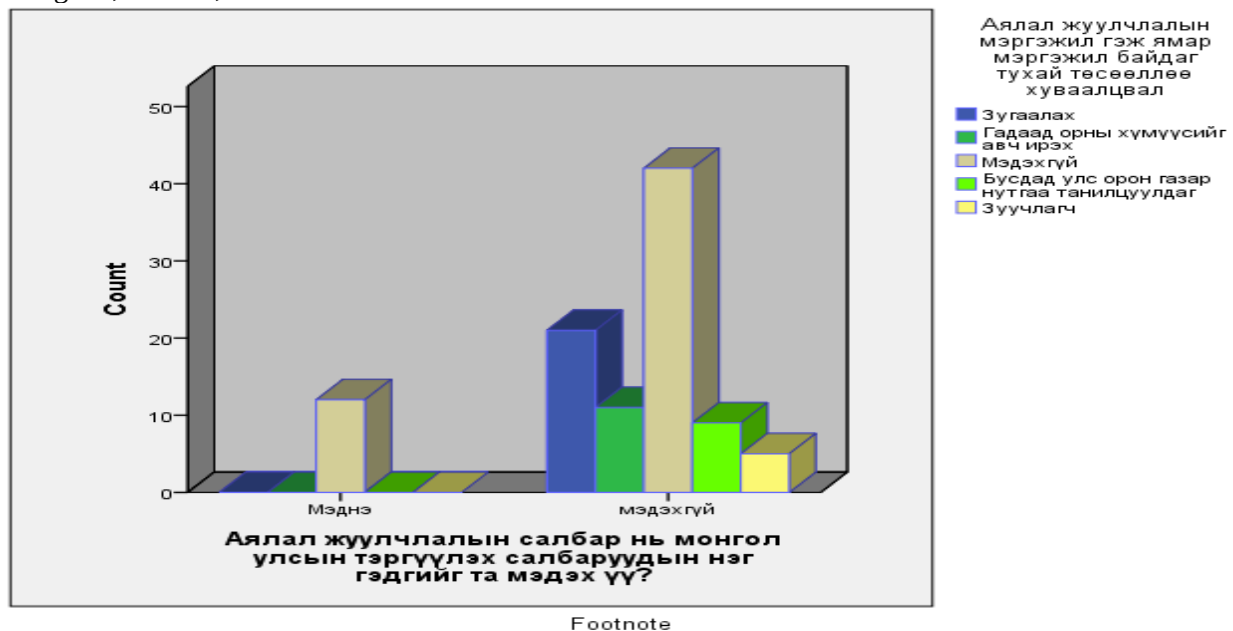
Has tourism been discussed in your class?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	тийм	8	8.0	8.0	8.0
	үгүй	92	92.0	92.0	100.0
	Total	100	100.0	100.0	

When comparing the 1st and 4th questions of the study, it is observed that the high school classes of 2 of the 5 selected schools give little information about the choice of profession. However, schools 1, 3, and 4 have been conducting professional orientation training for high school students, and it can be seen that in the future, there is a demand to include the subject of career choice in every school.



In the comparison of research questions 3 and 5, the students of the 5 selected schools put forward 16 types of proposals, of which the most common ones were Comparing the answers of 5, students do not know that tourism is a leading industry, and they think of tourism as tourism, bringing foreigners to Mongolia, brokers, etc.



Footnote

According to the above research, it is necessary to include detailed information about the leading sectors in vocational orientation training in general education schools, as well as to organize professional awareness events by the ministry, agency, and tourism organizations. Due to the impact of the Covid-19 epidemic, 16.6 thousand people in the tourism and hospitality industry lost their jobs and lost experienced human resources, while the supply of newly trained human resources in this sector has also decreased year by year, the number of students has decreased by 87% compared to 2007 the number of students is not increasing. As of 2022, 979 students are studying in 23 branches of 17 universities and colleges, of which

3.9 percent are foreign students. More than 50% of all students are from Ulaanbaatar city, the largest number of students are from Bayan-Olgii province, while the fewest students are from Zavkhan and Bayankhongor provinces.

Advancing ideas There is a need to train human resources in the tourism industry through professional orientation, and the following proposals are put forward.

1. Prepare a series of programs about the professional characteristics of tourism and broadcast them on social media.
2. Ecology and nature conservation should be included in every university student
3. Joint tourism exhibitions with tourism organizations should be organized locally.
4. Organizing a joint training course to provide professional knowledge to parents of high school students
5. Organize a series of contests on the topic of who knows the tourism profession better among students studying in universities and secondary schools in non-tourism professions
6. Tourism organizations should provide training to local people about the specifics and operations of their activities
7. To organize training and research on the knowledge of the tourism industry among teachers of secondary schools
8. Research to find out the reasons why tourism is not chosen as a profession
9. To inform about activities organized in the field of tourism

Conclusion

One of the most important aspects of human resource formation in the tourism industry is career choice, and it is important to study the influence of family, friends, and siblings on career choice. Judging from the responses of the students who participated in the above survey, it is believed that the lack of professional knowledge and weak understanding of tourism activities of high school students affects their choice of profession the most. To create tourism human resources by providing universal tourism education, prepare a series of programs on the characteristics of tourism professions and broadcast them on social media, step-by-step evaluation of studies to discover the reasons why tourism professions are not chosen, and joint tourism exhibitions with tourism organizations. It is believed that the organization of activities such as those organized in the local area will affect the career choice of students studying tourism. For our country, which is highly dependent on the mining industry, it is of great importance to create a multi-pillar economic structure by developing tourism, diversifying the economy, increasing foreign currency inflows, and improving the balance of payments. It is right to support the human resource policy of the industry by increasing tourism education. Therefore, we need to further develop information activities, which are the most important thing in the tourism industry

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7. Maps
8. Standard

SSSED-29

The Impact of Adolescents' Self-Assessment on the Attainment of Happiness

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Abstract: This study examines the relationship between self-esteem and happiness among adolescents in Ulaanbaatar, Mongolia. Given the rapid urbanization and its associated stresses, this research aims to identify key psychological traits that could enhance well-being among the city's youth. Utilizing Rosenberg's Self-Esteem Scale and the Subjective Happiness Scale, the study analyzed data from 338 adolescents aged 12 to 16. Findings reveal a significant positive correlation between self-esteem and happiness, suggesting that higher self-esteem is associated with greater happiness levels among adolescents. These results underscore the importance of self-esteem in the psychological development of urban adolescents and suggest that interventions aimed at enhancing self-esteem could be beneficial in improving their overall happiness. This study contributes to the understanding of adolescent mental health in the context of Mongolian urban life, highlighting potential areas for educational and psychological interventions to foster a healthier youth population.

Keywords— Adolescents, Self-Assessment, Happiness, Self-Esteem, Psychological Well-Being.

1. Introduction

Background Information: Discusses the relevance and timeliness of studying adolescent self-esteem and happiness, particularly in an urban Mongolian context.

Self-esteem during adolescence is a critical predictor of psychological health and social outcomes. As adolescents transition from childhood to adulthood, their self-perceptions significantly influence their emotional and cognitive development. In urban environments like Ulaanbaatar, Mongolia, where rapid urbanization and modernization present unique challenges, the impact of environmental stressors—including noise, pollution, and social fragmentation—on adolescent well-being cannot be overstated. These factors contribute to a landscape where mental health issues become increasingly prevalent, underscoring the importance of understanding how intrinsic traits such as self-esteem can combat potential negative outcomes.

Problem Statement: Emphasizes the psychological challenges urban adolescents face and the potential impact of self-esteem on their well-being.

While there is considerable research linking self-esteem to adolescent happiness in various global contexts, there is a notable gap in such studies within Mongolia, particularly in its urban settings. Most existing research on Mongolian adolescents tends to focus on educational outcomes and behavioral problems, with

less attention given to their psychological well-being. This oversight persists despite the growing recognition of mental health issues among the youth in Ulaanbaatar, exacerbated by urban pressures.

Objectives and Hypotheses: Clearly states the research objectives and hypothesizes the relationships between self-esteem and happiness.

This study aims to fill the aforementioned gaps by examining the relationship between self-esteem and happiness among adolescents in Ulaanbaatar, providing insights that could inform interventions designed to enhance adolescent well-being in Mongolian urban settings. The specific objectives are to:

Review scientific theories and concepts explaining self-assessment.

Study various theoretical frameworks on happiness.

Explore psychological characteristics influencing teenagers' behaviors and perceptions.

Determine how teenagers' self-assessments influence their happiness levels.

Conduct a detailed study and perform statistical processing and comparison of study results.

Evaluate study outcomes and recommend interventions based on findings.

Based on the literature and preliminary observations, the following hypotheses are proposed:

H1: Adolescents' self-assessment impacts their happiness levels.

H2: There is a positive correlation between self-esteem and happiness among adolescents in Ulaanbaatar, suggesting that higher self-esteem is associated with greater levels of happiness.

These objectives and hypotheses guide the research towards understanding and addressing the psychosocial needs of urban adolescents, contributing to the broader discourse on mental health and societal well-being in the context of Mongolian urban development.

5. Theoretical Overview

Literature Review: Reviews existing literature on self-esteem and happiness, citing foundational theories and relevant studies to frame the research context.

The relationship between self-esteem and happiness has been extensively studied, with foundational theories dating back to the early psychological explorations of human behavior and mental health. Self-esteem, typically understood as an individual's sense of self-worth or personal value, is a crucial determinant of psychological well-being (Rosenberg, 1965). High self-esteem is associated with positive outcomes such as greater life satisfaction, lower levels of anxiety and depression, and better stress management (Orth, Robins, & Widaman, 2012). In the context of adolescence, these relationships become even more significant due to the developmental challenges this age group faces. Adolescents are particularly vulnerable to self-esteem fluctuations due to physiological, emotional, and social changes (Harter, 1999). Studies, including those cited in the dissertation, indicate that adolescents' self-esteem significantly impacts their happiness and overall mental health. For instance, research has shown a positive correlation between high self-esteem and higher happiness levels among youth, demonstrating that self-esteem acts as a buffer against stress and adverse psychological conditions (Kernis, 2003).

Notably, the dissertation references the work of Carl Rogers and his emphasis on the role of self-esteem in achieving personal fulfillment and happiness. Rogers' humanistic approach underlines the concept that feeling valued and loved is essential for developing high self-esteem, which in turn, enhances an individual's capability to achieve happiness (Rogers, 1959).

Conceptual Framework: Discusses the theoretical basis for expecting a correlation between self-esteem and happiness among adolescents.

The theoretical framework for this study is based on the integration of classical and contemporary theories of self-esteem and happiness. The interrelation between these constructs is conceptualized through the lens of humanistic and developmental psychology, which suggests that self-esteem is a foundational element of personal development that directly influences an individual's emotional well-being.

Building on the works of James, Rosenberg, and Harter, the conceptual framework posits that self-esteem is not just a reflective appraisal of one's own worth but also a driving force that shapes one's experience of happiness. This relationship is particularly dynamic during adolescence, a period marked by intense identity formation and emotional development. The dissertation harnesses these theoretical insights to explore how self-assessment—adolescents' perceptions of their abilities and worth—modulates their experience of happiness. Furthermore, the framework incorporates the societal and cultural dimensions of self-esteem and happiness, acknowledging that the social environment, including family dynamics, peer interactions, and cultural norms, plays a crucial role in shaping these psychological outcomes. This is particularly relevant in the urban Mongolian context, where rapid social changes and urban pressures might uniquely influence adolescent psychological development. By grounding the study in this well-established theoretical foundation, the research aims to explore the specific pathways through which self-esteem contributes to happiness among adolescents in Ulaanbaatar, offering insights that may inform targeted interventions to promote mental health and well-being in this demographic.

6. Survey Overview

Methodology: Detailed description of the research design, including participant recruitment, data collection methods, and the scales used for measurement.

The research was conducted using a cross-sectional design to explore the relationship between self-esteem and happiness among adolescents in Ulaanbaatar, Mongolia. The study utilized structured questionnaires, which included standardized scales for measuring self-esteem and happiness, ensuring consistency and reliability in data collection. Participant recruitment was facilitated through local schools, where permissions were secured from school administrations and parental consent was obtained for minors participating in the study.

3.1 Participants and other relevant information

Describes the demographics of the participants and the settings from which they were drawn.

The study sampled a total of 338 adolescents aged between 12 to 16 years, attending various secondary schools across Ulaanbaatar. This age range was chosen to capture a critical developmental phase in adolescence. The sample included a nearly equal distribution of males (51.2%) and females (48.8%), reflecting the gender composition in the targeted age group in the urban population. The schools selected for the study were situated in different districts of the city, providing a diverse socioeconomic and cultural mix, which enhanced the generalizability of the findings within the urban setting. The study surveyed students from several schools in Ulaanbaatar: 83 students from grades 7, 8, and 9 at Orchlon School in the Khan-Uul district; a total of 95 students from groups 7B, 8B, 9A, and 9C at Hobby School; 98 students from grades 7, 8, and 9 at School No. 17 in the Chingeltei district; and 74 students from grades 7, 8, and 9 at

School No. 159 in the Sukhbaatar district. Out of a total of 350 students surveyed, data from 338 students met the quality criteria and were used in the analysis of the study results.

3.2 Measurements

Details the instruments used for assessing self-esteem and happiness, such as Rosenberg's Self-Esteem Scale and the Subjective Happiness Scale. Two main instruments were used for data collection:

Rosenberg's Self-Esteem Scale (RSES): This is a 10-item scale that measures global self-worth by assessing both positive and negative feelings about the self. Each item is answered on a 4-point scale from strongly agree to strongly disagree. This scale is widely used and has been validated in numerous studies across different cultural backgrounds, making it appropriate for assessing self-esteem among Mongolian adolescents.

Subjective Happiness Scale (SHS): Developed by Lyubomirsky and Lepper (1999), this scale consists of four items designed to measure global subjective happiness. Responses are provided on a 7-point Likert scale, where higher scores indicate greater happiness. This scale has been used globally, including in diverse cultural settings, and provides a reliable measure of overall perceived happiness.

3.3 Data analysis: Explains the statistical methods used to analyze the collected data, including any specific models or tests applied. The primary analysis involved Pearson correlation coefficients to examine the relationship between self-esteem and happiness. Further, multiple regression analyses were conducted to assess the impact of demographic variables (such as age and gender) on the relationship between self-esteem and happiness. Significance levels were set at $p < 0.05$ for all statistical tests, ensuring that the findings were statistically robust.

4. Results

Data Presentation: Includes detailed statistical findings, tables, and charts that illustrate the relationships explored. The analysis of data collected from 338 adolescents using Rosenberg's Self-Esteem Scale and the Subjective Happiness Scale yielded insightful results:

Correlation Analysis: The Pearson correlation coefficient between self-esteem and happiness was $r = 0.62$, $p < 0.001$, indicating a strong positive correlation between these two variables. This result suggests that higher self-esteem is associated with higher levels of happiness among adolescents.

Table 1. The Relationship of Self-Esteem and Happiness

			Self-esteem	Happiness	Project test
Spirman	Self-esteem	Correlation Coefficient	1.000	.510**	.479**
		Sig. (2-tailed)	.	.000	.000
		N	338	338	338
	Happiness	Correlation Coefficient	.510**	1.000	.475**
		Sig. (2-tailed)	.000	.	.000
		N	338	338	338
	Project test	Correlation Coefficient	.479**	.475**	1.000
		Sig. (2-tailed)	.000	.000	.
		N	338	338	338

The study aimed to study whether a teenager's self-esteem is related to happiness, and the relevance was applied to science using the Spirman test, or $p=.000$. For example, self-esteem and happiness are positively dependent or increased adolescent self-esteem ($r=.510$, $p=.000$). It also increases adolescent self-esteem when it comes to projective testing ($r=.479$, $p=.000$).

Table 2. Age and The Relationship of Self-Esteem and Happiness

			Self-esteem	Happiness	Project test
Spirman	Age	Correlation Coefficient	.136*	-.006	-.010
		Sig. (2-tailed)	.012	.910	.849
		N	338	338	338

Studies have shown that only a small age-related result in Spirman's testing of whether students and their own assessments and happiness are relevant ($r=.136$, $p=.012$). For example, when pupils increased their age, their valuation increased by a noticeable amount. Using the Mann-Whitney test to determine whether a teenager's self-esteem and happiness differ depending on gender, his or her assessment produced different results depending on gender ($p=.000$). In other words, female pupils had lower self-esteem than male pupils.

Table 3. Comparison of Gender and Self-Esteem and Happiness

	Gender	N	Average spinning	p
Self-esteem	male	173	189.75	.000
	woman	165	148.26	
Happiness	male	173	178.91	.069
	woman	165	159.64	
Project test	male	173	175.10	.273
	woman	165	163.62	

Using the Mann-Whitney test to determine whether a teenager's self-esteem and happiness differ depending on gender, his or her assessment produced different results depending on gender ($p=.000$). In other words, female pupils had lower self-esteem than male pupils.

Table 4. Comparison of School and Self-Esteem and Happiness

	School	N	Average spinning	p
Self-esteem	private school	174	160.28	.073
	public school	164	179.28	
Happiness	private school	174	168.93	.912
	public school	164	170.10	
Project test	private school	174	172.99	.492
	public school	164	165.80	

Using the Mann-Whitney test to determine whether teenagers' own assessments and happiness differ depending on the school they are studying, the statistically different results were not detected in science. In contrast, $p=.073$ — a close-knit indicator of differences, the percentage of students studying in private schools was lower than that of pupils attending public schools.

Interpretation of Findings: Discusses the significance and implications of the statistical results.

The statistically significant correlation between self-esteem and happiness underscores the critical role that self-perception plays in the emotional well-being of adolescents. This finding aligns with theoretical expectations based on previous research, which posits that self-esteem acts as an important psychological resource that can enhance an individual's capacity to experience happiness.

Demographic Influences: Further analysis revealed that while the correlation remained significant across different age groups, it was slightly stronger among older adolescents (ages 15-16) compared to younger

ones (ages 12-14). This variation might suggest that as adolescents grow older, the impact of self-esteem on happiness becomes more pronounced, potentially due to increased self-awareness and cognitive maturation. Gender and School Differences: The Mann-Whitney test results indicate a significant gender difference in self-esteem among teenagers, with female pupils displaying lower self-esteem than males ($p=.000$). No statistically significant differences were found in self-assessment and happiness between students attending private and public schools ($p=.073$), though the trend suggests potential underlying factors worth further exploration.

Discussion

Integration with Existing Knowledge: Compares and contrasts the findings with prior research. The findings of this study indicating a strong positive correlation between self-esteem and happiness among adolescents in Ulaanbaatar are consistent with existing literature that identifies self-esteem as a significant predictor of happiness (Rosenberg, 1965; Orth, Robins, & Widaman, 2012). This relationship has been well-documented across diverse cultural and geographical contexts, underscoring the universality of self-esteem's impact on psychological well-being. However, this study extends the existing knowledge by contextualizing these findings within an urban Mongolian setting, a relatively underexplored area in adolescent psychological research. Comparatively, the strength of the correlation found in this study ($r = 0.62$) is somewhat higher than that reported in some Western studies, where correlations typically range around $r = 0.50$ (Kerns, 2003). This difference could potentially be attributed to cultural differences in the expression and perception of self-esteem and happiness or the unique socio-economic and environmental stressors faced by adolescents in Ulaanbaatar. **Implications of Findings:** Discusses the potential applications of the research in educational and psychological interventions.

The link between self-esteem and happiness demonstrated in this study has significant implications for educational and psychological interventions aimed at improving adolescent well-being. Educational systems can incorporate programs that foster positive self-esteem, such as through school-based mental health initiatives, positive reinforcement techniques in classroom settings, and programs that encourage skills development and self-efficacy among students. Psychologically, interventions could include counseling and therapy sessions that focus on building self-worth, especially for adolescents showing signs of low happiness and self-esteem. Community programs could also be designed to provide adolescents with supportive environments, such as youth clubs and sports programs, where they can experience achievement and recognition, further boosting their self-esteem.

Study Limitations: Critically evaluates the limitations of the study and potential biases.

While the findings of this study are compelling, several limitations must be acknowledged:

Sample Diversity: Although efforts were made to include a diverse sample from various schools in Ulaanbaatar, the findings may not be generalizable to all urban adolescents in Mongolia, especially those in different urban or rural settings.

Cultural Context: The cultural aspects of self-esteem and happiness, which can vary significantly across different settings, were not deeply explored in this study. Further research should consider these cultural factors more comprehensively to tailor interventions more effectively.

Potential Biases: The study's reliance on self-report questionnaires might also introduce biases where participants could either underreport or overreport their feelings due to misunderstanding questions or wishing to conform to perceived social norms.

Conclusion

Summary of Findings: Provides a concise recap of the key results and their implications for both theory and practice.

This study explored the relationship between self-esteem and happiness among adolescents in Ulaanbaatar, Mongolia, finding a significant positive correlation between the two. Specifically, adolescents with higher self-esteem reported higher levels of happiness. This correlation supports and extends existing psychological theories which posit that self-esteem is a crucial determinant of overall psychological well-being. Furthermore, the study revealed that self-assessment scores significantly increase with age among students. In exploring gender differences, it was found that male students consistently reported higher self-assessment scores than their female counterparts, indicating a statistically significant gender disparity. However, when analyzing the influence of school type on these perceptions, no statistically significant differences emerged, although the data suggested that students from public schools tended to have higher self-assessment scores than those from private schools. The results reinforce the idea that self-esteem is not only a critical factor in adolescent development but also a potential lever for enhancing happiness and mental health in challenging urban environments. Given the rapid urbanization in Ulaanbaatar and its associated stressors, these findings highlight the importance of addressing psychological health in urban planning and educational policies. Theoretically, the study contributes to the understanding of how environmental and cultural contexts interact with psychological constructs like self-esteem and happiness. Practically, it suggests that interventions aimed at boosting self-esteem could be beneficial in improving the mental health and well-being of adolescents. Educational systems and community programs in Ulaanbaatar might consider integrating self-esteem enhancing activities and curricula to support adolescent development.

Recommendations for Future Research: Suggests directions for further investigation to expand upon the findings. While the study provides valuable insights, it also opens several avenues for further research:

Broader Demographics: Expanding the research to include diverse populations from different urban and rural areas within Mongolia would help determine the generalizability of the findings across various socio-economic and cultural settings.

Cultural Considerations: Further studies should explore how cultural factors specific to Mongolia influence self-esteem and happiness. This could involve qualitative research methods to capture nuanced perspectives on these constructs.

Intervention Studies: Implementing and evaluating the effectiveness of specific self-esteem enhancing interventions could provide practical data on how best to support adolescent happiness and development. These studies could focus on educational settings, family dynamics, and community programs.

In conclusion, this study emphasizes the pivotal role of self-esteem in fostering adolescent happiness in an urban context, suggesting practical steps for enhancing adolescent well-being through targeted educational

and psychological interventions. As Mongolia continues to urbanize, the need for focused research and practical applications in adolescent psychology becomes ever more critical.

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BTOT-30

Risk assessment on the Effects of dust concentration on climate change in some areas of Gobi Desert

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Abstract— We analyzed dust mass concentrations of PM₁₀ and PM_{2.5} from seven monitoring stations in the Gobi Desert and steppe regions of Mongolia during 2009-2014. Annual averaged PM₁₀ (PM_{2.5}) concentrations were high in winter due to air pollution, in spring owing to dust storms and lower in summer. Annual variations of PM₁₀ (PM_{2.5}) were not available for Altai, Arvaikheer and Undurkhaan due to data discontinuance. However, annual averages of PM₁₀ (PM_{2.5}) were higher at Arvaikheer site in winter months and lower at Altai and Underkhaan in all seasons. Annual averaged PM₁₀ were about 46-51 $\mu\text{g m}^{-3}$ around Dalanzadgad in Umnugobi Aimag and Erdene (Ulaan-Uul) site in Dornogobi Aimag. Moreover, annual averaged PM_{2.5} was about 34-37 $\mu\text{g m}^{-3}$ around Dalanzadgad. Diurnal variations of PM₁₀ (PM_{2.5}) concentrations at all sites had two maxima in the morning and evening and two minima in the afternoon and early morning. The two maxima in the diurnal variation were coincided well with time periods of coal burning in stoves of private houses. This is an evidence of anthropogenic impacts on air quality. During dust storms, huge amounts of fine dust particles were raised in the air. Daily maximum wind speeds were 26-40 m/s in the Gobi Desert and steppe regions in 28-29 April 2011 and dust mass concentrations of PM₁₀ reached 1053 $\mu\text{g m}^{-3}$ at Dalanzadgad, 1450 $\mu\text{g m}^{-3}$ at Zamiin-Uud, and 4992 $\mu\text{g m}^{-3}$ at Erdene. Lidar at Zamyn-Uud showed that dust was lifted to 1.5 km high from the ground level. In the context of Mongolia, the current and future criteria selected in the ecosystem, nature, and socio-economic sectors for climate change are normalized at the provincial level, and the results of the research are presented to make recommendations for the management of vulnerability and risk index for each sector to $RI \leq 0.40$.

Keywords—Sand storm, particles, dust content, lidar, vertical dispersion of dust, mass content,

1.INTRODUCTION

The Africa (Sahara Desert), Arabia, America, Central and East Asia and Central Australia are included to the most dry lands of the World. Dust and dust particles directly or indirectly influence on human health, weather, climate conditions and rainfall amount. To determine the volume of dust, dust particles in the atmosphere is important for studying above said bad affects. If aerodynamic diameter of the small dust and dust particles in the atmosphere is smaller than 10.0, 2.5 or 1.0 micrometer, it will be marked as PM₁₀, PM_{2.5} and PM_{1.0}. Dust, dust particles and aerosol in the air are measured by LIDAR and instruments around the land surface, and aerosol optic width is measured by satellite.

Dust storm is generated by the reaction of a strong wind and land surface, and it is a natural disaster, which may cause a risk for human life and huge damages for country's economy. As well as dust storm degrades agricultural lands and it badly influences on air quality and directly or indirectly affects to solar radiation, cloud formation processes and to world climate changes.

Dust storm has been observed by visible orientation since 1936. In the frame of cooperation with NEAsian countries, the dust storm has been measured by professional tools at Gobi's Four and Steppe's Three Stations. It is required to process new measuring data and to create new results. These demands became fundamentals of doing this research.

2. DATA AND METHODS

Dust monitoring stations were established at existing meteorological stations in dust storm source regions (Fig.1). Five stations were in the Gobi Desert: Zamyn-uud, Sainshand, and Erdene in Dornogobi province, Dalanzadgad in Umnugobi province, and Altai in Gobi-Altai province. Two stations were in the steppe region: Arvaikheer in Uverkhangai province, Undurkhaan in Khentei province (Fig.1).

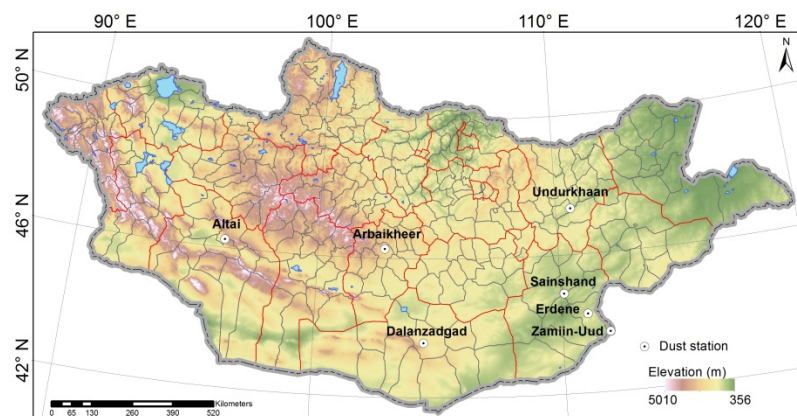


Fig. 1. Locations of dust monitoring sites in Mongolia

Mie scattering lidars were installed at Zamyn-Uud, Sainshand and Ulaanbaatar by the Japanese International Cooperation Agency (JICA) in 2008. The China Meteorological Administration established dust and sand storm monitoring stations at Arvaikheer, Underkhaan, and Altai during 2009-2010.

We mainly made use of mass concentrations of PM_{10} ($PM_{2.5}$), visibility, wind speed at these seven sites during 2019-2024. The hourly measurements of PM_{10} ($PM_{2.5}$) concentrations were analyzed together with the wind speed, visibility, and weather conditions from the daily surface and 500 hPa upper-level charts produced by the Information and Research Institute of Meteorology Hydrology and Environment.

At Dalanzadgad, Sainshand, Zamyn-Uud, Erdene, Arvaikheer, Underkhaan, and Altai dust mass concentrations of PM_{10} and $PM_{2.5}$ were measured by a nephelometer, an instrument that measures light scattering by airborne particulates.

The lidars used in the study have two-wavelengths (532 nm, 1064 nm). Main parameters of Mie-scattering lidars are the depolarization ratio, attenuated backscattering coefficient and extinction coefficient. They are operated automatically, and the 5 minute averaged lidar profiles are recorded every 15 minutes in the continuous observation mode.

Gillette and Passi (1998) suggested that the dust emission rate is proportional to the fourth power of friction velocity in theory.

$$F = C \cdot u_*^4 \quad (1)$$

Here, F is the flux of dust, C is an empirical constant, and u_*^4 is the friction velocity. Assuming that the dust concentration can be expressed using wind speed U , we estimated the threshold wind speed at the seven stations using Eq (1).

3. RESULTS AND DISCUSSION

Two maximum and two minimum meaning of dust concentration PM_{10} ($PM_{2.5}$) were revealed in other seasons except for summer and these data are mostly revealed in winter and spring seasons. (Fig. 2).

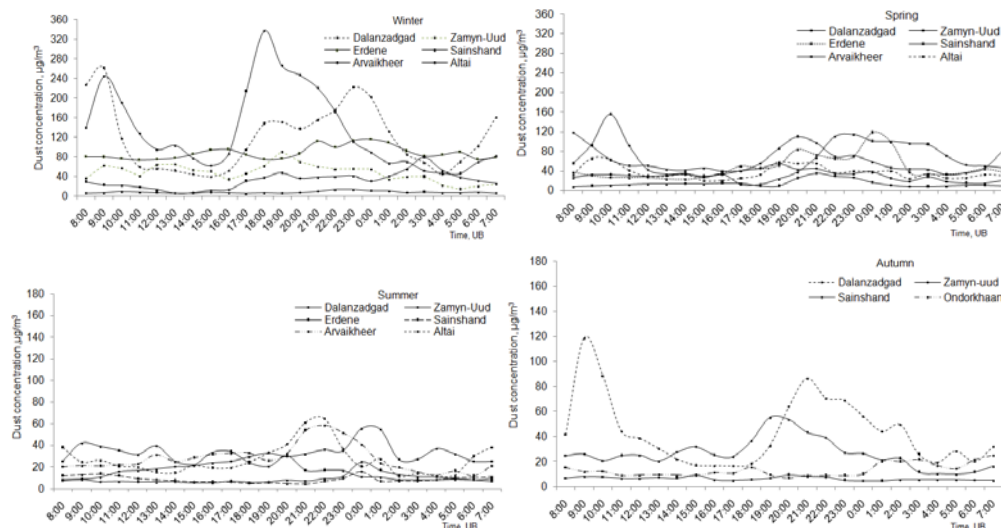


Fig. 2. Diurnal variations PM_{10} and $PM_{2.5}$ concentration

PM_{10} ($PM_{2.5}$) average dust concentration was as below in the Gobi's areas and it was 46 (34) $\mu g/m^3$ in Dalanzadgad area in 2009, 46 (37) $\mu g/m^3$ in 2010, 50 $\mu g/m^3$ in 2011, and 7 $\mu g/m^3$ in Sainshand area in 2009, 6 $\mu g/m^3$ in 2013, 29 (18) $\mu g/m^3$ in Zamyn-Uud area in 2009, 51 $\mu g/m^3$ in Erdene (Dornogobi) area in 2009 and 50 $\mu g/m^3$ in 2012. Above mentioned yearly average is approximate to yearly average standards of air quality of Mongolia ($PM_{10}=50 \mu g/m^3$) or it is below of this amount. Data from Altai, Arvaikheer and Undurkhaan Stations, which are located in Steppe Zone, is interrupted, so it is impossible to estimate their yearly averages. The research results show that the dust concentration in Altai and Undurkhaan is lower by 2-3 times as compared with Gobi's regions.

By particular research on dust storm, we have defined dust amount in the air and climate indications. We have chosen and researched the dust storm, occurred on 28-29 April, 2011. During this dust storm, wind maximum speed reached to 26-40 m/s and maximum mass concentration of PM_{10} dust in 1053 $\mu g/m^3$ in Dalanzadgad, 292 $\mu g/m^3$ in Sainshand, 1450 $\mu g/m^3$ in Zamyn-uud and 4992 $\mu g/m^3$ in Erdene Soum area. It shows that huge amount of dust erupted to air during this dust storm. By the data from LIDAR, which was installed in Zamyn-Uud station, the dust spread was in height of 1.5 km above land surface. For Altai Station, we have researched dust storm, occurred on 7-11 March, 2013 and dust storm maximum speed reached to 16 m/s and maximum mass concentration of PM_{10} ($PM_{2.5}$, $PM_{1.0}$) in cubic meter air was measured as 846 (215, 137) μg and visibility decreased as 242 m. For Arvaikheer station, We have researched dust storm, occurred on 20-22 April, 2012 and dust storm maximum speed reached to 23 m/s and maximum mass concentration of PM_{10} ($PM_{2.5}$) was observed as 658 (73) μg and visibility decreased as 1537 m.

We have researched dust storm and dust transition by using the computing model HYSPLIT based on the dust measuring data of some countries of the East Northern Asia. From 29 April to 02 May, 2011 dust storm occurred in the regions of East Northern Asia and PM_{10} dust concentration was highest in Mongolian and China Gobi's deserts. We have researched transition of the dust storm, occurred

from 29 April to 03 May, 2011 in Northeast Asia by using the HYSPLIT model and creating air mass trajectories (Fig.3).

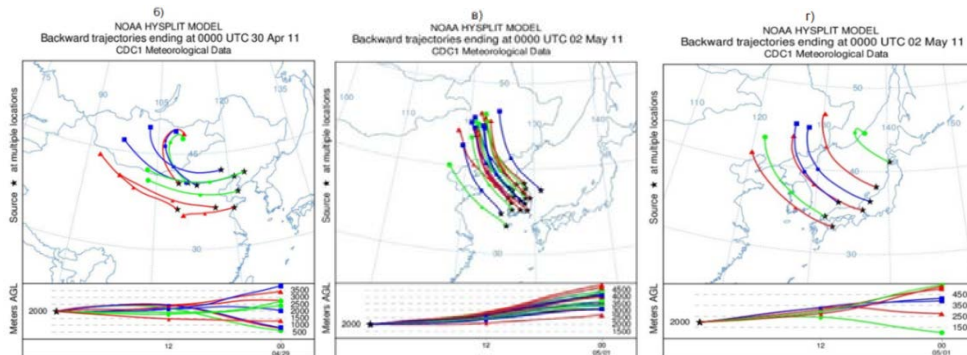


Fig. 3. Selected backward trajectories produced by the NOAA HYSPLIT model for transported dust layers. a) Mongolia, b) China c) Korea d) Japan

During this dust storm, the PM_{10} dust maximum concentration was reached to $4992 \mu g/m^3$ on 29 April in Mongolia, $2484 \mu g/m^3$ on 30 April in China, $1025 \mu g/m^3$ on 02 May in the Republic of Korea and $483 \mu g/m^3$ in Japan. Dust vertical spread, occurred during dust storm, was measured by LIDAR measurement and it reached to the height of 1.5 km in Zamyn-Uud area, 2.5 km in Seoul area and 3.0 km in Tokyo area (Fig.4).

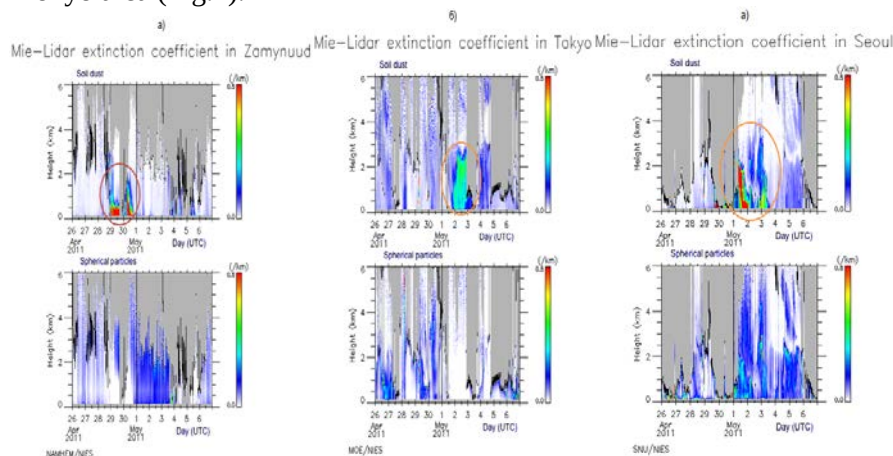
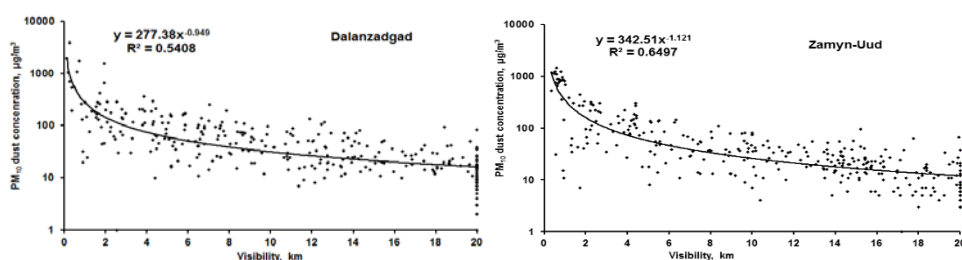


Fig. 4. The Mie Lidar extinction coefficients (time UTC) for soil dust (upper panel) and spherical particles (Lower panel) at Zamyn-Uud (a), Seoul (b), Tokyo (c) for April-May 2011

The empiric regressive correlations between PM_{10} dust concentration, visibility and wind speed were determined based on the measuring data. We have determined correlation equation of each station and visibility is exponentially decreased with the increase of dust concentration in normal or stormy conditions (Fig.5).



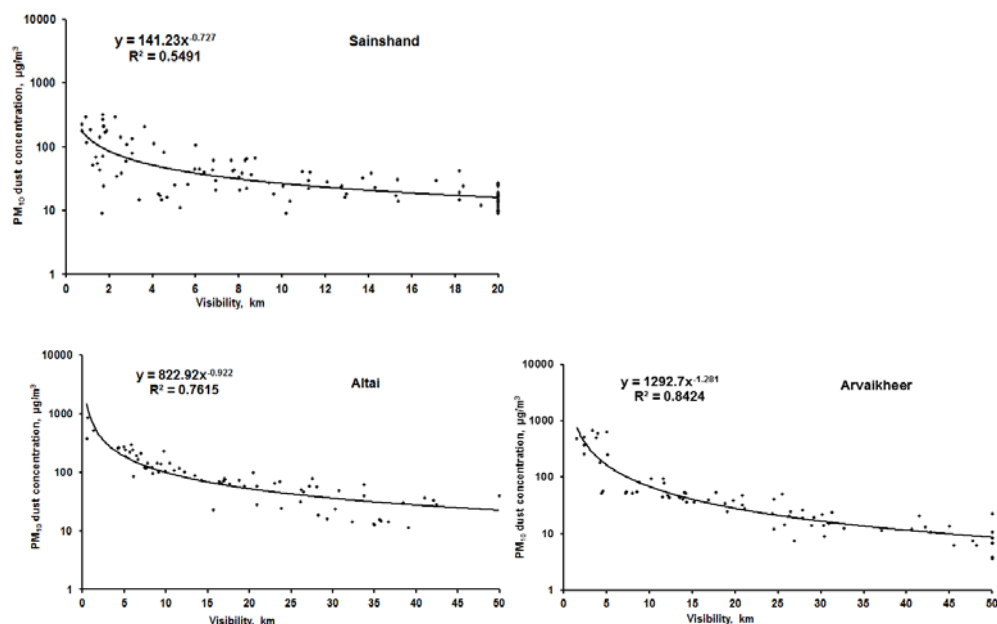
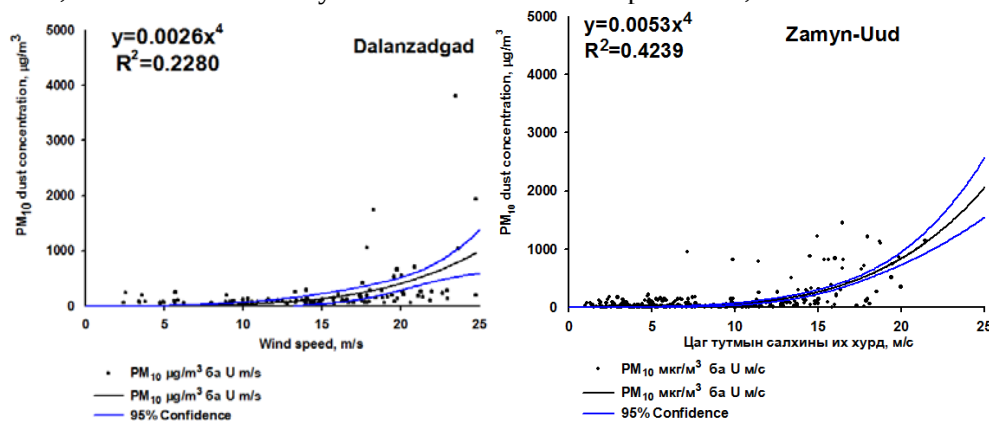


Fig. 5.

PM₁₀ concentration (µg/m³) vs. visibility (km) at the seven station during normal (before or after dust events) and hazy (dust event) conditions of the air.

As a result we have computed the functional correlation equation of PM₁₀ dust concentration and storm speed, I have estimated the threshold wind speed for generating dust from the land surface. By the statistics of 2009-2013, the threshold wind speed was as 11.8 m/s in Dalanzadgad, 16.9 m/s in Sainshand, 6.5 m/s in Erdenet and 9.4 m/s in Zamyn-Uud and by case studies this speed was as 11.4 m/s in Altai and 11.8 m/s in Arvaikheer. The Fig.5 and 6 shows the dust storm occurrences, observed by the Dalanzadgad, Sainshand, Zamyn-Uud and Erdene Stations on 14-18 March, 2009 and on 18-19 March, 2010 and on April 28-30, 2011 and on 08-09 March, 2012-2013, observed by the Altai Station on 07-11 March, 2013 and observed by Arvaikheer Station on April 20-22, 2012.



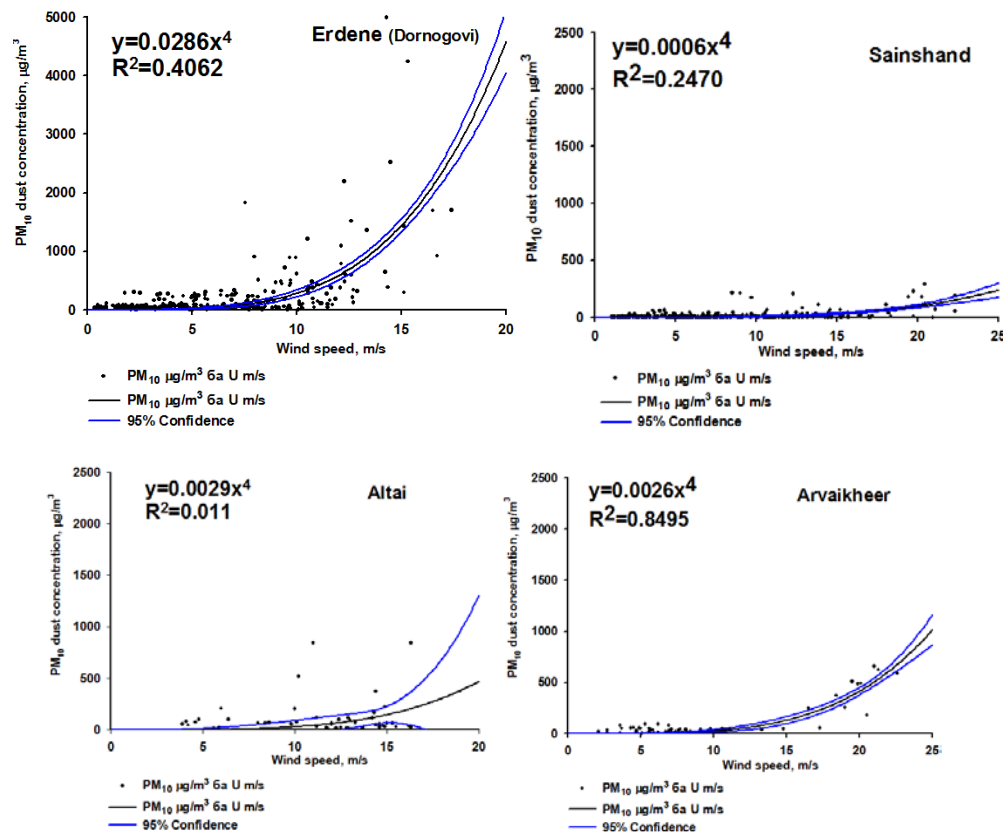


Fig. 6. PM₁₀ concentration (µg/m³) vs. wind speed (m/s) at the seven station at 4 m height.

In Mongolia, the vulnerability and risk assessment for climate change impacts are conducted at the provincial level, focusing on natural and social sectors such as surface water, forests, pasture soil, wildlife, agriculture, animal husbandry, and public health. These sectors are identified as sensitive or vulnerable based on quantitative assessments derived from global and regional climate models, with results presented in various indicators. The research involves evaluating the impact of climate change on livestock and public health sectors, utilizing data from climate dynamic models to express quantitative results in different dimensions and units. Spatial resolution improvements in regional climate models are considered in the risk assessment, with quantitative impact assessments conducted for the period of 2046-2065. Criteria for vulnerability and risk are established at provincial and regional levels, then normalized using the United Nations Human Development Index (HDI) to create a vulnerability index based on current average values and a risk index based on future average values. These results are combined and presented in Table 1 for management recommendations on vulnerability and risk indices.

Table 1. Evaluation of the environmental sustainability index of the province

Region	Province	Vulnerability Assessment (Current Climate, 1986-2005)				Risk Assessment, Reg CM4-RCHGB5 (Future Climate, 2046-2065)				Risk assessment, Reg CM4/HadGEM2 (Future climate, 2046-2065)				Today		The future	The altitude
		Average annual temperature, °C	Total annual precipitation, mm	Repetition of steel, %	Repeatability, %	Average annual temperature, °C	Total annual precipitation, mm	Repetition of steel, %	Repeatability, %	Average annual temperature, °C	Total annual precipitation, mm	Repetition of steel, %	Repeatability, %	Index of vulnerability	RI		
Western	Altai	2.4 (0.4)	129.0 (0.9)	18.0 (0.6)	20.0 (0.6)	4.4 (0.3)	148.4 (0.9)	43.0 (1.0)	30.0 (0.5)	5.7 (0.2)	141.9 (0.9)	43.0 (1.0)	30.0 (0.5)	0.6	0.7	↑	
Central	Arvaikheer	0.4 (0.6)	256.3 (0.3)	17.0 (0.5)	25.0 (1.0)	2.4 (0.5)	281.9 (0.3)	32.0 (0.7)	35.0 (0.7)	3.7 (0.4)	281.9 (0.3)	32.0 (0.7)	35.0 (0.7)	0.6	0.5	↓	
	Erdene	-0.6 (0.8)	242.4 (0.4)	14.0 (0.3)	14.0 (0.1)	1.4 (0.6)	266.6 (0.3)	29.0 (0.6)	29.0 (0.5)	2.9 (0.5)	266.6 (0.3)	29.0 (0.6)	29.0 (0.5)	0.4	0.5	↑	
Eastern	Undurkhaan	0.1 (0.7)	313.7 (0)	15.0 (0.3)	19.0 (0.5)	2.4 (0.5)	345.1 (0)	30.0 (0.6)	34.0 (0.7)	3.4 (0.5)	345.1 (0)	30.0 (0.6)	34.0 (0.7)	0.4	0.4		
Gobi	Dalanzadgal	2.2 (0.4)	148.9 (0.8)	23.0 (1.0)	25.0 (1.0)	4.5 (0.3)	163.8 (0.8)	38.0 (0.8)	40.0 (0.8)	4.5 (0.3)	163.8 (0.8)	38.0 (0.8)	40.0 (0.8)	0.8	0.7	↓	
	Zamiin und	3.2 (0.3)	143.2 (0.9)	14.0 (0.3)	14.0 (0.1)	5.5 (0.2)	157.5 (0.8)	34.0 (0.7)	24.0 (0.3)	6.2 (0.2)	171.8 (0.7)	34.0 (0.7)	24.0 (0.3)	0.4	0.5	↑	

Among the 21 provinces analyzed based on vulnerability index, Bulgan province emerged as non-vulnerable, while Uvs, Zavkhan, and Dundgov provinces were identified as highly vulnerable. The remaining provinces were categorized as vulnerable. This approach was carefully considered during the risk assessment process. The study also incorporated the results of enhancing the spatial accuracy of the regional climate model in the risk assessment. The quantitative outcomes of the impact assessment for the period of 2046-2065 were utilized to classify each sector's vulnerability at the provincial level. This classification is illustrated in Figure 8.

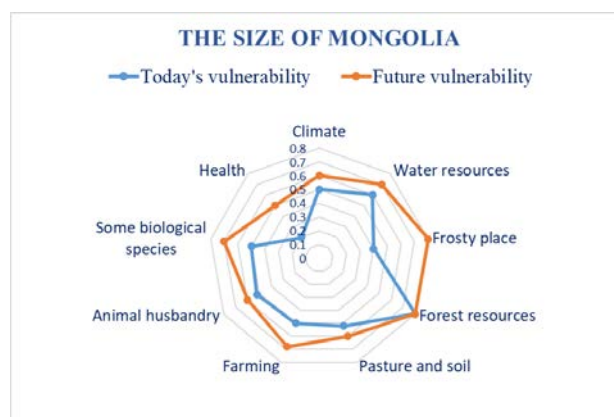


Fig 8. The vulnerability and risk index of ecosystem sectors in Mongolia in relation to climate change

The various regions exhibit contrasting characteristics in terms of vulnerability to climate change. Specifically, the western region is categorized as "highly vulnerable," whereas the other regions are classified as "vulnerable."

In contrast, the central region displays varying levels of vulnerability, with the western region standing out due to its abundant agricultural and forest resources. Conversely, the Gobi region demonstrates high vulnerability in terms of water resources and pastures, as illustrated in Figure 9.

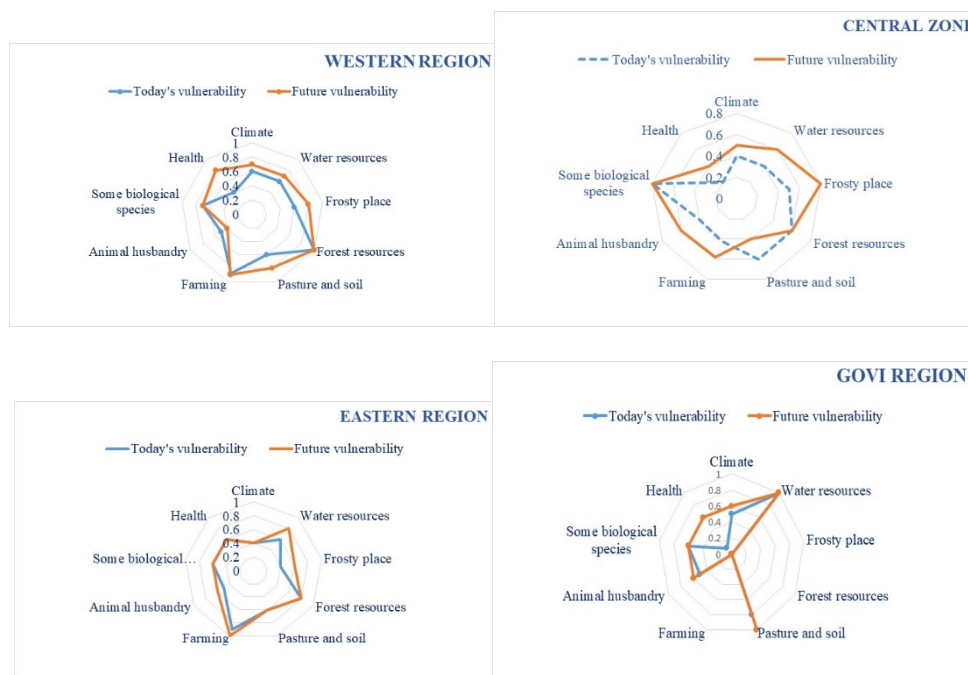


Fig 9. The vulnerability and risk index of ecosystem sectors in Mongolia in relation to climate change

The research findings indicate that consolidating the impact assessment of various sectors into a single dimension and conducting comparisons reveal the importance of conducting a comprehensive evaluation of the adaptation strategies for vulnerability and risk reduction in provinces and regions through effective management techniques.

4. CONCLUSION

1. Dust concentration of PM_{10} ($PM_{2.5}$) in the air is much increased in the winter season because of human activities and in the spring season because of the natural dust storm. Dust mass concentration PM_{10} ($PM_{2.5}$) had two maximum and two minimum that were clearly revealed in other seasons except for summer. Concentration of $PM_{2.5}$ dust particles, which is contained in PM_{10} dust, is higher in winter and spring seasons and its connected with some reasons as air pollution and spring dust storm. Concentration of dust particles is lower in Altai, Undurkhaan Stations, which are located in steppe zone, during all seasons of the year.
2. During dust storm, which covered the Northeast Asia, the dust concentration PM_{10} around the land surface was higher at Gobi's deserts of Mongolia and China Republic and it decreased with the transition to far. The vertical spread of dust was in height of 1.5-2.0 km in Gobi area of Mongolia and it reached to 2.0-3.0 kms in the countries, located in downwind direction of dust storm.
3. The visibility is exponentially decreased with the increase of dust concentration in the air. By estimating the data of 2009-2013, the threshold wind speed for dust emission was 11.8 m/s in Dalanzadgad, 16.9 m/s in Sainshand, 6.5 m/s in Erdene and 9.4m/s in Zamyn-Uud and by case studies this speed was as 11.4 m/s in Altai and 11.8 m/s in Arvaikheer.
4. In order to enhance the effectiveness of climate change adaptation efforts, it is crucial to enhance coordination and alignment between government and private sector organizations. This can be achieved by ensuring that the Risk Index (RI) is maintained at or below 0.41, which signifies a sensitive/risky level. Furthermore, a policy plan should be implemented to further reduce the RI to a level below 0.40.
5. The researchers emphasize the importance of organizing knowledge and training programs to effectively address the adverse impacts of climate change on both the environment and socio-

economic sectors. By enhancing understanding and awareness of these negative effects, the process of adapting to climate change can be made more efficient and impactful.

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SSED-32

Preventing teenage students from peer bullying as a class tutor

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Abstract- The issue of peer bullying among teenagers is one of the issues that stakeholders in the education sector should address. This issue has become important nowadays when our country is trying to build a humane and civil democratic society. On the other hand, with the rapid development of science and technology, the negative influence of mobile phones and social networks has caused immature teenagers to change their behavior. This leads to a negative phenomenon of peer bullying in the school environment, which is the reason for studying this topic. Peer bullying is a form of emotional and physical violence and has three characteristics: intentionality, frequency, and power imbalance. The purpose of this research is to determine the optimal way for the teacher to manage the class to prevent bullying by peers. In the framework of this study, teachers and students have been surveyed for their opinions about peer bullying. The results of the students' questionnaire were compared to the results of the peer bullying conducted nationwide by the Human Rights Commission of Mongolia. Based on the results of the questionnaire among teachers and students, action research aimed at preventing peer bullying among teenagers was carried out by organizing extracurricular activities among students. In addition, parents and custodians were involved in the lectures and events to help them to form their children's characters. Peer bullying is a form of emotional and physical violence and has three characteristics: intentionality, frequency, and power imbalance. Bullying by peers in elementary school is moderate, and it is usually caused by reasons such as child upbringing, weak parental supervision, children's communication disorders, bad habits of parents, and negative attitudes of parents. Verbal abuse, name-calling, and taking things without permission are the 3 most common among adolescents in a secondary school. To prevent this, in order to reduce the pressure of peer bullying, class tutors should organize educational lectures and discussions to educate the teachers, parents, and students about peer bullying and its types, the ways to prevent from it. To develop the children's middle school community into a cooperative community, and to create a favorable psychological environment, the target activities should be included in the extracurricular work plan to be implemented among teenagers.

SSEC-33

Analysis Of Factors Affecting the Growth of Foreign Investment

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Abstract: This paper discusses the challenges facing Mongolian economic competitiveness and foreign investment environment, drawing on annual research by international organizations to highlight areas of relative underperformance. Emphasizing the urgent need to improve the legal framework for foreign investment and implement effective policies to address issues encountered by foreign investors. The predominant reliance on the mining and extraction sector for foreign investment is noted, while other sectors, notably processing industries, exhibit suboptimal performance, necessitating structural reforms to diversify the economy. Analyzing the efficiency and returns of foreign investment from 2001 to 2021 reveals significant fluctuations in these indicators. Utilizing multivariate regression analysis, the study identifies economic growth as the primary driver of foreign investment, while factors such as inflation, real interest rates, and wage levels exert negative influences. Also this paper analyzes foreign investment in Mongolia, its efficacy, and the factors influencing its growth, employing econometric and statistical analysis methods. The analysis identifies both positive and negative factors affecting foreign investment growth. These findings underscore the imperative for strategic interventions to bolster economic competitiveness and foster a more conducive environment for foreign investment.

Keywords: *investment climate, investment efficiency, long-term outlook, investment in the mining sector, investment incentives*

I. Introduction

Foreign investment contributes to the economy by bringing in foreign currency, fostering economic growth, boosting employment, introducing new technologies and services, enhancing human resources, and promoting innovative management styles. Unlike debt, foreign investment does not impose repayment obligations. Several factors contribute to fostering a conducive environment for foreign investment, including economic liberalization (such as the removal of ownership and domestic share restrictions), favorable business conditions (political and economic stability, supportive industrial and trade policies, skilled workforce), and investment promotion measures (such as reducing government pressure and offering investment incentives) [2]. Successful implementation of foreign investment strategies hinges on creating and maintaining these conducive conditions. To attract foreign investment, it's essential to comprehensively study the factors influencing it. Accordingly, this study examines the determinants of foreign investment and evaluates its effectiveness.

One: Studies on the investment environment reveal that Mongolia attracted a total of 32.3 billion US dollars in foreign direct investment, with Canada contributing 14.7 billion US dollars (48.7%), China 4.8 billion US dollars, and Luxembourg 2.9 billion US dollars. While Mongolia maintains openness to foreign investment at a legal and regulatory level, the actual influx of investment remains comparatively low when benchmarked against other nations. Mere openness to investment is insufficient to attract

foreign capital; addressing challenges related to the investment climate, governance, and rule of law is essential for leveraging the positive impacts of private sector investment, including foreign investment, on the economy. Initial investment barriers define the overall complexity of a country's investment climate, spanning issues from ease of doing business to governance and regulatory quality.

II. Studies on the investment environment

Let's examine some pertinent research findings. Mongolia ranks 110th out of 180 countries in the 2021 Corruption Perceptions Index, scoring 35 points; 62nd out of 64 countries in the 2021 Digital Competitiveness Index by the World Competitiveness Research Organization IMD; and 61st out of 63 countries in the 2022 Economic Competitiveness Survey by the organization [12], [13].

The Fraser Institute of Canada conducts an annual "Mining Companies Survey" to assess how government policies influence mining investment. After surveying over 290 mining companies, they rank 84 countries, states, and regions in terms of their "Investment Favorability Index" and "Policy Perception Index." In 2021, Mongolia ranked 63rd out of 84 participants with a score of 50.66 on the Investment Favorability Index (down from 53rd out of 91 countries in 2017, with a score of 60.6). The country also ranked 75th out of 84 participants with 36.65 points on the Policy Perception Index (down from 70th out of 91 countries in 2017, with 54.2 points) [8]. According to the research, representatives of the mining industry in Mongolia hold negative views regarding the legal environment, social and economic impacts of investment, with perceptions declining significantly compared to previous research findings.

To stimulate the economy in the medium term, the Government of Mongolia plans to implement the "New Revival Policy" until 2030. Under this framework, 94 major projects are slated for implementation through public-private partnerships, with foreign investment playing a pivotal role. In 2022, the country established the "Government Implementation Agency - Department of Investment and Trade," overseen by the Minister of Economy and Development. The agency aims to enhance the investment environment, attract investment from targeted countries, regions, economic sectors, and priority areas, safeguard the rights and legitimate interests of investors, improve trade circulation, bolster import-substituting industries, support exports, and foster economic development. It seeks to create conditions conducive to diversifying government revenue, facilitating trade, and offering electronic one-stop services.

Given the aforementioned circumstances, the government must devise and implement effective policies to enhance the legal framework for foreign investment and address challenges faced by foreign investors.

III. Study on the effectiveness of foreign investment

Real values of total investment, foreign investment and GDP indicators for the years 2000-2021 are calculated /at 2005 par value/ and shown graphically.

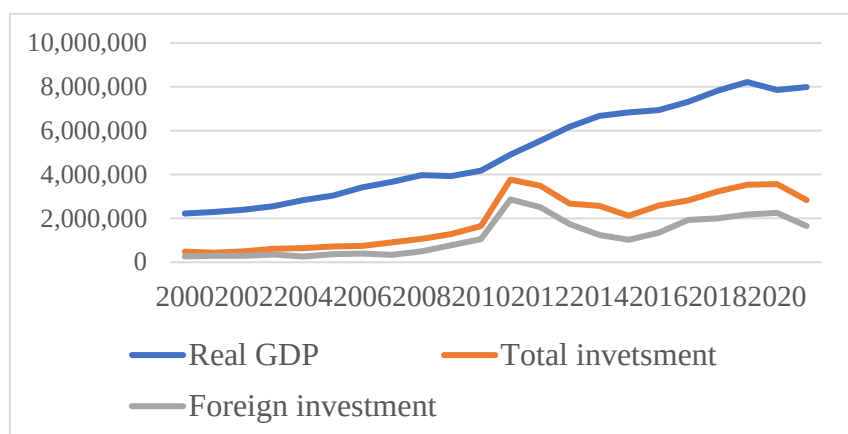


Figure 1. GDP, total investment and foreign investment (in 2005 par value, trillion MNT)
In real terms, economic growth averaged 6.4% per year from 2000 to 2021, whereas foreign investment growth averaged 15% per year. During 8 of the aforementioned years, the real indicator of foreign investment declined from the previous year.

Table 1: Structure of the foreign direct investment sector (in millions of US dollars)

Years	Total	Mining		Service		Manufacturing	
		Amount	Percentage	Amount	Percentage	Amount	Percentage
2011	5,745	4,492	78%	1,192	21%	61	1.1%
2012	5,232	3,911	75%	1,254	24%	66	1.3%
2013	3,246	2,507	77%	692	21%	47	1.4%
2014	1,991	1,271	64%	690	35%	30	1.5%
2015	1,396	790	57%	576	41%	31	2.2%
2016	1,486	941	63%	520	35%	25	1.7%
2017	2,086	1,442	69%	586	28%	58	2.8%
2018	2,728	2,130	78%	554	20%	45	1.6%
2019	3,130	2,374	76%	729	23%	27	0.9%
2020	2,560	1,678	66%	862	34%	19	0.7%
2021	2,713	2,076	77%	626	23%	11	0.4%

From 1990 to 2021, Mongolia recorded foreign investments totaling 86,216 billion MNT. When divided into 10-year intervals, investments amounted to 710.4 billion MNT in 1990-2000, 6,839.1 billion MNT in 2001-2010, and 78,667.3 billion MNT in 2011-2021. Foreign investment in our country has experienced a significant surge since 2011, averaging 7.2 trillion MNT or 2,937 billion dollars annually between 2011 and 2021. Essentially, 91% of the total foreign investment occurred in the past decade.

In our research, we have classified economic sectors according to the way in which foreign investments are made into 3 sectors: mining, extraction, service, and manufacturing. As of 2021, the mining and extraction sector accounted for 76.5% of total foreign direct investment, while the service and manufacturing sectors contributed 23.1% each. The mining and quarrying sector consistently maintained a high share (averaging 70%) of foreign direct investment from 2011 to 2021 (see Table 1). The majority of foreign direct investment in the mining sector is attributed to the Oyutolgoi project, which accounted for over 70% of investments during the specified periods.

Investment aims to foster economic or GDP growth by allocating capital today to generate future profits. One method for evaluating investment returns is the Incremental Capital-Output Ratio (ICOR). This indicator determines the amount of investment required to increase GDP by one unit. It can be calculated using the formula /1/:

$$ICOR = \frac{\Delta K}{\Delta Y} = \frac{\Delta K/Y}{\Delta Y/Y} = \frac{I/Y}{\Delta Y/Y} = \frac{I}{\Delta Y} \quad /1/$$

ICOR - The incremental capital output ratio

ΔK - Capital increase or capital change

ΔY – Output or GDP growth rate

I – Investment amount

Also, investment efficiency is determined by the inverse ratio of ICOR (1/ICOR).

This ratio represents the amount of added value per unit of investment.

ICOR – if it is low, the investment efficiency is high;

1/ICOR – the higher it is, the higher the return on investment.

Table 2. Efficiency and return on foreign investment

Year	GDP /at 2005 adjusted prices/	Foreign investment /at 2005 adjusted prices	Change in GDP	Return on investment (RPI)	Return on investment (1/RPI)
0	1	2	3	4=2:3	5
2001	2,287,290.3	294,769.0	65,600.1	4.49	0.22
2002	2,395,547.3	294,476.6	108,257.0	2.72	0.37
2003	2,563,346.5	347,511.1	167,799.2	2.07	0.48
2004	2,835,712.6	262,038.9	272,366.1	0.96	1.04
2005	3,041,405.7	360,533.1	205,693.1	1.75	0.57
2006	3,422,222.3	391,307.9	380,816.6	1.03	0.97
2007	3,662,949.2	344,576.1	240,726.9	1.43	0.7
2008	3,979,280.1	500,216.1	316,330.9	1.58	0.63
2009	3,929,126.4	779,432.2	-50,153.7	-15.54	-0.06
2010	4,183,013.8	1,047,184.6	253,887.4	4.12	0.24
2011	4,910,510.3	2,862,045.9	727,496.5	3.93	0.25
2012	5,529,344.5	2,513,720.7	618,834.2	4.06	0.25
2013	6,169,303.3	1,738,631.2	639,958.8	2.72	0.37
2014	6,667,831.8	1,239,972.4	498,528.5	2.49	0.4
2015	6,837,044.8	1,017,779.0	169,213.0	6.01	0.17
2016	6,931,218.8	1,338,598.5	94,174.0	14.21	0.07
2017	7,307,919.1	1,924,946.6	376,700.3	5.11	0.2
2018	7,822,426.8	2,002,046.3	514,507.7	3.89	0.26
2019	8,215,658.4	2,181,219.0	393,231.5	5.55	0.18
2020	7,857,334.5	2,248,167.8	-358,323.9	-6.27	-0.16
2021	7,984,832.4	1,649,133.6	127,497.9	12.93	0.08

Source: Researcher's estimation

The ROI turned negative in 2009 and 2020 due to the repercussions of the 2008 Global Financial Crisis and the effects of the COVID-19 pandemic on the economy. In 2021, the return on investment stands at 12.93, signifying that to boost GDP by 1 MNT, foreign investment must increase by 12.93 MNT. These findings indicate considerable variations in return-on-investment metrics. Such fluctuations stem from the significant shifts in foreign investment levels during the referenced years (refer to Table 2).

IV. An Econometric Analysis of Factors Affecting the Growth of Foreign Investment

The policy, business, market, resource, and efficiency determinants of foreign investment are from the United Nations Conference on Trade and Development (see Table 3). This category illustrates that foreign investment is a complex concept encompassing multifaceted relations at both macro and microeconomic levels.

Table 3. Classification of foreign investment determinants

Determining variables Examples	Policy variables
Business variables Determinants of market-related economics Resource related economic determinants	Tax policy, trade policy, privatization policy, macroeconomic policies Investment incentives Market size, market growth and market structure Raw materials, labor costs and technology
Economic determinants of efficiency	Transport and communication costs, labor productivity

Source: UNCTAD (2006)

Let's present the results of some research on the factors influencing foreign investment. M. Nonnemberg and M. Mendonça (2004) examined the determinants of foreign investment in developing countries. Through panel data analysis encompassing 38 developing nations, including those with transitional economies, from 1975 to 2000, they identified several determinants, including the education level, degree of economic openness, and variables associated with risk and macroeconomic performance, such as inflation, economic growth rate, and stock market performance. Similarly, B.K. Loksha and D.S. Leelavathy (2012) et al. explored factors affecting foreign investment in India, including macroeconomic indicators, foreign trade, liberal economic policies, market-related factors (such as market size, income level, and urbanization), and economic stability. Their research revealed the significance of both economic and political factors.

Let's consider that the factors influencing the growth of foreign investment are determined by the general equation of multi-factor regression /2/.

$$FDI_i = \alpha_0 + \sum_{j=1}^n X_{ji} + \varepsilon_i \dots \dots \dots /2/$$

Here: FDI- Foreign investment into country i

X_{ji}- j independent variable of country i

According to this formula, İ.Çeviş and B.Çamurdan (2007) selected 7 economic variables influencing foreign investment, including 1-Previous year's foreign investment, 2-Economic growth rate, 3-Wages, 4-Foreign trade amount, 5-Real interest rate, 6-Inflation rate, 7-Domestic investment are included.

Our research /3/ regression equation calculated the influence of foreign investment growth factors.

$$FDI = \alpha + \beta_1 GGD P + \beta_2 Inf + \beta_3 CAPF + \beta_4 Int + \beta_5 PrevFDI + \beta_6 TRADE + \beta_7 Wage \quad /3/$$

Here: GGD P-Economic Growth (Change in GDP)

Inf- Inflation rate,

CAPF-Percentage of Domestic Investment in GDP,

Int-Real interest rate,

PrevFDI-Previous year's share of foreign investment in GDP,

TRADE-Exports and imports as a percentage of GDP,

WAGE-Change in Wage

Indicators influencing the growth of foreign investment in our country from 2001 to 2021 were computed using the EVIEWS12 program, employing equation (3) (see Table 3). This involved converting exogenous variables such as GDP, investment, export, and import indicators into real indicators (at 2005 par prices).

Table 3. Results of econometric analysis

Dependent Variable: FDI				
Method: Least Squares				
Sample: 2001 2021				
Included observations: 21				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GGDP	6.754	2.9704	2.273	0.0406
Inf-	-0.0765	0.0395	-1.9369	0.0748
CAPF	-3.2229	5.2194	-0.6175	0.5476
Int	-0.0543	0.0286	-1.8982	0.0801
PrevFDI	-2.3529	1.0400	-2.2623	0.0415
TRADE	0.0078	0.0104	0.7468	0.4685
WAGE	-1.1627	1.2922	-0.8998	0.3846
C	1.2893	1.7781	0.7251	0.4812
R-squared	0.4611	Mean dependent var		0.1537
Adjusted R-squared	0.1708	S.D. dependent var		0.4476
S.E. of regression	0.4076	Akaike info criterion		1.3252
Sum squared resid	2.1596	Schwarz criterion		1.7231
Log likelihood	-5.9145	F-statistic		1.5887
Durbin-Watson stat	1.1951	Prob(F-statistic)		0.2235

According to the calculations, economic growth, the share of exports and imports in GDP have a positive effect on the growth of foreign investment, while inflation, real interest rate, wage level, and the share of previous year's investment in GDP have a negative effect (refer to Table 3).

İ.Çeviş and B.Çamurdan (2007) examined the impact of foreign investment on 17 countries with developing and transition economies and computed the results, indicating a negative effect of the inflation rate.

According to our calculations, the directions of positive and negative changes in foreign investment growth align with theoretical expectations, except for the share of investment in the GDP of the previous year. The negative impact of this indicator in our country may be attributed to significant fluctuations in foreign investment indicators annually. Economic growth emerged as the most influential indicator, while the share of exports and imports in GDP, inflation rate, and real interest rates exhibited weaker influences.

A. Moudatsou and D.Kyrkilis (2009) conducted research demonstrating a positive and robust relationship between economic growth and foreign direct investment in developing and developed countries across Europe and East Asia. This relationship holds true for our country as well—according to our research, economic growth exerts the strongest impact on the growth of foreign investment.

V. Conclusion

According to annual research conducted by international organizations, our country demonstrates relatively low performance in terms of economic competitiveness, the foreign investment environment, and other indicators. Consequently, there is a pressing need to enhance the legal framework for foreign investment and develop and implement effective policies to address the challenges faced by foreign investors.

In our country, the mining and extraction sector predominantly attracts foreign investment, while other sectors, particularly the processing industry, exhibit inadequate performance. Structural changes in the economy are essential, particularly to mitigate excessive reliance on the mining sector and to diversify the economic base. The efficiency and returns of foreign investment for the years 2001-2021 have been computed. According to research findings, these indicators display significant fluctuations.

Factors influencing the growth of foreign investment were analyzed using a multivariate regression equation. Based on the calculation results, economic growth, the share of exports and imports in GDP, have a positive effect on foreign investment growth, while inflation, real interest rate, wage level, and the share of previous year's investment in GDP have a negative effect. Economic growth emerged as the most influential factor affecting foreign investment growth.

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MSGM-34

Relationship between Oral Health Knowledge and Dental Caries During Pregnancy

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Abstract - The risk of dental caries and its complications, as well as periodontal diseases increases during pregnancy due to factors such as hormonal changes in the body, diet and lack of knowledge about oral health. The aim of the study was to study the relationship between oral health knowledge and dental caries in pregnant women. Cross-sectional data was collected from 1758 pregnant women, from the central, western, eastern regions of the country. A specially designed questionnaire was used to assess the demographic variables and oral health knowledge. A clinical examination was done according to World Health Organization 2013, the intensity and prevalence of dental caries, gingival, periodontal, oral hygiene and mucosal status were calculated. Among 1758 participants we examined 792 pregnant women data. The prevalence of dental caries was 89.1%, and the intensity was 5.77 ± 4.56 The Decayed, Missing, and Filled Teeth (DMFT). When evaluating the level of oral health knowledge of pregnant women, 64.9% had insufficient or poor knowledge, 33.46% had average knowledge, and 1.64% had sufficient or good knowledge. According to regression analysis, when knowledge increases by 1 point, the number of decayed teeth decreases by 0.2 teeth ($p=0.001$), and the index of filled teeth increases by 0.09 teeth ($p=0.007$). The results of the study show that increasing the oral health knowledge of pregnant women can reduce dental caries in pregnant women and children.

Keywords - Gum disease, oral health, tooth decay, pregnancy

1. Introduction

Oral health is an important aspect of overall health, and it becomes even more crucial during pregnancy [1]. Pregnant women experience hormonal changes that can affect their oral health, making them more susceptible to dental problems such as gum disease and tooth decay [2]. During pregnancy, the increased levels of hormones such as progesterone and estrogen can lead to changes in the oral cavity, making pregnant women more prone to gum inflammation, also known as pregnancy gingivitis. This condition can result in swollen, tender gums that bleed easily, leading to discomfort and potential oral health issues if not properly managed [3]. Moreover, the dietary and lifestyle choices during pregnancy can also impact oral health. Pregnancy cravings and changes in eating habits may result in increased consumption of sugary foods and drinks, putting pregnant women at a higher risk of developing tooth decay and cavities [4]. It is also important to consider the impact of oral health knowledge on pregnant women's oral health practices. Understanding the relationship between oral health status and the level of oral health knowledge among pregnant women can provide valuable insights into the effectiveness of educational programs and interventions aimed at promoting oral health during pregnancy. By delving

deeper into the factors that influence oral health knowledge and behaviors in pregnant women, healthcare providers and policymakers can tailor interventions to address specific needs and challenges, ultimately leading to improved oral health outcomes for both the mother and the baby [5], [6].

The risk of dental caries and its complications, as well as periodontal diseases increases during pregnancy due to factors such as hormonal changes in the body, diet and lack of knowledge about oral health [7-9]. According to the data released by the Ministry of Health of Mongolia, the prevalence of dental caries among pregnant women is 96.5%, and 86.5% among children, which is a very high indicator. Oral disease-causing bacteria are transmitted from mother to child, and the mothers' inadequate knowledge of this matter increases the risk of dental caries in children [10]. According to a study conducted in Shashemene, Ethiopia in 2021, 34.6% of pregnant women had a sufficient level of oral health knowledge, while in Mongolia, the correlation between oral health knowledge and caries among pregnant women has not been studied yet, which was the reason for conducting this study.

Aim

To study the relationship between oral health knowledge and dental caries in pregnant women

2. Material And Methods

A descriptive, cross-sectional study conducted with the approval of the Research Ethics Committee of Mongolian National University of Medical Sciences with the reference number 2021.06.04/2021/3-07 and carried out following the rules of the Declaration of Helsinki revised version of 2013. The sample of the study consists of a total of 1758 pregnant women, from the central, western, eastern regions of the country. The data was collected based on the main maternal central hospitals (National Center for Maternal and child Health Of Mongolia, First Maternal Hospital), 6 districts health centers and regional diagnostic centers (Hovd, Dornod Province Regional Diagnostic Centers). Written informed consent was obtained from all participants who agreed to take part in this study.

Questionnaire:

Prior to a clinical examination, demographic information regarding age, education, occupation, socioeconomic status and residence were obtained from the participants. A questionnaire consisting of a general and main part was used to evaluate the oral health knowledge of pregnant women. The close-ended questionnaire was structured in 4 main blocks:

1. General information
2. Pregnancy information
3. Oral health attitude and practice
4. Oral health knowledge questions

The questionnaires were distributed to pregnant women in the outpatient department waiting area, with a duration of 15 minutes. A questionnaire consisting of a general and main part was used to evaluate the oral health knowledge of pregnant women. The first part consists of general information. The main part consists of 15 pre-prepared closed questions about the knowledge of oral health among pregnant women, and the correct answer above 11 is rated as "adequate", 6-10 as "moderate", and below 5 as "insufficient".

Clinical Examination:

According to the recommendations of the World Health Organization 2013, the intensity and prevalence of dental caries, gingival, periodontal, oral hygiene and mucosal status were calculated using disposable instruments.

Statistical Analysis

Data was analyzed using the STATA 25 software program. Descriptive statistics such as mean, standard deviation, and percentage were used. Association was evaluated using chi-square. Any p value less than 0.05 was considered significant.

3. Result

Among 1758 participants we examined 792 pregnant women data. Table 1 describes the socio-economic data collected in the survey. The age range of the women was 16 to 45 years, with a mean age of 29.20 ± 5.68 years. The prevalence of dental caries was 89.1%, and the intensity was 5.77 ± 4.56 The Decayed, Missing, and Filled Teeth (DMFT) (Fig 1). When evaluating the level of oral health knowledge of pregnant women, 64.9% had insufficient or poor knowledge, 33.46% had average knowledge, and 1.64% had sufficient or good knowledge (Fig 2). When assessing the relationship between caries intensity and knowledge, $r = -0.10$, $p = 0.003$, or a negative correlation. A positive correlation was observed between the level of knowledge compared to the number of teeth filled with fillings ($r = 0.08$, $p = 0.014$), and the level of knowledge was positively correlated with the number of teeth extracted, but it was not statistically significant ($p = 0.34$). According to regression analysis, when knowledge increases by 1 point, the number of decayed teeth decreases by 0.2 teeth ($p = 0.001$), and the index of filled teeth increases by 0.09 teeth ($p = 0.007$).

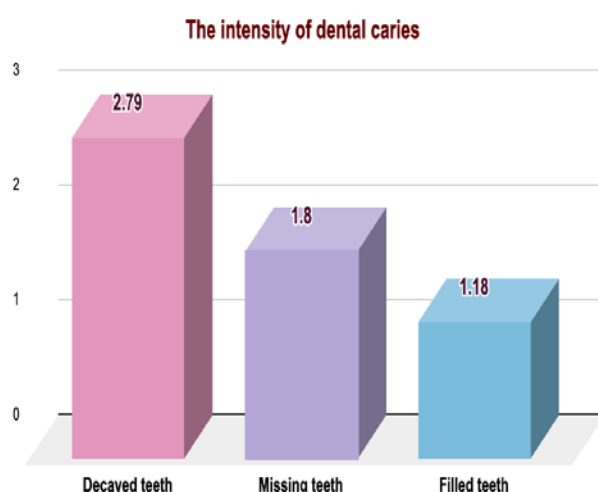


Fig. 1 The intensity of dental caries in pregnant women

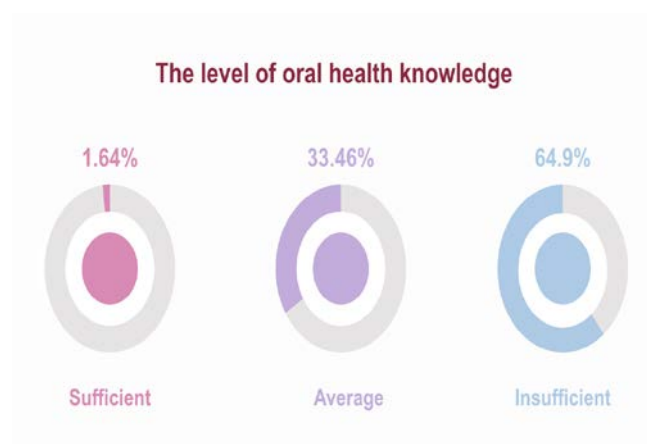


Fig. 2 The level of oral health knowledge in pregnant women

Table 1. Baseline characteristics of the participants

	Urban area	Rural area	All
	451 (57.42)	341 (42.58)	792 (100)
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD
Mean age	28.58 $\pm$ 5.64	29.91 $\pm$ 5.66	29.20 $\pm$ 5.68
Gestational week	24.81 $\pm$ 10.3	23.33 $\pm$ 10.74	24.11 $\pm$ 10.56
Number of pregnancies	2.57 $\pm$ 1.54	2.89 $\pm$ 1.62	2.7 $\pm$ 1.5
Prenatal care visit	9.17 $\pm$ 4.95	7.74 $\pm$ 5.41	8.51 $\pm$ 5.21
Education level			
Illiterate	15 (3.3)	39 (11.4)	54 (6.8)
High School	80 (17.7)	106 (31.2)	186 (23.4)
College	78 (17.3)	93 (27.2)	171 (21.5)
Bachelor's degree and above	278 (61.7)	103 (30.2)	381 (48.3)
Occupation			
Unemployed	49 (10.8)	45 (13.1)	94 (11.8)
Part-time employed	83 (18.4)	53 (15.5)	136 (17.1)
Self-employed	96 (21.4)	42 (12.3)	138 (17.4)
Entrepreneur	11 (2.6)	6 (1.7)	17 (2.1)
Farmer	4 (0.8)	86 (25.2)	90 (11.3)
Full-time employed	116 (25.7)	67 (19.6)	183 (23.1)
Other	92 (20.3)	42 (12.6)	134 (17.2)
Marital status			
Single	56 (12.4)	74 (21.7)	130 (16.4)
Married	267 (59.2)	166 (48.6)	433 (54.6)
Cohabitant	121 (26.8)	95 (27.8)	216 (27.2)
Other	7 (1.5)	6 (1.9)	13 (1.8)

4. Discussion

The present study revealed that the intensity and prevalence of dental caries, gingival, periodontal, oral hygiene and mucosal status were higher in pregnant women. These findings were consistent with the study done by George A et al. and others [7], [11]. Our study participant's age range was 16 to 45 years. The percentages obtained reveal that 51.3% of respondents were aged 16 to 29 years. Thereby, these results point to a group of predominantly young mothers, so they are more likely to learn and be more aware with regard to attitudes towards the health of their children [8].

Research has shown that there is a relationship between oral health status and oral health knowledge among pregnant women. A study conducted among pregnant women revealed that a significant number of participants had poor oral health knowledge, including insufficient knowledge about dental visits, oral hygiene maintenance during pregnancy, and the potential impact of oral health on pregnancy outcomes. This lack of knowledge was reflected in their oral health status, with a high prevalence of periodontal disease and dental caries among the participants. This suggests that a lack of oral health knowledge can contribute to poor oral health status during pregnancy [12]. Furthermore, the study also found that pregnant women with higher levels of oral health knowledge were more likely to engage in oral health-promoting behaviors, such as regular toothbrushing, flossing, and dental visits [13]. These findings highlight the importance of educating pregnant women about proper oral health practices and the potential impact on their overall health during pregnancy. Further research into the specific factors influencing oral health knowledge and practices among pregnant women is essential for developing

targeted interventions. Sociodemographic factors such as education level, income, and access to dental care can significantly influence oral health knowledge and behaviors [5], [14]. For example, women with lower socioeconomic status may face barriers to accessing dental care and educational resources, leading to a lack of oral health knowledge and suboptimal oral health practices.

Cultural beliefs and attitudes towards oral health can also play a role in shaping pregnant women's knowledge and behaviors. Understanding the cultural context and beliefs surrounding oral health during pregnancy is crucial for designing culturally sensitive educational materials and interventions that resonate with diverse populations [13-14]. In addition to sociodemographic and cultural factors, psychological and emotional factors such as dental anxiety and fear of dental procedures can impact pregnant women's oral health behaviors. Addressing these psychological barriers through targeted education and support can help alleviate fears and promote positive oral health practices during pregnancy [14].

Furthermore, healthcare providers play a critical role in educating and empowering pregnant women to maintain optimal oral health. Integrating oral health education into prenatal care visits and providing tailored guidance based on individual risk factors can significantly improve oral health knowledge and practices among pregnant women [8], [15]. Overall, a comprehensive understanding of the multifaceted factors influencing oral health knowledge and behaviors in pregnant women is crucial for developing effective interventions that can ultimately improve oral health outcomes for both mothers and their babies. More research and targeted initiatives are needed to address the gaps in oral health knowledge and practices among this vulnerable population.

5. Conclusion

In our country, oral health knowledge among pregnant women is insufficient, so further attention is needed at the policy level. The results of the study show that increasing the oral health knowledge of pregnant women can reduce dental caries in pregnant women and children.

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MSGM-35

Dental Caries Association Between Socioeconomic and some Other Factors in Pregnant Women in Mongolia

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Abstract: Dental caries is a multireasonable infectious disease. WHO reported that 3.5 million people in the world suffer from dental caries. According to the study conducted on 2000 pregnant women in our country in 2022, the prevalence of tooth decay is 95%, or 9 out of 10 women have dental caries. This number is decreasing as the year passes by in other countries, however, in less developed countries, it is still increasing. Many researchers mentioned that socioeconomic factors affect dental caries. The lack of research on the relationship between oral diseases, especially dental caries, among pregnant women with valid factors such as education and income is the reason for conducting this study in Mongolia. A total of 453 pregnant women were examined in total out of them 242 were from the capital city Ulaanbaatar and 211 were from urban areas ($p=0.013$). The average age of the participants was 29.20 ± 5.68 . By marital status 4.86% were never married, 49.45% were married, 43.27% were not married, and 2.43% did not respond. The average income was 867839 MNT. The result of the educational status shows that 1.77% of the participants had no education at all, 37% had a secondary education, 11.26% had a diploma, and 49.97% of them had a higher education. The prevalence of dental caries was 88%, and caries intensity was 6.42 ± 4.76 DMFT. Oral health-related knowledge and attitude were insufficient for the majority of participants. The number of decayed teeth is inversely related to education ($R=-0.12$ $p=0.007$), number of decayed teeth and knowledge are also inversely related to each other ($R=-0.12$ $p=0.005$). A positive correlation was observed between the number of filled teeth and income ($R=-0.17$ $p=0.002$).

BTOT-37

The Effect Topography in Prediction of Wheat Yield

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Abstract: Topography significantly influences soil quality and agricultural productivity. This study presents the findings of research conducted in the central cropland region of Mongolia, focusing on topographic factors such as slope, aspect, and elevation derived from SRTM DEM (30 m resolution), along with the calculation of vegetation indices including NDVI, SAVI, and GNDVI using Landsat 8 satellite data from August 2020.

The survey covered over 8000 hectares of cropland, totaling 693.0 thousand hectares. Statistical analysis was performed to correlate wheat yield data for the year with topographical factors, and validation was conducted in 324 sample plot areas within the Selenge and Tov provinces.

The remotely sensed vegetation indices revealed the following results: NDVI ranged from -0.4 to +0.88 based on Landsat 8 satellite data from July 8, 2020. The predicted crop yield, derived from satellite data, ranged from 6.2 to 13.9 centners per hectare.

To assess the impact of land surface characteristics on crop yield, 324 random points were selected as control samples. A strong correlation of 0.79 was observed between the slope of the land surface and crop yield. Furthermore, deviations in slope ranging from 0 to 6 meters were associated with yield differences of 3 to 5 centners per hectare.

This study highlights the importance of considering land surface factors in crop management practices, as variations in topography have discernible effects on crop yield. Consequently, there is a clear need for improved crop management strategies to optimize agricultural productivity in the region.

SSBA-40

Exploring the Impact of Entrepreneurial Psychology and Behavior on Management and Performance in the Food Industry

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The restaurant and bar business markets, which shrank sharply after the outbreak of Corona-19 in 2019, are seeing a slight increase in sales compared to the previous year as quarantine tensions eased in 2021. Although there are differences by industry, the production index of restaurants and bars is also showing an upward trend compared to the previous year, starting in the first quarter of 2021.

In this regard, this study aimed at restaurant founders in the Gyeongsangnam-do region. The founder's psychological characteristics (desire for achievement, risk-taking propensity, creativity) and behavioral characteristics (reliability, self-efficiency, coping ability) were found to be related to operation and service management. We will analyze its impact and how this business management affects business performance. Unlike existing studies that analyze whether restaurant business start-up characteristics directly affect business performance, this study first analyzes the relationship between the founder's psychological and behavioral characteristics and business management. Then it analyzes how these influences affect business performance. There is a difference in It is expected that the results of this study will be used as basic information for successful business management by restaurant entrepreneurs.

This study targeted restaurant entrepreneurs who run a food business in the Gyeongnam region.

The specific research methods of this study are as follows. First, a frequency analysis was conducted to confirm the general characteristics of restaurant founders and the characteristics of the sample. Second, reliability analysis, exploratory factor analysis, primary confirmatory factor analysis, and secondary confirmatory factor analysis are performed to confirm the reliability and validity of the items. In addition, correlation analysis was conducted to confirm the discriminant validity of the items. Third, path analysis was conducted to verify the hypotheses of the study.

The analysis results of this study are as follows. First, hypothesis 1-1 that psychological characteristics significantly affect operation management was adopted. Hypothesis 1-2 that psychological characteristics significantly affect service management were accepted. These results show that restaurant start-up departments' operational and service management is more formed due to psychological characteristics, such as the desire for achievement, risk-taking propensity, and creativity. Second, hypothesis 2-1 that behavioral characteristics significantly affect operation management, was adopted. Hypothesis 2-2, that behavioral characteristics significantly affect service management, was adopted. These results show that restaurant start-ups' operational and service management are further formed due to behavioral characteristics, reliability, self-efficiency, and coping ability. Third, hypothesis 3 that operation management significantly affects business performance was adopted. These results indicate that business performance is further formed due to operational management. Fourth, hypothesis 4 that service management significantly affects business performance was adopted. These results indicate that business performance is further formed due to service management.

Key words : Characteristics of Entrepreneurs, Service Operation, Business Management, Business Performance

1. 서론

2019년 코로나19 발생 이후 급격히 위축되었던 음식점 및 주점업 시장은 2021년 방역 긴장감이 완화된 가운데 전년 대비 매출액 규모가 소폭 증가하고 있다. 업종별 차이는 존재하나 음식점 및 주점업 생산지수 또한 대체로 2021년 1분기를 기점으로 전년 대비 상승세를 보이고 있다. 2021년 연간 외식업 종사자 수는 전년 대비 감소하였으나 4분기부터 뚜렷한 증가세를 나타내고 있으며 음식서비스의 온라인 쇼핑 비중은 모바일거래를 중심으로 전년도에 이어 꾸준히 확대되고 있다.

KREI(한국농촌경제연구원)의 2021년 보고서에 따르면, 음식점 및 주점업의 2017~2019년 기간 동안 매출액은 연평균 3% 증가세를 보였으나 코로나19 발생으로 인한 사회적 거리두기 시행 등의 영향으로 2020년 음식점 및 주점업의 실질 매출액은 2019년 대비 17% 감소한 약 108조 원으로 추정된다. 2021년 음식점 및 주점업의 실질 매출액은 110조 원으로 2020년보다는 1% 증가하여 코로나19 영향으로부터 약간의 회복세를 나타낸 것으로 예측되지만, 아직은 2019년에 비해 낮은 수준이다. 2021년 음식점 및 주점업 인허가 업체 수는 1,074개로 2019년 대비 3%, 2020 대비 1% 감소하였지만, 같은 해 폐업 업체 수는 2019년 대비 33%나 증가한 466개로 집계되었다(한국농촌경제연구원, 2021).

한편, 온라인 쇼핑물 음식서비스 거래액은 2019년까지 분기별로 2~8%의 증가율을 나타내고 있었으며 꾸준히 증가하던 온라인 거래액은 코로나19 발생을 계기로 비대면 방식이 급격히 늘어나 2019년 9조 7천억 원에서 2021년 25조 7천억 원까지 164%나 신장되었다. 이는 전체 온라인 쇼핑물 거래액에서 음식서비스 거래액이 차지하는 비중 또한 2021년 14%로 전년 대비 3%p 상승한 것으로 나타났다(한국농촌경제연구원, 2021).

외식창업업체의 경영관리개선을 위한 정책 사업을 개발하고 지속적으로 정보 제공을 통해 외식창업의 무분별한 진입을 방지하고 경영관리개선을 유도하는 것을 최종 목적으로 하고 있으며 외식창업 정보 부재로 인한 비효율적인 투자와 사업실패가 증가하고 있다고 하였다. 외식창업의 현 상황은 외식창업 희망자들 및 예비창업자들의 증가와 외식업종 및 업태의 다양화 및 글로벌화로 인해 외식창업의 시장은 확대되고 있다. 여기서 내수 시장의 빈약과 소비의 양극화, 낮은 진입장벽, 외식업체 간 과감한 경쟁의 지속 등으로 저부가가치 산업구조를 벗어나지 못하고 있는 실정이다.

외식창업에 관한 선행연구 동향을 살펴보면, 대부분 외식창업에 관한 선행연구들은 외식창업 교육프로그램, 외식창업교육특성, 외식창업 교육학습, 외식창업교육품질(이상권, 2012; 정선미, 2015; 신혜성·안윤영, 2015; Susana et al., 2015; 최명철 등, 2016; 황규삼, 2017; 최동국, 2017; 김기영과 조원영, 2017; Maria et al., 2018; 최동국, 2020; Davide 2021; 이선경과 임현철, 2022) 등의 창업교육에 관한 연구들이 있다.

또한 외식창업의 경영관리활동, 경영성과와 경영형태선택(유희경, 2013; Arnold & Norma, 2014; 김태훈·홍효석, 2014; 김예주·이형룡, 2016; 이종성 등, 2017; Nina et al, 2017; 이무선, 2017; 이희혁·유영진, 2019; Maria Joy et al., 2022) 등의 외식창업 경영관련 연구들이 있으며, 외식창업 자기효능감, 창업동기, 창업만족(양재장·남중현, 2015; Farid Ullah et al., 2016; 고봉호·신형철, 2018; 김진희 등, 2019; Muharman and Wardana, 2020; 조우제, 2020; 윤승용 등, 2022) 등에 관한 연구들이 존재한다. 그 외 외식창업의 창업자태도, 창업의도, 창업의지(김영국, 2013; 김예주·이형룡, 2016; 최명철 등, 2016; 김진희 등, 2019; 최동국, 2020; 이선경·임현철, 2022) 등의 창업행동에 관한 다양한 외식창업 연구들로 이루어지고 있다.

한편, 외식창업 선행연구들을 연구대상별로 살펴보면 외식전공 대학생(권영국·윤혜현, 2013; 최명철 등, 2016; 김정수, 2017), 외식창업 예비창업자(박영수·고재운, 2011; 박대섭, 2018; 어운선, 2019) 등에 논점을 둔 연구가 집중적으로 연구되었다. 이러한 외식창업에 관한 다양한 창업분야의 연구들이 이루어지고 있으나 조금 더 구체적이고 체계적인 연구

와 운영방안이 필요한 실정이다.

이에 본 연구는 경남지역의 외식창업자를 대상으로 창업자의 심리적 특성(성취욕구, 위험감수성향, 창의성)과 행위적 특성(신뢰성, 자기효능감, 대처능력)이 경영관리(운영관리, 서비스관리)에 어떤 영향을 미치는지를 분석하고, 이러한 경영관리는 사업성과에 어떠한 영향을 미치는지를 분석할 것이다. 외식창업 특성요인들이 직접적으로 사업성과에 미치는지를 분석하는 선행연구와 달리 창업자의 심리적 특성과 행위적 특성과 경영관리 간의 관계를 먼저 분석하고 이들의 영향관계가 사업성과에 어떤 영향을 미치는지를 분석한 것에 차이점이 있다. 본 연구결과가 외식업 창업자들에게 성공적인 경영관리를 위한 기초 정보로 활용되기를 기대한다.

2. 이론적 배경

2.1 창업자의 개념 및 특성

창업이란 말은 원래 창업자 자신의 사업계획과 아이디어를 가지고 새로운 혁신의 방법으로 재결합하여 새로운 사업을 시작하는 것이다(Schumpeter, 1934). 하지만 창업을 한다는 것은 위험과 불확실성의 상황 하에서 이윤추구를 하는 것이며(Dollinger, 1995), 창업자의 목표와 사업기획, 경영자원을 확보한 후에 시도되는 것이다. 여기서 창업자는 기업을 처음 세워 운영하는 사람으로 설립자로 명칭하기도 한다. 일반적으로 설립자, 기업가 및 소유주와 혼용되어 사용되는 등 여러 가지 명칭으로 사용되고 있다. 창업자란 수행하다, 시도하다, 모험하다의 의미를 가지고 있는 프랑스어 ‘Entreprendre’에서 유래되었다(구언회, 2006). 이재선 등(2001)은 창업가 및 기업가란 ‘기회가 있을 때 현재 가능한 자원의 종류나 양을 고려하지 않고 새로운 조직을 만들어 그 기회를 사업화하는 사람’이며, 창업과정을 기회포착에서부터 기업의 설립까지 필요한 모든 기능과 활동을 말한다고 주장하였다. 안정적인 창업은 개인 및 사회의 경제 발전과 일자리 창출 등과 같은 긍정적인 성장을 기여한다. 따라서 한국 경제의 활성화를 위한 경제적 유지를 되찾기 위해서는 잠재적 창업가들의 사업에 대한 적극적인 의지가 중요하다. 사업을 시작하고자 하거나 준비하고 있는 예비창업자는 그 성격에 따라 창업에 대한 태도를 다르게 보이고 있으며 이는 창업이 진행되었을 때 성과에 큰 영향을 미친다.

유봉호(2015)의 연구에서 창업이라는 특정의 행동을 하는데 있어서 자기결정성 동기의 역할을 강조하였다. 창업을 하려는 의지는 물질적 보상과 자신의 특정한 행위를 통한 주변인들에게 인정을 받고 싶어 하는 욕구를 나타내는 외재적 동기 요소뿐만 아니라, 자신의 목표, 아이디어 등을 실현시켜 보고 싶어하는 내재적 욕구를 포함하고 있다고 하였다. 창업자와 유사한 개념인 경영자는 기업목표 달성을 위해 조직의 경영자원을 계획하고 조직하며, 지휘, 통제의 관리기능을 통해 조직을 효율적으로 활용하는 사람이다. 창업자와 마찬가지로 경영자 또한 시장기회를 탐색하는 등 정보 탐색자로서의 역할 수행 및 혁신과 위험감수를 추구하기도 한다. 즉 기회탐색, 혁신, 위험추구 등 창업가의 본질과 공통된 측면도 가지고 있다. 이로 인해 창업가와 경영자는 서로 배타적인 영역도 가지면서 공통된 영역도 가지고 있다고 보는 것이 보편적인 시각이다(강성일, 2007).

1980년대부터 창업가 특성에 대한 연구들은 활발하게 진행되어 왔다. 학자들의 관심은 성공한 창업가에게는 일반사람 보다 남다르고 특별한 특성이 있다는 것을 전제로 하여 그러한 요소들을 발굴하려고 하는 것이었다(Sexton & Bowman, 1985). 또한 성공한 창업가들은 새로운 신기업의 경영성과를 결정하는 가장 중요한 요소는 창업가의 자신이라고 하였다(Herron & Robinson, 1993). 창업은 혁신성, 위험감수성을 통한 프로젝트의 수행이며(박대섭, 2004), 창업아이디어를 통한 사업성, 사업계획 등의 수행과정이다. 또한 강한 성취욕,

결단력, 인내심, 문제해결 능력, 피드백 활용, 위험공유 및 감수능력 등의 내용이 창업자의 주요특성으로 나타났다(Timmons, 1999).

2.1.1 심리적 특성

Gartner(1985, 1989)는 창업자의 심리적 특성이 ‘창업자와 비창업자를 구별하는 특징’뿐 아니라 ‘성공에 영향을 미치는 개인특성’으로 주목을 받아왔다고 하였다(정성한·김해룡, 2001; 김완재, 2007; 김의근·배금연, 2010; 정성영, 2011). Gartner(1985)는 이 특성들에 대해서 ‘기업가 정신의 현상을 설명하기엔 불충분하다’며 그의 1994년 연구에서 창업자의 행동(behavior)이 창업자를 알아보는 것이며, Stewart et al.(1996)은 사업을 설립하는 행동이야말로 기업가 정신을 정의하는 것이라 하였다(Becherer & Maurer, 1999). 일반적으로 창업자의 심리적 특성에 관한 연구들은 성취욕구, 통제위치, 위험감수성향, 모호성에 관한 구성요인들을 많이 살펴보았다. 여기서 성취욕구는 창업가가 가져야 할 주요 핵심적인 특성이며 사업에 대한 끊임없는 노력과 인내 또는 사업에 대한 몰입으로 설명되고 있으며, 그 어떤 것들을 신속하고 가능한 잘 이해하려고 하는 바람과 경향으로 정의하고 있다(Jung & Kim, 2001). 그리고 성취욕구는 Gartner(1989)에 의하면 창업자가 창업할 의도는 다른 사람에 비해 역량 발휘 성향이 높으며 목표 달성이 빠르다고 할 수 있으며, 그 어떤 일을 신속하게 이해하고 실행하는 것을 말한다(권오범, 2016). 이는 하고자하는 의욕과 욕심이 높으면 창업할 의도에 영향을 준다고 할 수 있으며 사업을 하는 사람은 일반 사람보다 성취감이 높다고 할 수 있다. 창업자의 심리적 특성이 새로운 조직을 만드는 의미로서 창업에 대한 설명이 유효하지 않다는 판단 하에 개인의 환경적 요인에 의해 기업가적 기회를 만들 수 있다는 주장으로서 개인의 환경적 요인에 대한 연구들은 이루어졌다. 창업은 단순히 한 두개 요인에 의해 이루어지는 것이 아니라 개인과 환경의 상호작용에 의해 이루어지는 것으로 성별, 창업가 부모, 창업교육, 경험 등과 같은 개인의 환경적 요인과 개인적 목표, 외부적 사업 환경과 아이디어 등이 기업가적 행동에 대한 의사결정을 만들어 낸다고 보았다. 창업에 있어서 심리적 특성은 연구자마다 다르게 연구하고 있지만 본 연구에서는 창업의 중요한 측정 구성요인으로 성취욕구, 위험감수성향, 창의성에 대하여 논하고자 한다.

2.1.2 행위적 특성

창업자의 행위적 특성은 창업활동에 있어 행동적 요인의 차별화된 특성을 적용한 개념이며, 이는 한 개인을 둘러싼 환경 및 배경과 상호작용하는데 있어서 그 사람의 특유 방식이며, 비교적 장기적으로 일관되게 행동하는 행위적 특성들을 말한다. 신뢰성은 창업자가 대내외적으로 믿음을 갖도록 하는 행동적 특성이라고 볼 수 있으며 기업의 성장단계와 상관없이 사업 성공을 위해 매우 중요한 요인 중 하나이다(Lee & Jang, 1998). Herron & Robinson(1993)은 창업자의 특성을 창업자가 갖고 있는 동기부여와 기술로 명명하고 창업자의 동기부여를 행동을 결정짓는 중요한 요인이라고 하였다. 창업자의 행위적 특성은 창업 동기, 리더십, 실패 가능성 및 위험성에 대한 대처노력이 있고 이러한 요소들이 중요한 요인으로 해석되고 있다(박영배·윤창석, 2001). 이춘우(1999)의 선행연구에서는 창업자의 역량을 환경에 대한 탐색, 사업과 관련된 기술적 능력, 시장기회의 포착능력, 유망한 기회 인지와 선택, 과업수행 성과평가, 조직구성원들을 이해하고 동기부여 시킬 수 있는 능력, 고객관리 능력과 대인관계로 다양하게 연구하였다. 불확실성 속에서 새로운 비전을 제시하고 조직구성원에게 강한 동기를 부여하며 기회를 모색하고 포착해야 하는 등의 능력은 창업자에게 매우 중요한 능력이다. 여러 선행연구에서는 비전은 동기부여의 한 영역으로 미래의 상태에 대한 인지구조와 이미지로서 기업성공의 핵심적인 요인으로

강조되고 있으며(Collins & Lazier, 1992), 창업자의 동기부여가 창업성가에 중요한 영향을 미친다고 하였다(Herron & Robinson, 1993).

2.2 창업자의 경영관리의 개념

경영관리란 통상적으로 조직목적을 효과적, 효율적으로 달성하기 위해서 기업 활동을 계획, 조직, 지휘, 조정, 통제하는 관리과정이라고 하는데, 이것은 경영관리의 형식적 측면에서 기술한 것으로 순환적 프로세스를 강조한 개념의 정의다(서명길, 2018). 일반적으로 경영관리란 경영목적을 달성하기 위해서 수행되는 모든 활동이 합리적으로 수행되도록 계획, 조직, 충원, 지휘, 통제하는 과정을 의미한다고 볼 수 있다(Hong, 1999). 외식업에 있어서 경영관리란 외식점포를 운영하는데 필요한 사람, 상품, 자본을 효과적으로 활용하여 목적을 달성하는 기술을 의미하는 것으로 여기에는 비용관리만 국한되는 것이 아니라 사회에 대한 공헌 부분과 경영효율을 실현하는 것까지 포함한다(Shin & Park, 1999). 조동성(2007)은 경영관리란 기업을 내부적으로 어떻게 운영할 것인가에 관한 문제이며, 동기부여와 리더십, 생산운영관리, 마케팅관리, 인사관리, 재무관리, 국제경영, 회계, 경영정보시스템으로 설명하고 있다. 이처럼 경영관리에서 중요한 것은 무엇을 중점적으로 경영 관리한다는 것인지에 대한 내용적 측면이며, 경영관리의 내용 내지 목적이다. 서울대학교 경영연구소(1994)에 의하면 경영관리는 관리활동 수행과정에서 일정한 목표를 보다 효과적이고 효율적으로 성취하기 위하여 계획, 조직, 지시, 조정, 통제 등의 관리기능을 통해 업체의 모든 자원 즉, 인적·물적 자원, 기술, 자본 등을 기업 경영의 모든 활동에 배분, 통제하는 프로세스라고 할 수 있다. 여기의 일정한 기업목표 또는 조직목표가 바로 부가가치 창출, 이익 창출이며 이것은 직접적으로는 생산과 마케팅을 통하여 이루어진다. 외식업은 생산과 제공의 기술적인 면에서 매우 복잡한 특징을 가지고 있으며 사회, 경제적인 외부요인들과 상품과 직원관리, 영업 관리를 포함한 내부적인 요인들이 복합적으로 연결된 사업이므로 외식사업의 경영관리는 시장규모의 확대, 새로운 컨셉의 등장, 경쟁심화 등이 진전되면서 사업규모에 관계없이 적정 투자비용 유지, 운영관리 비용 최소화, 객단가 최대화 전략 및 회전을 향상을 통한 매출증대 등 경영효율화 실현의 근간이 되고 있다. 이러한 외식업의 경영관리는 근본적으로 차별화되고 집중화된 요소가 창업기업의 성과에 중대한 영향을 미친다고 본다. 차별화되고 집중화된 요소로서 외식업 창업의 경영관리 요소는 크게 운영관리 및 서비스관리전략 등으로 구분해 볼 수 있겠다.

2.3 사업성가의 개념

성가의 측정은 항상 인과관계가 불명확하기는 하나, 만족과 밀접하거나 지대한 영향이 있을 것이라는 가정 하에 거의 반세기동안 학자들과 경영자들 사이에서 주된 관심사였다(김지윤, 2000). 성가의 기준은 기업이 경영 목표에 얼마나 도달하였나를 볼 수 있는 척도이며, 경영목표의 달성도를 나타내는 것이라고 할 수 있다. 기업의 성과를 정의하여 측정하는 것은 성과 향상을 위한 기본 단계이므로 성과측정은 매우 중요한 의미를 갖고 있다. 기업성가는 일반적으로 재무적 성과(총자산순이익률, 자기자본순이익률, 매출액성장률, 매출액 수익률 등)와 비재무적 성과(종업원증가율, 사회기여도, 기업의 학습정도, 성장잠재력 등), 객관적 성과와 주관적 성과로 구분된다(Stuart & Abetti, 1987). Covin & Slevin(1990)의 경우, 벤처기업의 성과로 매출액, 매출성장률, 매출액이익, 투자수익률 등에 대한 중요도와 각각의 재무기준에 대한 창업인의 만족도를 통해 주관적성가를 사용하였는데 그 이유는 벤처기업이 재무자료 제공을 망설이고, 객관적 재무자료가 공개되어 있지 않아 정확성이 결여되며, 정확한 재무자료라 해도 소기업의 자료는 해석하기 어렵고, 재무성과 자료의 절대치는 산업관련 요소에 큰 영향을 받기 때문이다. 과거부터 이어온 경영성가의

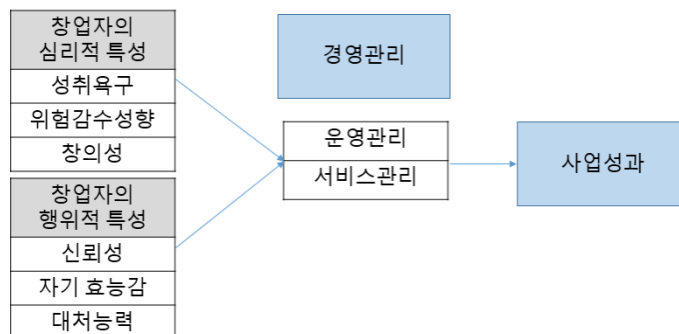
측정지표는 재무적 성과 중심이었으나 최근 들어서는 비재무적 요인이 기업의 가치와 전체적인 경영 성과에 직접적인 연관을 갖는다는 사실이 입증되고 있다. 기업 규모의 증대, 시장 환경의 복잡성 등으로 더 이상 재무적인 성과의 측정만으로는 기업의 성과를 제대로 평가할 수 없게 되었기 때문이다. 경영성과의 측정은 기업의 경영 상태를 진단하고 효율적으로 조직을 운영하기 위한 기초가 됨으로 일반적으로 기업의 경영성과는 객관적 성과와 주관적 성과, 그리고 재무적 성과와 비재무적 성과로 구분할 수 있다(Stuall & Abetti, 1987). 재무적성과는 가장 협의의 개념으로 기업의 경제적 목표에 영향을 미치는 재무적 지표에 기초하며 수익성, 생산성, 시장점유율, 매출액 증가율, 투자수익률 측면에서 구체적으로 분석한 연구가 있다(Fombrun & Wally, 1959; Covin, Slevin & Covin, 1990; Chandler & Hanks, 1994; 신진교, 2002).

3. 연구 설계

3.1 연구모형

본 연구는 선행연구를 바탕으로 외식창업자의 심리적 특성(성취욕구, 위험감수성, 창의성)과 행위적 특성(신뢰성, 자기효능감, 대처능력), 경영관리(운영관리, 서비스관리)와 사업성과 등의 변수들을 선정하였다. 선행연구를 바탕으로 다음과 같은 <그림 3-1> 연구모형을 설정하였다. 선행연구를 바탕으로 외식창업자의 심리적 특성(성취욕구, 위험감수성, 창의성)과 행위적 특성(신뢰성, 자기효능감, 대처능력)이 경영관리(운영관리, 서비스관리)에 미치는 영향을 검증할 것이며 이러한 경영관리는 사업성과에 어떠한 영향을 미치는지를 검증할 것이다.

<그림 3-1> 연구모형



3.2 연구가설

3.2.1 심리적 특성과 경영관리의 관계

창업을 시작하고자 하거나 준비하고 있는 예비창업자는 그 성격에 따라 창업에 대한 태도를 다르게 보이고 있으며 이는 창업이 진행되었을 때 성과에 큰 영향을 미친다. 빈 봉식·박정기(2001)는 창업자의 특성을 개인적 특성, 배경적 특성, 심리적 특성으로 분류하였다. 개인적 특성은 상담 실무경험, 창업경험, 연령이 창업 성공에 영향을 미치는 것으로 나타났으며 심리적 특성은 성취욕구, 모호함에 대한 인내심과 통제위치가 창업 성공에 영향을 주는 것으로 나타났다.

Matsuno et al.(2002)은 창업자의 개인특성 중에서 지향성을 혁신, 위험감수성, 진취성으로 구분했으며 창업자의 정신이 조직 구조요인 창업 성공에 영향을 주는 것으로 나타났다. McClelland(1965)는 심리적 특성 중 성취욕구가 높은 창업자일수록 의사결정에 대한

책임감이 높고 목표 달성과의 상관관계가 높다고 하였다. 그리고 Begley and Boyd(1987)는 창업자의 성취욕구가 높을수록 도전적인 목표를 설정하고 결과의 가치를 스스로 평가하여 보다 높은 성과를 위해 항상 노력하기 때문에 성취욕구는 창업의도와 창업성공에 정(+)의 영향을 미친다고 하였다. 또한 Stewart & Roth(2007)는 성취욕구가 창업성공 자신감에 정의 유의한 영향을 미칠 수 있다는 것을 실증적으로 보여주었다.

유봉호(2015)는 창업이라는 특정의 행동을 하는데 있어서 자기결정성 동기의 역할을 강조하였다. 창업자의 특성이 기업성공에 절대적인 영향력을 미칠 것으로 생각되기 때문에 창업자의 특성과 외식창업의 경영성과와의 관계에 대해서 대부분의 기존 연구들은 창업자의 경력특성과 심리특성에 초점을 두고 있다(윤종화·이도화, 2001), 이러한 연구의 흐름은 최근 연구로 이어져 창업가의 인구통계학적 특성이 기업의 성과에 어떠한 영향을 미치는가에 대한 연구가 이루어졌다(정혜영, 2001).

가설 H1a: 창업가의 심리적 특성은 운영관리에 정(+)의 영향을 미칠 것이다.

가설 H1b: 창업가의 심리적 특성은 서비스관리에 정(+)의 영향을 미칠 것이다.

3.2.2 행위적 특성과 경영관리의 관계

창업자 또는 창업기업에 있어 성공은 경영성과 목표달성이라고 볼 수 있으며 이는 재무적 성과의 정도에 따라서 성공과 실패를 결정 지을 수 있을 것이다. 창업 및 경영성과는 주로 창업자 개인의 특성인 배경특성, 심리특성, 행위특성이 재무적인 경영성과에 미치는 영향에 초점을 맞추고 연구되어 왔다.

Sandberg & Hofer(1987)는 창업자의 배경적 특성이나 심리적 특성보다도 창업자의 행위적 특성이 성과에 어떠한 영향을 미치는지에 대한 연구가 이루어질 필요가 있음을 언급하기도 하였다. 김태훈 등(2014)은 신뢰성을 최고경영자의 언행일치, 정직성, 그리고 약속에 대한 신념의 정도로 규정하였으며, Kim(2014), Song & Son(2005), Cho(1995) 등은 신뢰성, 외부네트워크, 자기효능감 등을 포함하는 사회적 능력은 창업성공에 의미 있는 영향을 끼치는 것으로 밝혔다.

정대용(2007)은 불행한 사업가의 특성으로 부정직 또는 불성실 즉 신뢰성 부족을 지적했다. 즉, 신뢰성은 CEO 최고경영자가 대내외적으로 이해관계자들이 믿음을 가지도록 하는 행동적 특성으로 창업 성공에 매우 필수적인 요인이다(Lee & Jang, 1998). 이민식 등(2013)은 브랜드신뢰성은 브랜드충성도에, 브랜드충성도는 재구매의도에 긍정적인 영향을 끼치는 것으로 연구하였으며, 브랜드신뢰성 향상과 이를 통한 브랜드자산의 창출은 기업의 가치를 증대시킬 수 있는 최고의 전략이라고 하였다.

김민수 등(2010)은 창업보육센터에 입주한 기업창업자를 대상으로 창업보육기업의 창업자 특성이 기업성공에 미치는 영향에 관한 연구를 하였으며, 창업자의 특성을 심리적 특성, 행위적 특성, 경력특성, 창업교육경험으로 구분하여 기업성공에 미치는 영향을 검토하였다. 분석결과는 행위적 특성이 P값이 0.73으로 5% 유의수준에서 유의하지 않은 것으로 나타났다. 이러한 결과는 여러 선행연구에서 설정한 창업자의 행위적 특성이 기업성공에 영향을 미친다는 결과는 지지하지 못한 것으로 나타났다.

가설 H2a: 창업가의 행위적 특성은 운영관리에 정(+)의 영향을 미칠 것이다.

가설 H2b: 창업가의 행위적 특성은 서비스관리에 정(+)의 영향을 미칠 것이다.

3.2.3 경영관리와 사업성과의 관계

김태훈 등(2014)은 창업가특성과 경영관리와의 관계를 분석하였는데, 창업가특성이 경영관리 요인에 영향을 미치고, 경영관리 요인은 다시 경영성과에 영향을 미친다는 사실을 순차적으로 규명하였으며, 경영관리의 하위요인으로 운영관리, 수익관리, 고객관리,

서비스관리를 제시하였다. 창업기업의 경영성과와 관련한 대부분의 연구는 창업자의 특성 또는 창업환경과의 관련성을 대상으로 하고 있다. 그러나 본 연구에서는 창업기업의 경영활동과 창업기업의 경영성과간의 관련성을 분석하고자 한다. 외식업에 있어서 경영관리란 외식점포를 운영하는데 필요한 사람, 상품, 자본을 효과적으로 활용하여 목적을 달성하는 기술을 의미하는 것으로 여기에는 비용관리만 국한되는 것이 아니라 사회에 대한 공헌 부분과 경영효율을 실현하는 것까지 포함한다(신재용·박기용, 1999).

빈봉식 등(2002)은 경영관리의 하위요인으로 자금통제, 생산관리, 기술혁신, 전문가 상담, 종업원 관리, 마케팅활동을 언급하면서 창업자가 아무리 좋은 사업아이템과 자본을 가지고 사업을 시작해도 경영관리 역량이 부족하여 실패로 이어지는 경우가 많이 발생한다고 하였다. 박정기(2002)는 창업소상공인의 경영관리 요인으로 생산.기술, 유능한 종업원, 자금통제, 마케팅이 경영성과에 긍정적인 영향을 미치고 있음을 실증적 분석을 통해 확인하였다.

정대용(2007)에 따르면 파산의 가장 큰 이유는 관리체계의 결여인데 실패한 사업가들은 경비, 재고, 현금과 인력의 관리방법을 몰랐다고 한다. 즉, 경영관리 역량은 사업이 성공하는데 중요한 기준이며, 성공을 위한 중요한 요인으로 보았다(김양주, 2006). 성옥석·박승락(2015)은 소상공인 창업특성이 경영마인드개선과 역량제고 및 성과에 미치는 영향을 검증하였으며, 마인드개선과 역량제고를 매개요인으로 하여 경영관리는 사업성과에 미치는 영향을 분석하였다. 분석 결과 경영관리는 마인드개선과 역량제고에 유의한 영향을 보였고 이는 성과에도 영향을 주는 것으로 나타났다.

이러한 외식업의 경영관리는 근본적으로 차별화되고 집중화된 요가 창업기업의 성과에 중대한 영향을 미친다고 본다. 차별화되고 집중화된 요소로서 외식업 창업의 경영관리 요소는 사업성과에 긍정적인 영향을 미칠 수 있다는 점을 가정하여 다음과 가설을 설정하였다.

가설 H3: 운영관리는 사업성과에 **정(+)**의 영향을 미칠 것이다.

가설 H4: 서비스관리는 사업성과에 **정(+)**의 영향을 미칠 것이다.

3.3 조작적 정의 및 측정문항

본 연구에서는 창업자의 심리적 특성을 경영관리 및 사업성과와 영향 관계에 있어서 중요한 변수이며 Slevin(1989), Lumpkin & Dess(1996), Stevenson & Jarillo(1990) 선행연구를 바탕으로 성취욕구, 위험감수성, 창의성이라고 조작적 정의하였다. 선행연구들을 바탕으로 성취욕구의 4개 문항, 위험감수성의 4개 문항, 창의성의 4개 문항을 각각 본 연구에 맞게 수정하였으며 모든 문항은 5점 리커트 등간척도로 측정하였다.

본 연구에서는 창업자의 행위적특성을 경영관리 및 사업성과와 영향관계에 있어서 중요한 변수이며 Sandberg & Hofer(1987), Herron & Robinson(1993), Collins & Lazier(1992) 선행연구를 바탕으로 신뢰성, 자기효능감, 대처능력이라고 조작적 정의하였다. 선행연구들을 바탕으로 신뢰성 3개 문항, 자기효능감 3개 문항, 대처능력 3개 문항을 각각 본 연구에 맞게 수정하였으며 모든 문항은 5점 척도로 측정하였다.

본 연구에서는 경영관리는 심리적 특성과 행위적 특성 및 사업성과와 영향관계에 있어서 중요 변수이며(Davidsson & Wiklund, 2001; 김민수 등, 2010; 김진수 등, 2011) 선행연구를 바탕으로 운영관리, 수익관리, 고객관리, 서비스관리라고 조작적 정의하였다. 선행연구들을 바탕으로 운영관리의 4개 문항, 서비스관리의 4개 문항을 각각 본 연구에 맞게 수정하였으며 모든 문항은 5점 척도로 측정하였다.

본 연구에서는 사업성과를 현재 매출 만족, 순익 증가, 창업 만족으로 조작적 정의하였다. 이충섭 등(2009), 장성희(2012), 김대업·성창수(2013) 등의 선행연구를 바탕으로 사업성

과의 4개 문항을 본 연구에 맞게 수정하여 선정하였으며 모든 문항은 5점 척도로 측정하였다. 즉, “창업 후 현재 매출에 만족하고 있다”, “창업 후 현재 순이익이 증가하고 있다”, “음식점 창업에 대해 만족하고 있다”, “투자금을 회수할 수 있다” 등이다. 사업성과의 주요 측정문항은 다음의 <표 3-4>와 같다.

4. 실증분석

본 연구에서의 설문조사는 직접 대면조사 및 비대면 온라인 Google 설문지를 활용한 두 가지 형식으로 진행하였다. 조사기간은 2022년 8월 10일~2022년 9월 5일까지 실시하였으며, 총 299개의 설문지를 수집하였으며 실증분석에는 287개의 설문지가 최종적으로 적용되었다. 본 연구는 실증분석을 위하여 SPSS 26.0과 AMOS 18.0을 사용하였다.

4.1 표본의 특성

실증분석을 위해 수집된 설문지는 총 299개였으며 부적합한 표본을 제외하고 287개의 설문지가 최종적으로 적용되었다. 본 연구의 표본의 인구통계적 특성을 제시하기 위하여 빈도분석을 실시하였으며, 그 결과는 <표 4-1>과 같다. 먼저 성별은 남자 127명(44.3%)와 여자 160명(55.7%)으로 나타났다. 응답자의 연령은 50대 116명(40.4%), 40대 84명(29.3%)이 제일 높게 나타났으며, 그 다음으로 60대 이상 37명(11.8%), 30대 30명(10.5%), 20대 23명(8.0%)으로 분석되었다.

<표 4-1> 표본 특성

문항	응답	명	%
성별	남자	127	44.3
	여자	160	55.7
나이	20대	23	8.0
	30대	30	10.5
	40대	84	29.3
	50대	116	40.4
	60대 이상	37	11.8
업소의 업종	한식(일반)	99	34.5
	한식(고기집)	68	23.7
	양식	41	14.3
	중식	20	7.0
	일식	20	7.0
	기타	39	13.6
업소의 창업형태	독립창업	171	59.6
	프랜차이즈창업	69	24.0
	인수창업	47	16.4
업소 위치	상업지역	140	48.8
	주거지역	113	39.4
	외곽지역	34	11.8
합계		287	100%

업소의 업종형태는 한식(일반)이 99명(34.5%)과 한식(고깃집)이 68명(23.75%)으로 제일 높게 나타났으며 그 다음으로 양식 41명(14.3%), 기타 39명(13.6%), 중식 20명(7.0%), 일식 20명(7.0%)으로 확인되었다. 업소의 창업형태는 독립창업이 171명(59.6%), 프랜차이즈창업 69명(24.0%), 인수창업 47명(16.4%)으로 나타났으며, 마지막으로 업소의 위치는 상업지역이 140명(48.8%), 주거지역 113명(39.4%), 외곽지역 34명(11.8%)으로 확인되었다.

4.2 신뢰도 및 타당성분석

신뢰성을 분석한 결과 <표 4-2>와 같다. 본 연구의 신뢰성 계수는 모두 0.6 이상을 넘어서 문항의 내적일관성이 높은 것으로 볼 수 있다. 심리적 특성 중 성취욕구 값이 0.853, 위험감수성 값이 0.798, 창의성 값이 0.808의 신뢰도를 보였다. 그 다음으로 행위적 특성 중 신뢰성 값이 0.742, 자기효능감 값이 0.702, 대처능력 값이 0.679이 신뢰도를 보였다. 경영관리 중 운영관리 값이 0.642, 서비스관리 값이 0.727의 신뢰도를 보였다. 마지막으로 사업성과는 0.844의 신뢰도를 보였다.

<표 4-2> 신뢰도분석 결과

요인		문항 수	Alpha 계수
심리적특성	성취욕구	4	.853
	위험감수성	4	.798
	창의성	4	.808
행위적특성	신뢰성	3	.742
	자기효능감	3	.702
	대처능력	3	.679
경영관리	운영관리	3	.642
	서비스관리	4	.727
사업성과		4	.844

탐색적 요인분석 결과는 <표 4-3>에서와 같이, 모든 요인 적재량의 패턴과 분포가 적합한 것으로 나타났다. 그러나 요인적재량의 0.5이상을 넘지 못한 신뢰성 3번, 자기효능감 2번, 대처능력 3번 문항 등 3개 항목이 제거되었다.

<표 4-3> 탐색적 요인분석 결과

	1	2	3	4	5	6	7	8	9
성취욕구1			.747						
성취욕구2			.793						
성취욕구3			.699						
성취욕구4			.772						
위험감수성1					.852				
위험감수성2					.755				
위험감수성3					.729				
위험감수성4					.568				
창의성1	.705								
창의성2	.634								

창의성3	.837								
창의성4	.677								
신뢰성1							.839		
신뢰성2							.834		
자기효능감1						.620			
자기효능감3						.618			
대처능력1									.745
대처능력2									.657
운영관리1								.598	
운영관리2								.819	
운영관리3								.712	
운영관리4								.709	
서비스관리1				.756					
서비스관리2				.548					
서비스관리3				.743					
서비스관리4				.639					
사업성과1		.837							
사업성과2		.815							
사업성과3		.763							
사업성과4		.733							
전체	3.192	2.959	2.952	2353	2.310	2.044	1.865	1.746	1.182
분산	10.641	9.864	9.839	7.843	7.702	6.813	6.217	5.821	3.939
누적	10.641	20.505	30.344	38.187	45.888	52.702	58.919	64.740	68.678
KMO=0.867, $\chi^2=3772.70$, d.f.=435, p=0.000									

4.3 1차 확인적 요인분석

본 연구의 모델적합도 지수는 CMIN=636.082, DF=288, P=.000, CMIN/DF=2.209, GFI=.855, AGFI=.810, NFI=.824, IFI=.896, TLI=.870, CFI=.894, RMR=.042, RMSEA=.065의 결과치를 보였다. 집중타당도의 유무 판정은 표준화요인적재량이 0.6이상이고, 합성(개념)신뢰도도 0.7이상, AVE 0.5이상으로 전체를 고려할 경우 집중타당도가 어느 정도 있다고 볼 수 있다(신종철, 2014). 종속변수인 운영관리와 서비스관리 및 사업성과에 영향을 미치는 요인들, 즉 심리적특성과 행위적특성에 대한 1차 요인들을 설정하였으며 1차 확인적요인분석은 다음의 <표 4-4>와 같다.

<표 4-4> 1차 요인 확인적 요인분석 결과

요인	표준화계수	S.E.	t-value	Composit reliability	AVE
성취욕구4	.764			.854	.595
성취욕구3	.725	.086	12.059		
성취욕구2	.826	.083	13.777		
성취욕구1	.769	.081	12.826		
위험감수성4	.692			.799	.500
위험감수성3	.763	.114	10.646		

위험감수성2	.650	.104	9.400		
위험감수성1	.718	.117	10.205		
창의성4	.675			.811	.518
창의성3	.696	.103	10.038		
창의성2	.722	.090	10.337		
창의성1	.783	.102	10.982		
신뢰성2	.853			.826	.704
신뢰성1	.825	.091	10.214		
자기효능감3	.711			.700	.533
자기효능감1	.750	.171	8.073		
대처능력2	.721			.700	.529
대처능력1	.734	.161	8.206		
운영관리3	.703			.734	.581
운영관리4	.818	.107	8.443		
서비스관리3	.741			.762	.517
서비스관리2	.716	.160	7.149		
서비스관리1	.700	.192	7.090		
사업성과4	.674			.846	.579
사업성과3	.771	.104	11.017		
사업성과2	.794	.108	11.248		
사업성과1	.800	.111	11.308		
CMIN=636.082, DF=288, P=.000, CMIN/DF=2.209, GFI=.855, AGFI=.810, NFI=.824, IFI=.896, TLI=.870, CFI=.894, RMR=.042, RMSEA=.065					

4.4 2차 확인적 요인분석

2차 요인 확인적 요인분석 결과는 다음의 <표 4-5>와 같다. 모형적합도 지수는 CMIN=369.127, DF=128, P=.000, CMIN/DF=2.884, GFI=.874, AGFI=.832, NFI=.843, IFI=.891, TLI=.868, CFI=.890, RMR=.051, RMSEA=.081으로 나타났다. 먼저 심리적 특성에 창의성이(표준화계수=.897) 제일 크게 영향을 주는 것으로 나타났다. 그 다음으로 위험감수성(표준화계수=.721), 성취욕구(표준화계수=.687)으로 나타났다. 그리고 행위적 특성에 자기효능감이(표준화계수=1.096) 제일 크게 영향을 주는 것으로 나타났다. 다음으로 대처능력(표준화계수=.886)과 신뢰성(표준화계수=.524)으로 나타났다.

<표 4-5> 2차 요인 확인적 요인분석 결과

구분			표준화 계수	S.E.	C.R.	Composit reliability	AVE
1차 요인	경로	2차 요인					
성취욕구	←	심리적특성	.687	.108	6.533	.815	.598
위험감수성	←		.721	.128	6.331		
창의성	←		.897				

신뢰성	←	행위적특성	.524	.201	5.367	.894	.753
자기효능감	←		1.096	.232	5.115		
대처능력	←		.886				
CMIN=369.127, DF=128, P=.000, CMIN/DF=2.884, GFI=.874, AGFI=.832, NFI=.843, IFI=.891, TLI=.868, CFI=.890, RMR=.051, RMSEA=.081							

4.5 상관관계분석

판별타당성을 확인하기 위해 상관관계분석을 실시하였고, 확인적 요인분석결과를 토대로 산출한 평균분산추출을 비교할 수 있도록 <표 4-6>과 같이 제시하였다. 요컨대, AVE 계수 값이 모두 상관계수의 제곱보다 크기 때문에 본 분석 결과에서는 판별타당성이 확보된 것으로 판단하였다.

<표 4-6> 판별타당성 분석 결과

요인	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) 성취욕구	.595								
(2) 위험감수성	.246	.500							
(3) 창의성	.379	.421	.518						
(4) 신뢰성	.245	.123	.164	.704					
(5) 자기효능감	.361	.219	.314	.226	.533				
(6) 대처능력	.089	.077	.091	.077	.189	.529			
(7) 운영관리	.225	.090	.142	.191	.267	.281	.581		
(8) 서비스관리	.516	.395	.421	.326	.422	.467	.175	.517	
(9) 사업성과	.173	.164	.224	.171	.231	.274	.197	.258	.579
주) 상관계수의 제곱값, 대각선은 AVE 값									

4.6 가설검정

창업가의 심리적 특성이 운영관리에 유의한 영향을 미친다는 가설 H1a(표준화계수=.408, $t=4.060$, $p=.0030$)는 채택되었다. 또한 창업가의 심리적 특성이 서비스관리에 유의한 영향을 미친다는 가설 H1b(표준화계수=.139, $t=2.016$, $p=.044$)는 채택되었다. 이러한 결과는 창업가의 심리적 특성으로 인해 외식창업과들의 경영관리가 더 형성된다는 것이다. 또한 심리적특성은 서비스관리보다 운영관리에 큰 영향력을 보여줌으로써, 창업가의 성취욕구, 위험감수성 및 창의성 요인들은 운영관리와 연관성이 높은 것으로 판단된다.

창업가의 행위적 특성이 운영관리에 유의한 영향을 미친다는 가설 H2a(표준화계수=.609, $t=4.289$, $p=.000$)는 채택되었다. 또한 창업가의 행위적 특성이 서비스관리에 유의한 영향을 미친다는 가설 H2b(표준화계수=.791, $t=5.745$, $p=.000$)도 채택되었다. 이러한 결과는 창업가의 행위적 특성으로 인해 외식창업과들의 경영관리가 더 형성된다는 것이다. 또한 행위적특성은 운영관리보다 서비스관리에 큰 영향력을 보여줌으로써, 창업가의 신뢰성, 자기효능감 및 대처능력 요인들은 서비스관리와 연관성이 높은 것으로 판단된다.

운영관리는 사업성과에 유의한 영향을 미친다는 가설 H3(표준화계수=.214, $t=3.145$, $p=.000$)은 채택되었으며, 서비스관리는 사업성과에 유의한 영향을 미친다는 가설 H4(표준화 계수=.429, $t=4.869$, $p=.000$)는 채택되었다. 이러한 결과는 운영관리와 서비스관리로 인해 사업성과가 더 형성된다는 것이다. 또한 사업성과에는 운영관리보다 서비스관리는 더

큰 영향력을 보여줌으로써, 사업성과는 창업가의 신뢰성, 자기효능감 및 대처능력 요인들과 연관성이 높은 것으로 판단된다.

<표 4-7> 가설검정 결과

가설	독립변수	종속변수	표준화계수	S.E.	C.R.	P	결과
H1a	심리적 특성	운영관리	.408	.101	4.060	.000	채택
H1b	심리적 특성	서비스관리	.139	.069	2.016	.044	채택
H2a	행위적 특성	운영관리	.609	.142	4.289	.000	채택
H2b	행위적 특성	서비스관리	.791	.138	5.745	.000	채택
H3	운영관리	사업성과	.214	.068	3.145	.002	채택
H4	서비스관리	사업성과	.429	.088	4.869	.000	채택

CMIN=671.466, df=311, P=.000, CMIN/DF=2.159, GFI=.845, AGFI=.812, NFI=.815, IFI=.891, TLI=.876, CFI=.890, RMR=.045, RMSEA=.064

5. 결론

본 연구의 분석결과를 요약하면 다음과 같다. 첫째, 심리적 특성이 운영관리에 유의한 영향을 미친다는 가설 H1a는 채택되었다. 또한 심리적 특성이 서비스관리에 유의한 영향을 미친다는 가설 H1b는 채택되었다. 이러한 결과는 심리적 특성의 요인들 성취욕구, 위험감수성, 창의성으로 인해 외식창업자들의 운영관리와 서비스관리가 더 형성된다는 시사한다. 둘째, 행위적 특성이 운영관리에 유의한 영향을 미친다는 가설 H2a는 채택되었다. 아울러 행위적 특성이 서비스관리에 유의한 영향을 미친다는 가설 H2b도 채택되었다. 이와 같은 결과는 행위적 특성의 요인들 신뢰성, 자기효능감, 대처능력으로 인해 외식창업자들의 운영관리와 서비스관리가 더 형성된다는 것을 의미한다. 셋째, 운영관리는 사업성과에 유의한 영향을 미친다는 가설 H3은 채택되었다. 이러한 결과는 운영관리로 인해 사업성과는 더 형성된다는 것을 의미한다. 넷째, 서비스관리는 사업성과에 유의한 영향을 미친다는 가설 H4는 채택되었다. 이와 같은 결과는 서비스관리로 인해 사업성과는 더 형성된다는 것을 시사한다.

먼저 연구의 이론적 시사점은 다음과 같다. 첫째, 기존 연구에서는 심리적 특성과 행위적 특성은 별도로 많이 연구되었으나, 본 연구에서는 심리적 특성(Lumpkin and Dess, 1996)과 행위적 특성(Mitchelmore and Rowley, 2013)이 모두 연구되었다. 구성된 심리적 특성과 행위적 특성을 다차원으로 구성하여 같이 연구함으로써 운영관리와 서비스관리 및 사업성과에 영향을 미치는 외식창업자의 경영관리에 이론적 기틀을 마련하였다.

둘째, 본 연구에서는 심리적 특성과 행위적 특성이 운영관리와 서비스관리 및 사업성과의 구조 모형이 제시되었다. 심리적 특성과 행위적 특성이 운영관리 및 서비스관리에 미치는 영향과 이어서 사업성과에 미치는 영향에 대한 연구는 아직까지 거의 연구되지 않아 기존 연구와 차별성이 있으며, 더 발전된 연구라고 할 수 있다.

셋째, 심리적 특성과 행위적 특성의 2차 요인에 대해 측정하였으며, 심리적 특성의 요인 중 창의성과 행위적 특성의 요인 중 자기효능감이 다른 요인들 보다 영향이 크다고 측정되었음을 알 수 있으며 중요한 요인임을 알 수 있었다.

마지막으로, 가설검증분석에서 심리적 특성이 서비스관리보다 운영관리에 큰 영향을 보인다는 것을 알 수가 있었으며, 반면 행위적 특성이 운영관리보다 서비스관리에 큰 영향을 보인다는 것을 알 수가 있다. 또한 사업성과에는 운영관리보다 서비스관리가 큰 영향을 준다는 것을 본 연구에서 알 수가 있었다.

본 연구의 실무적 시사점은 다음과 같다. 첫째, 심리적 특성이 운영관리 및 서비스관리

에 유의한 영향을 보였다. 즉, 성취욕구, 위험감수성, 창의성이 운영관리와 서비스관리에 유의한 영향력을 확인하였을 때 외식창업가들의 운영관리는 가장 효과적으로 나타났으며, 그 다음으로 서비스관리는 효과적으로 나타났다. 따라서 창업자가 성공적인 운영관리를 위해서는 성취욕구가 있어야 하며 이는 사업적인 문제를 해결하는 능력을 키우며, 단단한 사업목표를 높이 세우고 달성하기 위한 노력이 필요하다. 또한 위험을 감수할 수 있는 능력을 높이고 이는 목적달성을 위한 광범위한 경영활동 수행과 위험이 높더라도 새로운 사업분야에 도전하는 노력도 필요하다. 마지막으로 창업 운영관리를 향상시키기 위해 지속적인 창의적 생각과 판단이 필요하며, 또한 타 경쟁자들 보다 차별적인 제품과 서비스를 제공하는 노력이 필요하다. 그리고 논리적인 사고보다 창의성을 중요시하고 아이디어 발굴을 위해 아이템 관련 견학을 자주해야 한다.

둘째, 행위적 특성이 운영관리 및 서비스관리에 유의한 영향을 보였다. 즉, 신뢰성, 자기효능감, 대처능력이 운영관리와 서비스관리에 유의한 영향력을 확인하였을 때 외식창업가들의 서비스관리는 가장 효과적으로 나타났으며, 그 다음으로 운영관리는 효과적으로 나타났다. 따라서 창업가들은 성공적인 서비스관리를 위해서는 대처능력이 중요하며 이는 고객이 문제를 신속하게 해결하기 위한 노력이 필요하고 아울러 어떠한 사회적인 상황에도 빠르게 대응할 수 있는 능력이 있어야 한다. 또한 외식창업가들은 사업성장을 위하여 새로운 트렌드를 반영하고 새로운 메뉴개발을 위하여 신아이디어를 찾는 노력이 필요하다. 마지막으로 고객과의 신뢰를 높이기 위한 어떤 고객과도 편하게 이야기를 할 수 있어야 하며 모든 사람과 편하게 지낼 수 있어야 한다.

셋째, 운영관리와 서비스관리는 사업성장에 유의한 영향을 보였으며 영향력을 확인하였을 때 외식창업가들의 사업성장은 서비스관리에서 가장 효과적으로 나타났으며, 그 다음으로 운영관리는 효과적으로 나타났다. 이는 경영관리에 있어 사전에 충분히 검토하고 철저한 준비를 후에 창업을 시도해야 하겠다는 것이다. 따라서 외식창업성장을 높이고 유지하기 위한 서비스관리는 우선적으로 고려할 부분이며 이는 신속한 서비스 제공과 실패에 빠른 대처능력이 매우 중요하다. 또한 외식창업성장을 위해 업소의 위치는 고객들이 접근하기 편리한 곳에 위치되어야 하며 주차시설도 편리해야 한다. 그리고 외식창업 인테리어나 편의시설 등이 잘 갖추어 있어야 하며 종업원 또한 용모가 단정하고 친절해야 한다.

본 연구는 외식창업가들에 대한 심리적 특성, 행위적 특성, 운영관리, 서비스관리 및 사업성장으로 구성된 연구이며, 다음과 같은 한계점이 있다.

첫째, 창업가의 심리적 특성, 행위적 특성의 2가지 요소로 한정함에 있어 창업가의 다른 특성을 복합적으로 추가하여 연구하지 못하였기 때문에 추후 연구 시 창업과 관련된 많은 특성을 종합적으로 적용하여 연구하면 더 의미 있는 연구가 될 수 있을 것으로 판단된다.

둘째, 본 연구에서는 외식창업가의 심리적 특성을 성취욕구, 위험감수성, 창의성의 변인으로 연구하였으나, 향후 연구에서는 다양한 변인들을 탐색하여 고려하여 적용할 필요가 있다. 또한 외식창업가의 행위적 특성을 신뢰성, 자기효능감, 대처능력의 변인으로 연구하였으나, 향후 연구에서는 다양한 변인들을 탐색하여 고려하여 적용할 필요가 있다.

셋째, 본 연구에서는 사업성장에 영향을 줄 수 있는 인구통계적 특성 5개문항(성별, 연령, 업소 형태, 업소 위치, 창업형태)으로 최소화하여 다양한 표본을 확보하지 못하였고, 분화하지 않고 포괄적으로 분석하였다는 점에서 표본의 대표성과 연구결과의 일반화에 한계점을 가진다. 향후 연구에서는 표본의 대표성을 제고하기 위해 보다 세분화된 인구통계적 특성 문항들을 추가하여 분석할 필요가 있다.

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A study on the confidence of disabled athletes

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Abstract – This study aims to examine the impact of psychological skills training on the confidence of disabled athletes. The psychological skills training components selected include Goal Setting Training, Anxiety Control Training, Confidence Training, Attention Training, and Imagery Training. The confidence characteristics of disabled athletes will be analyzed based on four factors: ability demonstration, social support, coach leadership, and physical/mental readiness.

Keywords – Disabled athlete, Psychological Skill Training, Confidence

1. Introduction

In contemporary sports, the landscape is defined by a delicate interplay of prowess and physical vigor. Yet, amidst this tapestry of athletic excellence, the spotlight increasingly turns towards the intangible realm of psychological fortitude. Standardization has underscored the pivotal role of mental acumen, acknowledging it as the paramount determinant of triumph or defeat. Amidst this recognition, Psychological Skill Training emerges as a formidable tool for harnessing the nuances of the psyche. This training, meticulously crafted, serves as a conduit for attenuating anxiety, modulating arousal, and nurturing self-assurance. By adeptly modulating cognitive awareness, it catalyzes a shift towards a more constructive mindset within the crucible of sports competition. The arsenal of techniques encapsulated within Psychological Skill Training can aptly be characterized as a compendium of principles and strategies (Vealey, 1988). These methodologies, intricately designed and refined, serve not only to fortify individual resilience but also to foster a proactive approach towards performance enhancement.

Therefore, training programs focusing on optimizing athletes' condition through psychological skill training and counseling are being developed. Basic psychological techniques encompassed within psychological skill training include imagery skills, psychic energy management, stress management, attentional skills, goal setting skills, and others (Martens, 1982). The significance of these psychological factors is not limited solely to able-bodied athletes; it is also evident that psychological factors directly influence the performance of athletes with disabilities.

When considering the psychological characteristics inherent in approaching a game, it is noted that athletes with disabilities share striking similarities with their non-disabled counterparts (Sherrill, 2004). Furthermore, there have been instances where the application of traditional psychological skill training has resulted in enhanced performance (Kim Sung-hoon, Shin Jung-taek, 2009). However, scientific endeavors aimed at improving the performance of athletes with disabilities have predominantly focused on fields such as physiology, biomechanics, and education. Consequently, research concerning the psychological skills and performance enhancement of athletes with disabilities has been notably scarce.

Athletes with physical disabilities may encounter greater psychological challenges in sports participation. Hence, it can be argued that psychological factors are of utmost importance in preparing these athletes for intense training and competition.

The majority of psychological skill training research has been centered on elite non-disabled athletes, focusing on their performance strategies, self-management, and athletic records (305). Consequently, there is a notable lack of studies elucidating the direct impact of training on athletes with disabilities. From this perspective, research addressing the psychological factors of athletes with disabilities is crucial for providing foundational knowledge to enhance understanding and performance among such athletes. Therefore, the purpose of this study is to investigate how psychological skills influence self-confidence, a critical component of athletic performance, among athletes with physical disabilities.

2. Theoretical background

2.1 Psychological skill training

'Psychological skills' can be defined as holistic strategies and techniques necessary for overcoming psychological issues experienced in sports situations and maximizing performance through the regulation of thoughts and emotions. And 'psychological skills training (PST)' refers to the process of helping athletes acquire self-regulatory skills to perform at their best (Jeong, 2006). Gang Dong-gu (2007) argues that there are individual differences in psychological skills, and the idea that psychological skills can be trained like physical skills was already proposed by Coleman Griffith in the 1930s. Based on comprehensive research to date, it can be concluded that the psychological state of athletes is closely related to the performance of motor skills. Jeong Cheong-hee (2006) states that psychological skills are based on mental strength, with its subcomponents interacting with each other.

Psychological skill training has been composed of various approaches introduced from theories such as Neuro-linguistic Programming (NLP), psychophysiological theory, cognitive-behavioral theory, trait-factor theory, and humanistic theory, as well as psychological techniques such as motivation, goal setting, relaxation, and imagery training (Kim Byung-joon, 2003). Psychological skills refer to the mental abilities necessary for athletes to overcome adverse psychological states experienced in sports situations and to exhibit peak performance by regulating their thoughts and emotions positively. These skills include positive self-regulation, stress management, anxiety reduction, arousal control, and confidence enhancement. Psychological skill training involves acquiring or maintaining psychological skills as methods for athletes to perform at their best, such as goal setting, attentional focus, imagery, and relaxation training (Jeong Cheong-hee, Kim Byung-joon, 1999; Weinberg & Gould, 1995).

Psychological skills training can be distinguished into psychological 'skills' and 'methods' for the development of psychological skills (Vealey, 1988). Here, psychological 'skills' refer to the ultimate outcomes aimed to be achieved through training. For instance, self-confidence and attentional focus are what athletes seek to acquire through psychological skills training. On the other hand, methods for the development of psychological skills refer to the procedures or techniques used by athletes to enhance their psychological skills. Vealey derived four psychological methods and eight psychological skills through content analysis of 27 specialized books on psychological skills training published between 1982 and 1988. Among the four methods for psychological skill development, imagery (100%) is the most widely used, followed by physical relaxation (93%), thought control (93%), and goal setting (70%). The eight psychological skills include (1) environmental control, (2) arousal regulation, (3) self-

confidence, (4) willpower/motivation, (5) interpersonal skills, (6) lifestyle management, (7) self-awareness, and (8) self-esteem.

2.1.1 Goal setting training

The goals can be divided into subjective goals and objective goals (Jeong Cheong-hee, Kim Byung-joon, 1999). Subjective goals refer to individual goals set by oneself, such as "doing one's best" or "enjoying the process," which are interpreted subjectively and may differ from the outcome. Objective goals, on the other hand, refer to specific performance criteria to be achieved within a limited timeframe. Goals are also categorized into outcome goals and performance goals (Martens, 1987; Weinberg & Gould, 1995). Outcome goals emphasize the results of success and failure in the competition, while performance goals, also known as process goals, are based on one's own past performance and serve as standards or goals that individuals aim to achieve, control, and flexibly adapt to.

2.1.2 Anxiety control training

Anxiety is distinguished between trait anxiety and state anxiety. Trait anxiety refers to an individual's innate or acquired behavioral tendency to perceive non-threatening situations as threatening, regardless of the intensity of objective threats, leading to a state of anxiety response. On the other hand, state anxiety is an emotional state that fluctuates depending on the situation, associated with activation of the autonomic nervous system and arousal, characterized by subjective and conscious feelings of worry or tension (Jeong Cheong-hee, 2003; Smith, 2000). Anxiety experienced in competitive situations represents an athlete's internal conflict that cannot be expressed to others. Anxiety is divided into cognitive anxiety (feeling uneasy or anticipating failure) and physiological anxiety (irregular breathing), both of which are not independent but have a close interrelationship and impact on athletic performance (Jeong Cheong-hee, 2003). In competitive situations, problems often arise due to excessive arousal and anxiety. Therefore, sports psychologists employ anxiety reduction techniques such as autogenic training, meditation, breathing exercises, as well as cognitive methods such as cognitive restructuring and thought stopping.

2.1.3 Confidence training

Sports psychologists report that confident athletes have a strong belief in their ability to successfully execute desired behaviors and possess a high level of belief in their ability to acquire the aptitude and necessary techniques to enhance their latent abilities (both physical and mental). Confidence is characterized by high expectations for success, and such confidence is linked to specific successes. However, excessively low or high confidence can hinder athletic performance. Excessive levels of confidence, whether too low or too high, weaken motivation, limit efforts toward goals, and hinder maintaining an appropriate arousal state. Especially if confidence issues arise from setting outcome-oriented goals, it may be necessary to revise them to process-oriented goals. Confidence triggers positive emotions, enhances focus, influences goal-setting to strive for achievement, and impacts game strategies (Jeong Cheong-hee, 2003).

Confidence is a crucial psychological factor that significantly influences athletic performance outcomes. Ultimately, enhancing confidence for optimal performance entails several key steps. First, thorough preparation for the competition is essential, as readiness fosters confidence. One must undertake every possible task to assure oneself of victory. Second, cultivating a habit of positive thinking is necessary. The difference lies in the interpretation of the same situation from a different perspective

between those who think "this is likely to fail" and those who think positively. Third, regulation of arousal states is necessary. Managing arousal levels appropriately according to the demands of the competition leads to sufficient confidence. Fourth, one must learn to believe in oneself and what they can accomplish. Fifth, confidence requires thoughts and actions that align with one's capabilities. Sixth, utilizing appropriate imagery and visualization is crucial. Imagining the ball dropping at the target or affirming one's capabilities through self-talk ultimately instills confidence through implicit assurance of "possibility" (Hong Gil-dong, 2005).

2.1.4 Attention training

Attentional focus is one of the most significant psychological factors influencing performance in sports situations. Athletes directing their attention solely to the game situation, while recognizing factors that influence the game both internally and externally, has been a constant focus of interest in sports psychology. Experimental psychologist James (1890) defined attention as the concentration or focus of consciousness on one of several possible objects or thoughts, retaining it vividly and clearly in the mind, and withdrawing attention from other objects in order to process specific objects efficiently. Applied to sports, this means selecting the most necessary and appropriate cue (such as movement, technique, reaction, or choice) among various possible cues during a game or competition (Korea Institute of Sports Science, 2000). Ultimately, attentional focus in sports refers to maintaining undivided attention on the game situation without being distracted by the opponent's skills or anything unrelated to the game. If an athlete loses focus by engaging in thoughts unrelated to the game, they may make errors in skill selection or misinterpret the situation, thereby preventing them from performing at their best.

2.1.5 Imagery training

Visualization refers to a mental process where sensory experiences are stored in memory and recalled and performed internally without external stimuli (Murphy, 1994). In the context of athletes, visualization can be understood as mentally rehearsing one's movements by vividly imagining their actions, akin to drawing a mental picture of their athletic skills and the sporting situation. Visualization, also known as mental imagery, is commonly used by athletes and coaches as a training technique to enhance psychological skills and optimize performance.

2.2 Sports confidence

According to Vealey (1986), sports confidence is the degree of personal conviction in one's ability to succeed in sports, which is essentially synonymous with the concepts of competence motivation theory and self-efficacy theory. However, unlike competence motivation theory and self-efficacy theory, which attempt to predict performance based solely on perceived competence and self-efficacy, sports confidence theory incorporates the notion that success is individually defined, making it difficult to predict individual sports behavior based solely on confidence. Therefore, it includes a concept reflecting the tendency to strive for achievement goals, incorporating competitiveness. Furthermore, Jeon Sun-hye (1992) categorized sports confidence as a term indicating the belief in one's clear personal potential for successful sports behavior, classifying it into trait and state sports confidence.

Vealey (1986), based on the theories of Nicholls and Bandura, conceptualized sports confidence by separating it into trait sports confidence and state sports confidence, explaining that both trait and state sports confidence would influence performance.

3. Research Design

3.1 Research tools

This study utilized Heo Jeong-hoon's (2002) Sports Psychological Skills Questionnaire to investigate the differences in self-confidence among Korean disabled athletes through psychological skill training. The questionnaire consists of a total of 7 factors and 28 items, rated on a 5-point Likert scale. In this study, five factors were selected from the seven factors: self-confidence, concentration, goal setting, visualization, and anxiety control. Additionally, the Sports Self-Confidence Questionnaire (SSCQ) developed by Vealey et al. (1998) and translated by Kim Won-bae (1999) was employed. Based on previous domestic studies, four factors of sports self-confidence were selected: ability demonstration, social support, coach leadership, and physical/mental readiness.

3.2 Research procedure

The research procedure of this study involves selecting participants and then contacting them for initial briefing and explanation of the study's overview and objectives. Consent to participate in the study will be obtained during this initial contact. Subsequently, the research team will visit the participants and conduct the survey. Just before the survey is conducted, the purpose of the study will be thoroughly explained to the participants, and the necessary measurements for the study will be taken. The questionnaire, prepared in this manner, will be collected directly by the research team.

4. Research analysis

The collected data were examined for missing data and response bias, and any such data were excluded from the analysis, ensuring that only valid data were included. Data processing will be conducted using SPSS 26.0. Specifically, group-based reliability analysis and factor analysis of psychological skills and self-confidence will be performed. Additionally, correlation analysis, t-tests, and ANOVA analysis will be conducted to examine relationships among variables.

5. Conclusion

The anticipated outcomes are as follows, bearing in mind that actual results may vary:

Firstly, it is expected that there will be predominantly positive correlations between psychological skills and self-confidence among disabled athletes. This implies that higher scores in psychological skills will correspond to higher levels of self-confidence. Additionally, it is predicted that these correlations will be higher among female athletes compared to male athletes. This prediction aligns with the findings of Kim Jae-won's (2006) study on general athletes, which demonstrated that psychological skill training has a positive impact on self-confidence. Therefore, it is anticipated that the psychological skills and self-confidence characteristics of disabled athletes will show similar results to those of general athletes.

Secondly, it is predicted that among athletes classified according to disability severity, those in class 2 and 3 will exhibit a stronger relationship between psychological skills and self-confidence compared to those in class 1. With the exception of class 4 athletes, it is anticipated that psychological skills will have a significant influence on self-confidence. These findings suggest that the reliance on psychological skills may be minimal for milder disabilities, while a deeper level of disability is expected to be associated with a closer relationship between psychological skills and self-confidence.

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SSBA-42

Rural center revitalization project resident capacity building education Analysis of resident satisfaction before and after

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1. 연구의 배경 및 목적

•본 연구의 목적은 농촌중심지활성화사업이 주민들 삶의 질에 미치는 영향을 분석하는 데에 있다. 이를 위해 실제 사업이 시행된 지역을 선정하여 해당지역 주민들을 대상으로 한 설문조사를 통해 이들 사업이 주민들 삶의 질에 어떤 영향을 미쳤는가를 파악하도록 한다. 주민설문조사를 통해 얻어진 데이터를 가지고 순위프로빗(ordered probit)모형을 적용하여 주민만족도에 미치는 요인을 추정하고자 한다. 설문조사는 일반농산어촌개발사업의 중요사업이라 할 수 있는 농촌중심지활성화사업이 시행된 지역 한곳을 선정하여 시행하고자 한다. 농촌중심지활성화사업의 일환으로 진행되어진 주민역량강화교육사업에 참여한 지역주민 이용만족도에 영향을 미치는 요인과 일반농산어촌개발사업 중 농촌중심지활성화사업을 진행한 주민들의 사업진행에 따른 인식변화와 만족도를 분석하는데 있다. 이를 위해 농촌중심지활성화사업이 진행된 지역 한곳을 선정하여 사업 시작 직후와 사업이 종료된 후에 설문조사를 통해 주민인식변화를 조사하고 주민만족도를 파악하고자 한다.

2. 연구의 이론적 배경

1950년대 후반과 1960년대에 '지역사회개발사업'과 '시범농촌건설사업' 및 '초가지붕·부역개량사업' 등의 사업으로 시작된 우리나라 농촌지역개발사업은 중앙정부의 주도로 농업생산기반과 농촌 생활환경정비 중심의 SOC사업 위주로 시작하였다.(김솔희 외, 2020).

이는 경제적 효율성을 기반으로 하여 농촌지역의 생활환경개선에는 기여하였으나 지속적이고 체계적인 농촌정주환경을 조성하고 농촌다움을 유지하기에는 미흡하였다고 볼 수 있다.

사업의 대부분이 정부 주도로 추진하면서 지역의 특수성이 고려되지 않았고, 또한 하향식 방식으로 추진되다보니, 그로 인해 주민들의 주도적인 참여가 어려워 정부정책의 일관인 시설지원으로 끝나는 경우가 대부분이었다.

하지만 지방분권시대로 들어서면서 농촌 공간의 다원적 기능과 농촌다움이 중시되면서 농촌지역개발사업의 방향도 농촌주민의 삶의 질 향상으로 전환되고 사업에 주민의 주체적인 참여가 중요하게 되었다.

지역의 경제적 효율성과 지역민의 경제적 효율성보다는 지역적 다양성, 환경, 생태 등과 문화유산 등을 중시하게 되었고, 계획에서부터 주민의 적극적인 참여를 기반으로 바뀌게 된 것이 현 시점의 상황이라고 본다.

2. 연구의 이론적 배경

이와 같이 일반농산어촌개발사업은 농산어촌지역의 주민 소득과 기초 생활수준을 높이고 농촌 어메니티 증진 및 계획적이고 획기적인 개발을 통하여 농산어촌 인구유지 및 지역별 특화 발전을 도모하는 것에 목적으로 하는 사업이다(농산어촌지역개발 공간정보 시스템, <https://www.raise.go.kr/>). 모든 농촌지역개발사업은 각각의 근거법에 의해 추진되고 있으며, 사업의 공간 범위는 마을, 마을권(권역), 읍·면지역, 읍·면소재지, 시·군 지역 등을 다양하다. 일반농산어촌개발사업을 구성하고 있는 사업 중 읍·면단위 개발사업의 종류 및 내용은 <표 2-1>과 같다.

사업명	주요 내용
소도읍 개발사업 (1990-2001)	1,443개 소도읍을 중심으로 지역정체 활성화 및 주민복지 증대, 지역중심 기능강화
소도읍 육성사업 (2003-2012)	194개 읍지역을 중심으로 사회 문화경제적 거점 육성 및 특성화
거점연소제지마을종합개발 (2007-2012)	거점연소제지를 대상으로 중심지의 기능을 정비하고 정주서비스 기능 확충
읍면소재지종합정비사업 (2012-2014)	일반농산어촌지역(120개)의 읍면 소재지를 대상으로 중심지의 거점 기능강화 및 기초서비스확충 (기초생활기반, 지역소득, 지역정관, 지역역량)
농촌중심지활성화사업 (2015-현재)	일반농산어촌지역(120개)의 읍면 소재지를 대상으로 중심지의 사회문화경제적 특성 강화를 통한 중심지기능 강화 및 배후마을 서비스 연계
기초생활거점조성사업 (2018-현재)	상위서비스 거점인 농촌중심지의 기능을 보완하면서, 농촌중심지 접근이 상대적으로 제한된 배후마을 주민들에게 서비스 공급 거점을 마련

<표 2-1> 일반농산어촌개발사업(읍·면단위)의 종류 및 주요내용

2. 연구의 이론적 배경

자치분권 시대에 새로운 농촌정책 추진체계로 '농촌협약' 제도가 도입되면서 농촌중심지활성화, 기초생활거점, 신 활력플러스 등 거점 조성 관련 사업 추진 지역밀착형 사업으로 판단된 마을만들기사업(사업내역 포함)은 지방 으로 이양이 결정 되었다.

일반농산어촌개발사업은 주민들이 쉽게 체감하고 주민들의 삶의 질에 직접 영향을 미칠 수 있는 방향으로 변경되 고 있으며, 2022년 변경된 일반농산어촌개발사업 중 읍·면단위 변경내용은

<표 2-2>와 같다.

정부와 지자체가 협약하여 '농촌지역 생활권 활성화'라는 공동의 목표를 달성하기 위해 지자체가 스스로 수립한 계획을 바탕으로 필요한 사업을 패키지로 지원하는 제도를 '농촌협약'제도로 일컫는다.

각 지자체들은 협약에 앞서 마을만들기 등 지방이양 사업과의 연계가 되어야 하며 시군의 장기발전계획(20년)인 농촌공간 전략계획 수립과 통합적 사회계획(5년)인 농촌생활권 활성화 계획수립을 필수로 하며 전담부서, 농촌협 약위원회, 중간지원조직 등 농촌협약 추진체계가 구성·운영되어야 한다.

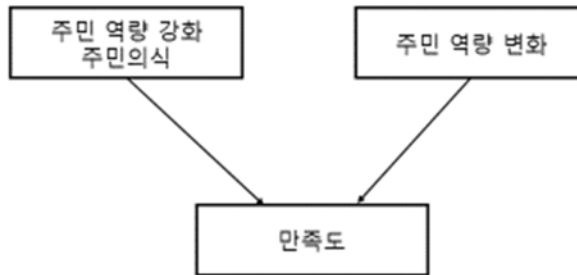
2. 연구의 이론적 배경

사업명	세부내용
농촌중심지활성화사업	• 사업비 : 150억원* (국비 70%, 지방비 30%) - 읍면소재지(10개읍에 한함) 신항가능 - 지역개발 전담부서 운영(대형) : 10억원 - 군청소재 읍, 단 중심지 연계 : 30억원 - 공공임대주택 조성 포함 시 : 50억원 - 총 사업비 10%이상 배후마을 전담 프로그램(50%) 의무화 - 지역소속농가사업, 지역정관예산사업 제외 • 사업기간 : 5년 이내
기초생활거점	• 사업비 : 40억원* (국비 70%, 지방비 30%) - 읍면소재지(10개읍에 한함) 신항가능 (일반농산어촌지역 11개 시·군) - 기 구축된 거점이 없는 자구는 배후마을 커미스 연결매체 구축사업(5년제)만 별도로 신청가능(50억) - 지역소속농가사업, 지역정관예산사업 제외 • 사업기간 : 5년 이내
테마형 서비스 거점 조성	• 사업비 : 개소당 최대 5억원(국비 70%, 지방비 30%) • 사업내용 : 시·군이 사회적경제조직 등과 연계하여 읍면소재지 범위 읍면소재지를 소규모 커미스 운영 연결거점으로 조성 하여 높은 곳으로 서비스를 제공하는 것을 지원 • 사업기간 : 3년 • 지원자격 : 일반농산어촌지역 11개 시·군(예산지역 10개 시·군 제외)
시군역량강화	• 사업비 : 3억원* (100만원 단위 신청, 국비 70%, 지방비 30%) - 지원배치 사업 및 사업취지에 맞지 않는 사업 배정은 적당 - '30년도 시군역량강화사업 추진실적 평가결과에 따라 지원한도 조정 - 중간지원조직 등을 시군역량강화사업 전담기관으로 지정하고 기간 운영을 위해 지방비를 지원할인 경우 : 1억원 • 사업기간 : 1년

<표 2-2> 2022년 변경된
일반농산어촌개발사업(읍·면단위)과
세부내용

3. 연구 설계와 방법

• 연구 모형



주민 역량 강화 프로그램

<그림 3-1> 연구모형

본 연구의 연구목적을 달성하고
변수 간의 관계를 분석하기 위한
종합적인 연구모형을
<그림 3-1>과 같이 제시하고, 그
에 맞춰 연구를 진행하겠다.

3. 연구 설계와 방법

본 연구는 선행연구 검토 결과를 토대로 수정 보완하여 작성하고자 한다. 농촌중심지활성화사업의 진행에 따른 주민인식의 변화와 그에 따른 만족도 분석을 하기위한 것이다. 이에 각 측정항목별 연구 목적에 맞게 총 4개 부분으로 구성하고, 사업에 대한 주민 인지 및 참여, 사업에 대한 주민 인식, 주민 만족도 조사, 기본 인적사항으로 설문 문항을 제시 하고자 한다.

<표 3-1>

설문문항의 설계 시 '사업에 대한 주민 인지 및 참여'는 문종화(2012), 이원주(2013), 조소진(2015)의 연구를 토대로 수정 보완 제시할 것이다.

'역량강화사업에 대한 주민인식'은 신예철(2012), 진종현 외(2012), 조소진(2015), 광민애(2019), 의 연구를 토대로 수정 보완 제시할 것이다.

'주민역량강화프로그램을 통한 주민 변화 조사'는 김제안 외(2011), 문종화(2012), 이원주(2013), 조소진(2015),의 연구를 토대로 수정 보완 제시할 것이다.

'사업에 대한 주민 만족도는'는 이원주(2013)의 토대로 보완 제시할 것이다.

4. 주민인식의 변화와 주민역량, 만족도분석

▣ 조사대상자의 특성

경남 고성군 마암면 주민을 대상으로 농촌중심지활성화사업에 있어서 주민역량강화프로그램 진행에 따른 주민만족도의 변화에 대한 설문조사를 실시하고 그 결과 응답자의 인구통계학적 특성을 성별, 연령, 거주 지역, 직업에 따라 살펴보고자 한다.

마암면은 2022년도에 사업이 마무리 된 지 1년 정도의 시간이 흘렀기 때문에 배후마을에 거주하는 주민들의 참여율은 변화가 있을 것으로 보여 진다.

5. 연구의 기대 예측결과

본 연구는 농촌지역에 있어서 주민역량강화프로그램 진행에 따른 주민 만족도를 분석하여 주민역량강화프로그램이 주민들에게 어떠한 영향을 미치는지, 그리고 주민들의 만족도에는 어떻게 작용하는지를 살펴보고 그 목적이 있다.

연구의 대상은 경남 고성군 마암면의 농촌중심지활성화사업이 진행된 마암면 주민(추진위원 및 운영위원 중심으로)이며, 주민역량강화사업이 시작된 2017년과 사업이 마무리 된 후 1년이 지난 시점인 2023년에 농촌중심지활성화사업 및 주민역량강화사업에 대한 주민 인식과 주민역량변화, 주민만족도를 설문지를 통하여 조사, 분석할 것이다.

본 연구결과를 종합적으로 예측해 보면 다음과 같다.

사업초기(2017년)에 비하여 주민역량강화프로그램을 1년간 진행한 후에 주민들의 사업에 대한 인지, 참여도(회의, 교육) 및 주민역량변화가 뚜렷하게 확인 되어질 것이며, 개인 특성 역량, 관계특성 역량, 사회 특성 역량 3가지역량 모두 주민 스스로 커질 것으로 예측해 본다,

* 참고:2023년 마암면 총인구 1,739명(2023년 고성군 통계연보)

주민 만족도 역시 2017년 사업초기보다 높아질 것으로 예측되어진다.
이러한 예측하는 결과를 바탕으로 지금도 진행되고 있고 앞으로도 사업진행 될 농촌중심지활성화 사업이 보다 성공적으로 진행될 수 있는 대안을 도출해 낼 것이다.
주민역량프로그램의 경우 지역 리더의 사업에 대한 이해도에 따라 사업의 성공 여부가 결정되는 경우가 많은 것을 볼 수 있을 것이다. 사업 시작 전부터 지역 리더의 역량을 강화 시킬 수 있는 프로그램을 설계하여 사업뿐만 아니라 사업이 끝난 후에도 지역을 이끌어 갈 수 있는 리더를 육성할 수 있도록 하는 것이 필수적이라고 할 수 있겠다.
본 연구에서 제시하고 있는 농촌중심지활성화사업과 주민역량강화프로그램에 관련된 변수는 참여한 주민의 개인적 특성과 관련된 변수들이 반영되지 못하는 한계가 있을 수 있을 것이다. 그러나, 선행연구에서는 교육의 효과 및 교육과정에 의한 지속적 참여의도를 검증하는 여러 연구들이 진행되었으므로, 본 연구 역시 주민들의 개인적 특성을 반영하여 진행한다면 시사점의 범위가 확대될 것으로 예측 할 수 있을 것이다.

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Analysis on Efficiency and Productivity Changes of Regional Public Hospitals in Mongolia with Data Envelopment Analysis and Malmquist Indices Models

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ABSTRACT 본 연구는 DEA 모형과 Malmquist 생산성 지수 모형 분석 기법을 활용하여 몽골 지방종합병원 효율성과 생산성 변화를 실증적으로 분석하였다. 21개 지역 몽골 공립종합병원의 2017년부터 2022년까지 6년간의 데이터를 수집하였다. Mongolian Ministry of Health/ 몽골보건부, 제무부에서 밝힌 통계 목록. Data Envelopment Analysis(DEA)과 Malmquist 생산성 지수(MPI) 기법을 활용하고 투입변수는 병상 수, 의사, 간호사, 보건의료 인력, 의료비, 산출변수는 총환자수, 의료수익이다. 시 간이 흐름에 따라 기술적 비효율성이 개선되는지, 기술적 요인에 따라 효율성과 생산성이 영향을 미치는지 여부를 밝히는데 중점을 두고자 한다. 결과는 다음과 같다. 대상병원 21개 중 규모수익불변(CRS)인 병원이 6개(28.6%), 규모수익체감(DRS)인 병원이 12개(57.1%), 규모수익체증(IRS)인 기관이 3개(14.2%)인 것으로 나타났다. 몽골지방종합병원의 57.1%는 낮은 효율성으로 업무를 수행하고, 28.6%는 안정적이 며, 14.2%는 향상된 효율성을 보였다. 규모가 축소된 병원(DRS)의 경우 운영 효율 성 개선 계획을 통해 효율성을 향상시키고, 규모가 증가한 병원(IRS)의 경우 규모 확대를 통한 효율성 개선 계획을 수립하는 것이 바람직한 것으로 판단된다. 평균생산성지수가 가장 높은 DMU9, DMU12, DMU21 병원의 경우, MPI가 1.1187로 이는 연평균증가율이 DMU9 병원은 $11.8\% (= (1.1187 - 1) \times 100)$ DMU12, DMU21병원은 각 MPI가 13.54% 11.23% 증가하였음을 의미한다. 기하평균 생산성지수가 꾸준히 증 가한다고 분석되었다. 따라서 지방공립병원이 전반적으로 효율성과 생산성을 향상 시키기 위해서는 정책과 제도적 변화가 필요하다는 판단하였다. 본 연구는 병원 성 과의 변화에 대한 정보를 병원 관리자에게 제공하였다. 본 연구의 결과는 몽골 현지 지방종합병원의 경영 효율성 수준을 보여줄 것이며, 생산성과 효율성에 영향을 미치 는 요인을 파악하고 운영 개선 의사결정에 큰 도움이 될 것이다.

중심어: 자료포락분석, 맘퀴스트 생산성 지수, 효율성, 생산성, 지방종합병원

BTNS-44

Use of Mongolian Natural Zeolite in Agricultural

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Abstract: Zeolites have been increasingly used in various application areas such as industry, even medicine agriculture, and environmental protection. Zeolites are classified according to the proportion of silica and aluminum oxide (Si/Al), and their unique properties have been used in various research in the field of environmental protection. Natural zeolites have gained significant attention as a viable alternative to synthetic zeolites in various applications. More than 40 types of natural zeolites have been identified, and the classification and identification of their types is still ongoing. The most famous are clinoptilolite, eronite, chabazite, heulandite, mordenite, stilbite, and phillipsite. The most common for agricultural applications is clinoptilolite since it has high adsorption, cation exchange, catalysis, and dehydration capacities. Clinoptilolite, one of the components of natural zeolites, is one of the beneficial components of soil and is important for maintaining plant nutrition. Therefore, in this study, the possibility of using Mongolian natural zeolite in the fields of farming and agriculture was investigated.

Key word: Natural Zeolite, Soil, Agriculture

1. Introduction

In 1756, Swedish mineralogist Fredrich Kronstet began collecting well-structured crystals from Swedish copper mines, marking the start of the identification of zeolite as a mineral. Commercial production and consumption of zeolites began in the 1960s. Today, there are more than 40 types of natural zeolites and over 200 types of synthetic zeolites worldwide. Natural zeolites are formed through crystallization reactions in nature, similar to synthetic zeolites synthesized through hydrothermal reactions in laboratories. Volcanic ash from eruptions contains a mixture of alkaline aluminates and silicates. When this ash accumulates in lakes, high-pressure hydrothermal reactions occur in the lower layers, resulting in the formation of zeolites in sedimentary volcanic zones. Additionally, the type of zeolite, mixed material, and distribution form vary depending on whether the zeolite is exposed to water such as seawater, geological water, or hydrothermal water [23]. The most common forms of natural zeolites include clinoptilolite, erionite, chabazite, heulandite, mordenite, stilbite, and phillipsite. In the environmental field, the use of zeolites is considered a suitable method for soil and wastewater treatment due to their low cost and simplicity. Furthermore, zeolites do not cause additional pollution to the environment. Research shows that zeolites are widely used to remove pollutants such as metals and radioactive ions from industrial wastewater [1-8]. It has also been reported that zeolite serves as an

excellent stabilizer for contaminated soils and sediments, thanks to its low cost and ability to absorb heavy metals among various modifications, facilitating remediation efforts [9-17]. Natural zeolite is relatively inexpensive compared to synthetic zeolite, and its environmentally friendly properties have attracted considerable attention as a potential replacement for synthetic zeolite across various fields. In particular, extensive research is underway to explore its efficacy in removing heavy metal ions and various gases from wastewater, as well as its ability to remove radioactive substances from radioactive waste, leveraging its cation exchange properties—an important characteristic of natural zeolite. Moreover, in recent years, zeolite has found use as a soil additive in the agricultural sector, aiming to protect the environment and produce food products that are safe for consumption. Zeolites are known for being nontoxic, ecologically beneficial, cost-effective, and suitable for agricultural applications due to their ion exchange and sorption capabilities. Of particular note is the finding that after zeolite is used as a fertilizer, it remains in the soil and acts as a soil conditioner. Nutrients are absorbed into the zeolite structure when present in excess and released when needed, contributing to soil fertility and plant growth [18, 19]. In this review article, a comprehensive study was conducted on the production of natural zeolite in countries around the world and how it is used in the agricultural sector, and a study was conducted on the possibility of using Mongolian natural zeolite in the agricultural sector

2. Zeolite production in the world

According to the National Minerals Information Center – US Geological Survey (2024), global production of natural zeolite has exceeded 4 million tons since 2020. Table 1 illustrates that the United States, China, South Korea, Jordan, and Turkey are the leading producers of zeolite. In 2023, the United States produced 84,000 tons of zeolite, showing a slight increase from 2022. China reported a production of 200,000 tons of zeolite in both 2022 and 2023, while South Korea produced 160,000 tons in 2022 and 130,000 tons in 2023. It's worth noting that many countries do not report their natural zeolite production separately, often categorizing zeolites under 'other' mineral products or reporting production with a delay of 2-3 years. Furthermore, global reserves of natural zeolite remain undetermined, as some zeolite mining companies do not disclose information regarding reserves.

Table 2 presents sales data for natural zeolite in the United States, indicating that 85,000 tons were sold in 2023, representing a 6 percent increase from the previous year. Approximately 67 percent of domestic sales are allocated for applications in animal feed, water treatment, and odor control. The price of natural zeolite varies depending on factors such as the percentage of zeolite in the product, its physical and chemical properties, particle size, and intended use. As of 2023, the unit price reported by the US Geological Survey ranges from US\$50 to US\$300 per ton and has remained stable since 2018. Furthermore, data on natural zeolite imports and exports have remained unchanged since 2013, with both figures reported to be less than 1,000 tons.

Research data on the utilization of zeolites in the agricultural sector were collected from the Scopus website using the search terms 'Zeolite' and 'Agriculture' for the period 2000–2024, yielding approximately 1586 articles published in the database.

Table 1. Data on global zeolite production (tons)

Mine production	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
United states	59500	61300	65400	74000	69500	64100	75100	73400	82400	86100	87800	86710	85300	77400	84000
Chile	-	-	-	-	-	-	-	-	-	-	-	-	-	297	400
China	2000000	2000000	2000000	2000000	2000000	2000000	2000000	300000	300000	320000	320000	52000	52000	200000	200000
Cuba	-	-	-	-	-	44000	43000	51000	56500	52600	53000	53000	100000	77500	78000
Georgia	-	-	-	-	-	-	-	-	-	-	-	135000	130000	4810	5000
Hungary	-	-	-	-	-	-	-	-	-	-	29000	29000	27000	32000	31000
Indonesia	-	-	-	-	-	-	-	-	-	130000	130000	130000	130000	100000	100000
Japan	155000	140000	155000	-	-	-	-	-	-	-	-	-	-	-	-
Jordan	425000	140000	12000	15000	15000	13000	13000	13000	20000	10000	10000	12000	12000	1000	1000
Korea	165000	235000	240000	230000	230000	230000	205000	191000	120000	144000	144000	131000	130000	160000	130000
Slovakia	90000	80000	80000	-	-	-	-	-	-	-	-	-	-	-	-
Philippines	-	-	-	-	-	-	-	-	-	-	-	-	-	6900	7100
New Zealand	-	-	-	-	-	-	65000	80000	100000	100000	100000	100000	100000	100000	100000
Russia	-	-	-	-	-	-	-	-	-	35000	35000	35000	35000	35000	35000
Slovakia	-	-	-	-	-	-	-	-	-	117000	117000	117000	150000	221000	220000
Turkey	100000	150000	150000	150000	50000	45000	70000	55000	70000	65000	60000	73000	46000	74500	70000
Other	5500	5500	120000	350000	350000	350000	350000	350000	350000	75000	4120	5450	5500	-	-

Table 2. General Information on Zeolites USA

Salient Statistics United States	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Production, mine	63200	57400	60100	59500	61300	65400	74000	69500	62800	75100	75200	82400	86100	87800	86700	87000	77400	84000
Sales, mill	55900	57400	58500	59400	60000	65200	70500	68300	62500	73200	71300	81300	80500	77100	75300	73900	79800	85000
Imports for consumption	0	0	0	200	150	100	5	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Exports	0	0	0	500	400	1100	750	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Consumption, apparent	0	0	0	59100	59800	64200	69800	68300	62500	73200	71300	81300	80500	77100	75300	73900	79800	85000
Price, range of value, dollars per ton	30- 900	30- 900	30- 900	30- 900	30- 900	40- 800	50- 800	50- 800	110- 440	110- 950	100- 400	100- 300	50- 300	50- 300	50- 300	50- 300	50- 300	50- 300

Figure 1 illustrates a significant increase in the number of published articles since 2018, indicating a growing interest in the utilization of zeolites in the agricultural sector. In 2024, the number of articles published in the first quarter alone reached 54, further highlighting this upward trend. Analysis of the data reveals that China and the United States lead in the number of published articles compared to other countries, as depicted in Figure 2.

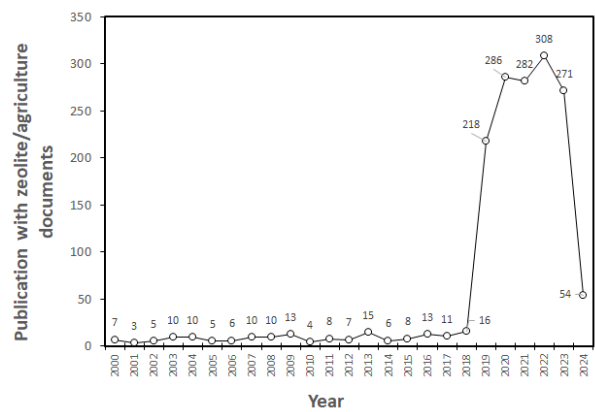


Figure 1. Number of articles published in the Scopus database between 2000–2024

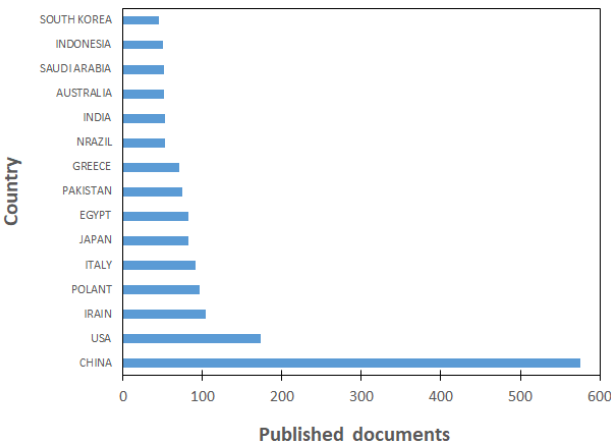


Figure 2. Countries that published articles related to zeolites and agriculture in the Scopus database between 2000–2024

3. Characteristics of Mongolian zeolite

In 1984, the Mongolian-Russian MAS jointly established two expedition teams to discover zeolite in the territory of Mongolia, and in 4 years, 23 occurrences of zeolite and 4 deposits were discovered [20]. Among the aforementioned occurrences and deposits, the Tsagaan Tsav deposit in Saikhandulaan Sum of Dornogovi Province is considered the largest zeolite deposit. Russian scientists have concluded that Mongolia is rich in zeolite, with the main deposit stretching 1200 km in length and 200 km in width in the southeast. As of 2019, Mongolia has discovered more than 50 deposits containing minerals such as clinoptilolite, mordenite, heulandite, chabazite, ferrierite, erionite, analcime, laumontite, and stilbite. [21]. In the 2024 mineral resources statistics, it is reported that there are 5 deposits covering an area of 705.04

thousand hectares, each with a special license for exploitation. The physical and chemical properties of six types of natural zeolites collected from Dornogovi (Tsagaan Tsav, Bor Tsav, Urgen, Teeg, Tushleg) and Umungovi (Derv Dert) provinces were studied. Among these six types of samples, minerals such as clinoptilolite, mordenite, heulandite, and chabazite were found, with the content of clinoptilolite ranging from 20% to 69% [21-23]. Additionally, natural zeolites with high clinoptilolite content exhibited a high cation exchange capacity.

4. Application of zeolite in agriculture

4.1. Application by countries around the world

The International Agency for Research on Cancer classifies zeolite as "non-toxic," and the Food and Drug Administration classifies it as "safe" for human consumption. Consequently, zeolite is widely used in agriculture [24]. Clinoptilolite, a member of the heulandite group of natural zeolites, is the most abundant in sediments and soils, making it the most commonly utilized zeolite in agricultural practices.

Since the 1960s, Japanese farmers have incorporated zeolite into agriculture practices to regulate soil acidity and moisture levels. The porous structure and ion exchange capacity of zeolites make them valuable for carrying and releasing nutrients in the soil. Moreover, zeolites can capture and store nitrogen, gradually releasing it into the environment, thereby enhancing nitrogen compound and nutrient retention. Another advantage is their ability to safeguard agricultural crops against pests and potentially harmful animals. Zeolites have been shown to enhance the yield of various crops, including tomatoes, wheat, potatoes, eggplant, apples, carrots, and other food crops

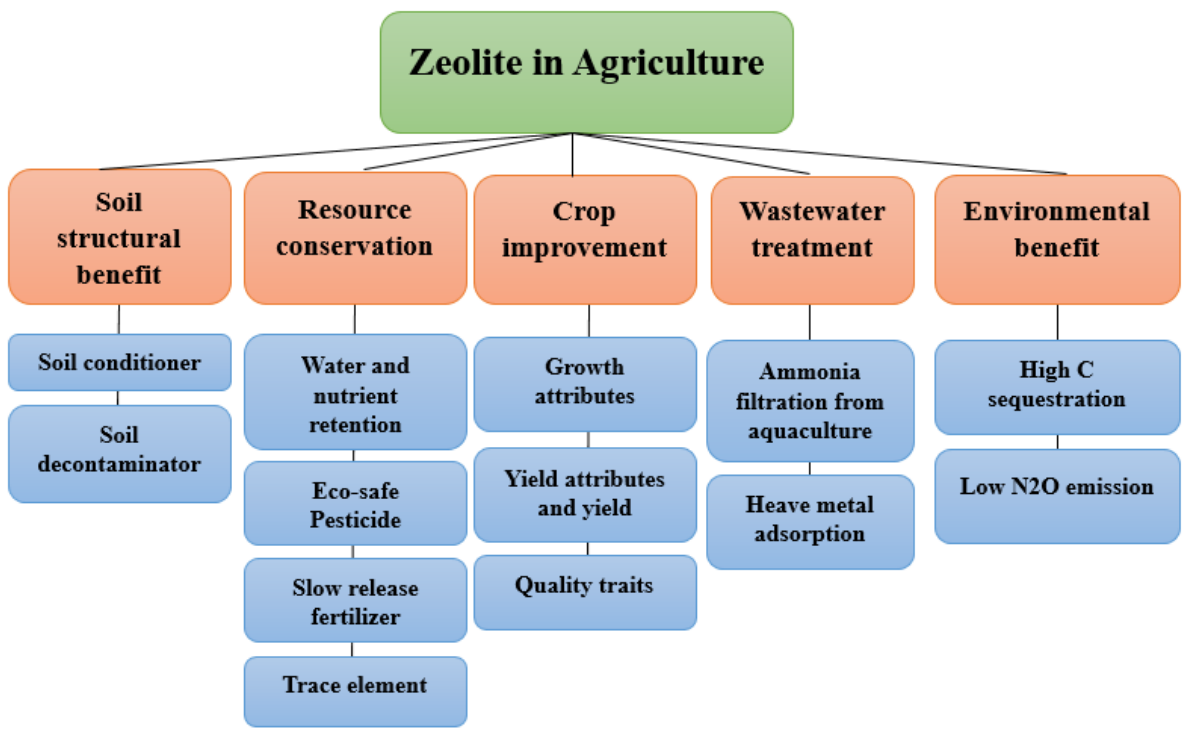


Figure 3. Potential use of zeolite in agriculture [25]

4.2. Use of zeolite as soil fertilizer

Excessive absorption of chemical fertilizers into the soil results in elevated concentrations of nitrogen, phosphorus, potassium, and nitrates in surface and groundwater, posing a significant threat to the environment. Zeolite has been identified as a potential solution to this problem, as it enhances the soil's capacity to retain nutrients and gradually releases elements such as nitrogen, phosphorus, potassium, and nitrate for crop uptake [69]. Several studies have indicated that the combination of zeolite with sparingly soluble phosphate rock results in a sustained and slow release of phosphorus (P), leading to increased dry matter, nutrient content, and uptake by crops [26]. Greenhouse experiments demonstrated that the application of zeolite with ammonium (NH_4^+) and potassium led to increased spinach yield and nutrient uptake by spinach plants. [27]. In 2007, M. Kavooosi utilized natural clinoptilolite to enhance grain yield, nitrogen recovery, and nitrogen use efficiency in rice, reporting significant positive effects of the zeolite and fertilizer mixture [28].

4.3. Use of zeolite as a soil amendment

Zeolite is commonly utilized as a soil additive to enhance the physicochemical properties of soil. It offers several benefits, including increased soil moisture retention, improved yields in acidic soils, and enhanced soil exchange capacity. Moreover, zeolite's slight alkalinity, when combined with compost, reduces the necessity for lime to regulate soil pH levels [29]. Zeolites are recognized as an effective means of enhancing soil conditions, particularly in arid and semi-arid regions. Natural zeolites have been notably utilized as additives in sandy soils in Japan [30]. Several studies have indicated that zeolites enhance the cation exchange capacity of vineyard soils, influence nutrient availability, stimulate microbial metabolic activity, and promote changes in soil organic matter [31].

4.4. Use of zeolite as adsorbent for heavy metals

In recent years, one of the pressing problems in the agricultural sector is the pollution of heavy metals. Due to improper use of fertilizers in the process of production, the soil has been contaminated with heavy metals such as lead, cadmium, zinc, manganese, chromium, copper, and iron. Low pH is the main factor determining the solubility of heavy metals in soil. Under low pH conditions, there is a risk of introducing heavy metals into the trophic chain. In addition, the phytoavailability of heavy metals is related to the concentration in the soil solution. Zeolites generally have a high cation exchange capacity and attract positively charged ions. Therefore, zeolites are widely used for the separation of heavy metals such as cadmium, lead, chromium, zinc, and copper. Numerous studies have identified the potential for ion exchange removal of heavy metals from contaminated soils using natural zeolites. For example, it has been reported that 3.3-4.0 mm clinotylolite can remove heavy metals from sewage sludge composting. [32]. Studies have indicated that incorporating zeolite into grapevine soils can mitigate soil copper levels through ionic sorption [33]. Table 3 summarizes the research work on the removal of heavy metals from contaminated soil.

Table 3. Studies on the use of zeolites in the removal of heavy metals from contaminated soils [34]

Zeolites	Heavy metals	Reference
Natural zeolites	Cd, Pb, Ni	[35]
	Pb	[12]
	Cd, Ni, Pb, Zn	[9]
	Ni	[36]
	Cd, Pb	[37-39]
	Cd	[14, 40]
	Cr, Zn, Pb, Cu, Ni	[17]

Cd, Zn, Pb [16]

Cu [41]

4.5. Use of zeolite as soil water absorbent

Due to its highly porous crystal structure, zeolite has the capacity to retain up to 60 percent of its weight in water molecules. Consequently, modifying the soil water content involves altering the bulk density and aeration porosity of the zeolite. In essence, zeolites augment total porosity and reduce bulk density, resulting in increased soil water content. Numerous studies have demonstrated that incorporating zeolite into sandy soils can enhance water retention [42-44].

4.6. Use of zeolite as a plant protection against pests

Zeolite has been utilized in agriculture to mitigate the environmental impact of plant disease and pest control. Several studies have demonstrated that zeolite's capacity to absorb carbon dioxide and alleviate heat stress can serve as a foliar coating product for combating fungal diseases and pests in agricultural plants [45-48].

5. The possibility of using Mongolian zeolite in agriculture

One of the main sectors of great importance to Mongolia's society and economy is agriculture. The sector, which began to develop rapidly in the late 1950s, produces more than 20% of the total agricultural products, providing food for the population, raw materials for light industry, fodder for livestock, and employment for thousands of people. The year 2023 has been announced by the Ministry of Food, Agriculture, and Light Industry as the "Year of Agricultural Revival". In this context, a goal has been set to fully satisfy domestic needs with 19 main types of food products in the next five years. In addition, in connection with the global trend of emphasizing environmentally friendly and eco-friendly products, Mongolia is paying attention to expanding and increasing the amount of agricultural land, reducing soil degradation, and technological innovation. The Mongolian government determines the types and quantities of chemical fertilizers to be used in order to prevent desertification, improve soil fertility, and rehabilitate according to the "Regulations for the Use and Testing of Pesticides, Chemical Fertilizers, Household Pesticides, Rodenticides, and Disinfection Agents". These determinations are confirmed by the test results of institutes and are renewed annually. In this list, the approved types and quantities of chemical fertilizers are specified, and special permits for the import of fertilizers are issued by the Ministry of Environment and Tourism. Our country has conducted several studies in the field of soil fertility protection and improvement. In 1992, as part of the land policy, a total of 1206.4 thousand hectares of erosion were analyzed, revealing that 12 percent of the total land area was severely eroded. Between 1960 and 1998, over 20.0 million tons of crops were harvested, resulting in the loss of more than 2.8 million tons of essential nutrients. From 1975 to 1992, the country utilized 971.3 thousand tons of mineral fertilizers, with 39.2 percent being nitrogen fertilizers, 55.3 percent phosphorus fertilizers, and 5.5 percent potassium fertilizers (A. Choizhamts, 1999; D. Tsermaa, 2006).

Studies have indicated that 12.6-49 percent of the lost nutrients are replenished. The research results indicate that 658,400 tons of nutrients were lost from the 3.8 million tons of crops harvested between 1999 and 2013, with inadequate compensation. Between 2008 and 2010, an analysis was conducted on 579,314.2 hectares used for crop production in 15 provinces and 347,000.0 hectares of abandoned land in 8 provinces to assess soil fertility and erosion. It was found that 3.7 percent exhibited weak erosion. Additionally, 70.7 percent of the agricultural fields analyzed showed less than 2.5 percent humus content, 59.7 percent had insufficient nitrate content, 34.7 percent lacked mobile phosphorus content, and 55.8 percent had inadequate exchangeable potassium content. Based on the above research, it was concluded

that approximately 140,000 tons of fertilizer are needed annually for planting and main fertilization. As of 2021, proposals for the quantity of fertilizers during planting and growing have totaled 308,800 tons of mineral fertilizers. As of 2021, Mongolia hosts approximately 10 fertilizer plants, collectively producing around 2,000 tons of fertilizer annually. Additionally, the country imports an average of 6,000 to 8,000 tons of fertilizer each year.

Therefore, Mongolia can meet a certain percentage of domestic consumption by substituting Mongolian natural zeolite for chemical fertilizers in agriculture. According to studies on the physical and chemical properties of Mongolian zeolite, clinoptilolite content was found to be the highest. This type of natural zeolite is extensively utilized in various fields including industrial technology, agricultural production, and ecology.

6. Conclusion

The natural zeolite mineral clinoptilolite is the most abundant in sediments and soils and is the most commonly used zeolite in agricultural practice. Given the characteristics of natural zeolite in Mongolia, clinoptilolite mineral exhibits the highest concentration. Therefore, it is feasible to utilize Mongolian natural zeolite across all agricultural domains in an environmentally friendly, ecological, and economical manner.

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SSSES-45

Cost, volume, profit analysis of herder household (Example on Bugat soum of Bulgan province)

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Abstract: Nomadic animal husbandry is a major sector that has a significant impact on Mongolia's economy. As of 2023, Bulgan province accounts for 5.6% of the Mongolia's total livestock, which is higher than the national average of 4.76%. In the situation where herder households earn about 70-80% of their household income from animal husbandry, the high fluctuation in the price of live animals, animal products, and raw materials has a direct impact on the family's income. In the current conditions of reduced grazing capacity, herder households are increasingly interested in selling their animals alive, as the opportunity to raise livestock is decreasing. The price of alive animals varies from region to region, not only affecting household income, but also the problem of calculating the cost of animals is a serious issue. In the study, two scenarios were developed and compared with the aim of establishing the "zero" profitable working conditions of the herder households of Bugat Soum, Bulgan province, through cost, volume, profit analysis. Considering each type of animal, the possible options of the price in terms of sheep head were calculated and further research is needed.

Keywords: Herder, revenue, cost, price, volume

1. Introduction

As of 2023, 64,681.88 thousand livestock were counted nationwide, of which 3,622.89 thousand were counted in Bulgan Province. According to the coefficient transferred to sheep head, out of the total 121,268.9 thousand sheep head, Bulgan province's horse account for 7.27%, cattle 6.49%, camel 0.43%, sheep 6.39%, and goat 4.29%. The total number of livestock of Bugat soum is 3.16% of the total number of livestock of the Bulgan province [8]. Many domestic and foreign scientists such as I.M.Maiskyi, B.Ya.Vladimirtsev, Ya.Tsevel, M.Onuki, and N.Jagvaral have studied the development of Mongolian herder households from all sides. Herder households in Mongolia is not only the basic unit of social relations, but also a form of farming. The economic capacity of pastoral households is directly related to household income. If we look at the herder household in terms of economy, it is a producer (enterprise) on the one hand, and a consumer (household) on the other [1]. As a producer, they produce livestock products (food for the population, raw materials for light industry) and supplies them to the market, and

pay taxes to the state. As a consumer, they use a certain part of your own production. According to the research conducted by many scientists, the herder household earns more than 70% of its average annual income from animal husbandry. However, this income does not come evenly throughout the year, it is seasonal, and the flow of cash income is interrupted in most months of the year. However, in terms of use, it is permanent or continuous. Due to the fact that it is difficult to provide the continuous nature of this consumption with interrupted cash flow, the phenomenon of settlement with sheep and goats, which are random animals, has created the conditions for raising these types of livestock more. In Mongolia, the income structure of herder households was first studied by I.M. Maisky in 1919, by N. Jagvaral in 1948, and by the Institute of Agricultural Economics in 1993. However, in 2002 and 2016, researchers led by A. Bakei studied the composition of the income of herder households during the implementation of the science and technology project "status of pastoral families: economic and financial legal basis" [3]. Expenditure of herder households mainly depends on the number of livestock and herd reproduction indicators, as well as the member of families in the household. It is the main source of expenditure of herder households, which is animal husbandry, forage, inoculations, fences, wells, water for herds, breeding livestock, and family livelihood [11]. The member of families, the number of livestock and the structure of herder households in the regions differ, the prices of feed and breeding livestock are different, the methods of using products are different, and the amount of livestock losses varies from region to region. And it is complicated to compare [7]. According to the "Mongolian Livelihood Survey" conducted by the Swiss Development Agency and the Mongolian Pasture Management Association, A herder household needs to have more than 200 livestock to earn an income equal to the minimum wage [6]. In other words, it is estimated that households with less than 200 livestock cannot cover their expenses with their income. According to the researchers of A. Bakei and B. Purev, an average herder household with 5 member of families can supply products to the market with at least 300 head of livestock [2]. The innovative aspect of this research work is to calculate the result for the household by changing the selling price of the product to a certain extent. This is because most of the research work is done on the production side or on the cost reduction side, and this work explores the possibility of changing the price.

2. Survey Research

Research Materials And Methods: In the study, using the data of 35 herder households in Bugat Soum, Bulgan Province, using cost, volume, profit analysis, the sales quantity (sheep head) and income at the break-even point of the household is calculated, and the potential price and the potential sales quantity (sheep head) in each scenario are also calculated. The main feature of this analysis is the income statement based on the costs, which is calculated in the following way.

$$Q_{be} = \frac{\text{Fixed Cost}}{\text{Weighted average Contribution}}$$

$$R_{be} = \frac{\text{Fixed Cost}}{\text{Weighted average C/S ratio}}$$

Results of the research

Based on the household data of 2023, the cost, production and profit correlation analysis was calculated in 2 scenarios with a variety of product packages, and the results are as follows.

Table 1. Production and sales at the break-even point (thousand.MNT)

Type	Revenue	Variable cost	Contribution	Fixed cost	Net profit	Selling price (thousand.MNT)	Number of selling livestock (sheep.head)
Camel	-	-	-	18,660.00	-	-	-

Horse	38,572.35	30,857.88	7,714.47			220.00	175.33
Cattle	45,084.56	36,067.65	9,016.91			300.00	150.28
Sheep	6,261.74	5,009.40	1,252.35			250.00	25.05
Goat	3,381.34	2,705.07	676.27			150.00	22.54
Total	93,300.00	74,640.00	18,660.00				373.20

Camels are rare in Bugat soum and the above table based on local alive livestock prices in 2023 shows a profit margin (contribution) of 25%. For herder households, fixed costs were calculated based on the minimum standard of livelihood for 5 members of family. By transferring 5 type of livestock to transfer sheep head, the selling price for each type is 150-300 thousand.MNT, while the number of livestock transferred to sheep head is 373.2 during the year. This is the number of livestock at the break-even point, or at least 373.2 head of sheep sold alive for a 5 member of herder household.

Table 2. Production and sales at the point of sale at cost (thousand.MNT)

Type	Revenue	Variable cost	Contribution	Fixed cost	Net profit	Selling price (thousand.MNT)	Number of selling livestock (sheep.head)
Camel	-	-	-	-		-	-
Horse	30,857.88	30,857.88	-	7,714.47	7,714.47)	176.00	219.16
Cattle	36,067.65	36,067.65	-	9,016.91	(9,016.91)	240.00	187.85
Sheep	5,009.40	5,009.40	-	1,252.35	(1,252.35)	200.00	31.31
Goat	2,705.07	2,705.07	-	676.27	(676.27)	120.00	28.18
Total	74,640.00	74,640.00	-	18,660.00	(18,660.00)		466.50

In the case of herder household, when the alive livestock is sold at a price equal to the cost of production, the price of alive livestock is 120-240 thousand.MNT, and at this time, the price of livestock has decreased compared to the previous scenario, and the number of livestock for sale has increased.

Discussion

In 1919, I.M.Maisky calculated the number of livestock in Mongolia as 9.6 million, and he studied the average of 12 livestock per person, and 76.4% of household income comes from animal husbandry [5].

In 1948, N.Jagwaral studied the income structure of herder household and determined that 53% of them come from animal husbandry [10]. In 1993, the Institute of Agricultural Economics conducted a survey of the income and expenses of 96 herder households in 10 soums of provinces representing 5 natural regions and found that 77.7% of household income came from animal husbandry [10]. As a result of the research of the project carried out in 2002 by A.Bakei, it was studied that 75.6% of the income of the herder household comes from animal husbandry [1]. In 2016, A.Bakei and B.Purev calculated the break-even point or the limit at which savings start to be formed for herder households based on the

number of livestock, and the average household has 374 sheep head. Therefore, it is defined that it is possible to meet one's own internal needs with the raw materials and products produced in the given year [2].

Conclusion

Animal husbandry sector is a traditional sector of the economy that occupies a large place in the total national and domestic products. Grazing and degradation is a direct factor in reducing the potential of the livestock sector and has serious negative consequences of increased vulnerability to drought and other risks. Bugat soum of Bulgan province has a combination of mountainous and steppe pasture structure, and the bearing capacity of the pasture has deteriorated, and it is becoming difficult to raise livestock. As a result of this research, the following conclusions are drawn. According to the figures of 2023, when the break-even point is calculated, the price of 1 sheep head is 150-300 thousand.MNT, and the total number of alive livestock for sale will be 373.2 sheep head. To calculate the break-even point at the sale point, the price of 1 sheep head is 120-240 thousand.MNT and the total number of alive livestock to be sold is 466.5 sheep head. Herders should pay attention to the fact that selling livestock in the market is a permanent income rather than a one-time income. The issue of livestock costing in nomadic pastoral herding is difficult and needs to be studied in detail in the future. It was difficult to calculate the break-even point due to the member of families, the number of livestock, and their structure, so it needs to be re-examined.

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SSED-47

Criteria to Evaluate Learning Outcomes

(On the sample of Chemistry subject)

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Abstract: Mongolia approved the "Sustainable Development Concept of Mongolia 2030" by the Parliament resolution no.19. The 4th objective, the education goal, in the 17 sustainable development goals" states "Support equal education and quality education that provides equal opportunities and promote lifelong learning opportunities". Article 3, clause 3.4 of the "State Education Policy" approved by Resolution no. 12 of the Parliament of Mongolia in 2015 states "Basic education shall be developed as a period of acquisition of basic knowledge and skills of life, science, and independent creative learning", and article 7, clause 7.8 of the policy states "Participate in the study of international quality assessment of academic achievement in 2021." The Incheon Declaration was issued by the World Education Forum on "Accessible, Equal, and Quality Education for Lifelong Learning" organized by the United Nations Educational, Cultural and Scientific Organization in Incheon, Republic of Korea in 2015 within the framework of the 4th goal of sustainable development. In the declaration, the vision of Global Education until 2030 is defined as "developing an educational curriculum that is accessible to all, with unified goals and aspirations." It is also emphasized that "quality education promotes productivity and knowledge development and develops analytical, problem-solving, cognitive, personal development and communication skills similar to learning literacy and mathematics." Regarding our country, there is a need to align the concept of reforming the general education curriculum with the above trend. Therefore, in order to contribute to the improvement of the results of the assessment of students' academic achievement, the search for the possibility of effective organization and implementation of lessons and learning activities became the basis for conducting this study.

Materials and methodology

Document analysis method was used to compare and analyze the works of academics on the theory and methodology of the criteria for evaluating the results of teaching and learning. In addition to using analysis, summarization, questionnaire and interview methods to develop and evaluate criteria-based programs, some research results were developed using SPSS software.

Purpose of the research work

Evaluate learning outcomes of high school chemistry courses and analyze evaluation criteria,

Research objectives.

1. Evaluate learning outcomes
2. Make analysis to evaluation criteria and content correlation

Table 1.

No	Learning goals	Objective code for the analysis approach	Evaluation unit	Learning outcomes
1	X6.1a. Explain the properties of matter in solid, liquid, and gas states by the theory of particles of matter. X6.16. Explain changes in the state of matter by the theory of particles of matter.	III.6.1.6 Think about what will happen and make predictions based on previous knowledge and some evidence III.6.26 Plan tests, experiments, and research work by defining the parameters to be monitored, changed, and observed. III.6.2.r Identify facts and evidences to be collected, correctly choose rational method and suitable tools and instruments, and use them safely for the health of others. III.6.3.a Make measurements and observations carefully using the scales. III.6.4.a Explain your hypothesis based on the results of testing and analysis, draw conclusions.	6.1. States of matter and state transitions	6.1.1. The properties and state transitions of matter in different states are described by the particle model.
2	X6.2a. Determine everyday materials and their properties. X6.26. Distinguish between metallic and non-metallic materials	III.6.4.a Explain and draw conclusions based on the results of testing and analysis. III.6.4.b Identify erroneous results from data patterns such as pictures, text, bar charts, schemes, and tables.	6.2. Material properties	6.2.1 Everyday materials are explained based on their properties (water absorption, light transmission, electricity and heat transmission, etc.)

3	X6.3a. Classify materials according to their acidic and basic characteristics using indicators. X6.3b. Explain the phenomenon of neutralization and some of its uses with real-life cases.	III.6.2.b Improve your predictions based on previous scientific knowledge and understanding, choose required sources of information and decide how to use them. III.6.2.r Identify facts and evidences to be collected, correctly choose rational method and suitable tools and instruments, and use them safely for the health of others. III.6.3.a Make measurements and observations carefully using the scales III.6.4.a Explain your hypothesis based on the results of testing and analysis, draw conclusions.	6.3. Acidic and basic characteristics	6.3.1 Explain your hypothesis based on the results of testing and analysis, draw conclusions.
4	X6.4a. Determine the effect of acidic substances and materials on nature and environment. X6.4b. Identify water pollution and its causes.	III.6.1.a Be able to ask questions based on previous experiences and observations, and talk about the importance of proofs and explanations. III.6.1.b Propose a real case that can be analyzed. III.6.2.r Identify facts and evidences to be collected, correctly choose rational method and suitable tools and instruments, and use them safely for the health of others. III.6.4.r Express the conclusions in various ways, explain them to others, and reflect on further improvement.	6.4. Chemistry and life	6.4.1. Concept of pollution is formulated and water pollution is explained by household waste

Correlation of evaluation unit and learning outcomes of chemistry course for VI grade

Table 2

No	Learning objectives	Evaluation unit	Learning outcomes
1	X7.1a. Explain the properties of solid, liquid, and gaseous substances, state changes, gas pressure, and diffusion phenomena using the theory of particles	7.1.Matter state	7.1.1. Able to explain the properties of matter/state of matter, state transition, diffusion, gas pressure/ using the theory of particles.
2	X7.1b. Determine whether a chemical element consists of a single atom or a molecule formed from several atoms. X7.1b. Memorize the first 20 elements of the periodic table X7.1r.Distinguish chemical elements and	7.2.Material properties	7.2.1 Able to distinguish chemical elements and chemical compounds and mixtures based on physical properties and contents.

	chemical compounds and mixtures based on physical properties and contents		
3	X7.2a. Explain the difference between metal and non-metal elements. X7.26. Name common compounds such as oxides, hydroxides, chlorides, sulfates, and carbonates. X7.3a. Express chemical reactions in verbal equations X7.36. Detect chemical reactions using indicators. X7.3b. Identify chemical reactions that are not of practical importance.	7.3. Material change	7.3.1. Able to recognize chemical reactions by their properties and express in verbal equations. 7.3.2 Be able to choose ways to prevent reactions that are not of practical importance/painting, oiling, coating with stainless materials/
4	X7.4a. Determine soil properties X7.46. Determine how human activities affect the environment/soil, water, and air pollution/.	7.4. Chemistry and life	7.4.1. Be able to determine own contribution to soil protection based on soil composition and properties.

Criteria for learning outcomes per evaluation unit, performance levels
/VI GRADE/

Table 3.

Criteria for learning outcomes	Performance levels			
	I	II	III	IV
6.1.1.1. Particles, their motions and state transitions in solid and liquid gases are modeled by the particle model	The given example is distinguished by state of matter and state transition	Predicts state and state transitions of matter from small particle models	Examples of state of matter and state transition corresponding to the particle model are given	Changes in the motion of particles of matter during heating or cooling illustrated by a particle model
	Shows how the movement and arrangement of particles of matter will change during phenomena such as heating, melting,	Quantitative data on melting and boiling points determine the state of existence of matter	Experiments prove that boiling and evaporation are related to state transitions	

	boiling, evaporation, cooling, and freezing			
	The order and motion of particles in the solid and liquid-gas states of matter is described by the particle model	Shape, volume, and fluidity are determined by the arrangement, motion, and force of gravity of a matter in its solid-liquid-gas state	Solids, liquids, and gases are ordered by shape, volume, and fluidity of particles, according to the arrangement, motion, and force of gravity	

Conclusion

By creatively applying evaluation criteria in teaching activities, teachers will have a full opportunity to make realistic and effective evaluations and conclusions about academic success, progress, and changes based on student performance and determine what support and how to provide them.

In the conclusion, by including the criteria-based evaluation in the planning of units and regular lessons, it can be seen that the assessment tasks need to develop tasks that require the ability of the student and develop creativity.

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SSBA-48

Ways to Increase the Attitude of Employees to Work

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Abstract: A big part of any organization's success is its employees. A competent, motivated employee who is dedicated to his work is the main factor that creates wealth and brings success to the organization. Therefore, this paper shows a study on employees' work attitude who work for the Orkhon Azza SOJSC /Orkhon Azza state owned joint stock company/ according to theory and methodology of employees' work attitude. A person expresses positive, negative, pleasant and unpleasant attitudes when communicates with people in daily life, work and school but this is not something that can be changed very quickly. "I like my work" means how a person approaches his work, and the views of researchers about this approach have been summarized in this paper. When the job satisfaction of the employees is bad, it is manifested by the increase of complaints of the employees, decrease in the work performance, deterioration of the product quality, theft, strikes, absenteeism without reason, and many employees leave their jobs. Factors such as choosing the right job, salary, promotion, opportunities for learning and development, management, colleagues, and attitude towards work affect it. Therefore, it is necessary to determine what factors affect the work attitude of employees, what influences their job satisfaction, what methods the organization uses to increase the attitude of its employees, whether it can be rational and realistic, psychological and many other factors on the part of the management to increase the positive attitude of employees. In this article, we issued recommendations on how to have a more effective impact on employees' attitude to their job.

Key words: Work, workers, attitude, work attitude, job satisfaction

SSBA-49

A Study of the Elements Influencing Human Resource Sustainability

(On the example of Natural Textile Group)

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Abstract: According to the last 5 years of research in our country, statistics show that 38 % of the employees of all organizations have left their jobs. There are many direct and indirect costs to organizations associated with turnover. On the other hand, organizations regularly invest a certain amount of money to specialize and empower their employees. When employees leave or transfer for any reason or turnover occurs, it creates a negative impact on the organization. On one hand, the organization should develop optimal policies and strategies for human resource management to provide employees with opportunities to develop, advance, and learn, and on the other hand, managers should make fair human resource management decisions, providing rewards and working conditions, recognizing what the employees have achieved, and aiming at the satisfaction of employees with their work. It is necessary to focus on creating stable working conditions. In particular, modern workers prefer to participate in decision-making processes related to their work and work independently and attach importance to improving the quality of working life and flexible working hours. Nowadays, the main problem faced by organizations is to study and determine the factors affecting the stable employment of employees.

Therefore, my research work is to study the stability of the group's human resources and the factors affecting it and to develop suggestions for improving stability. **Research objectives:** Within the framework of this research, the factors affecting the stability of the employees of the "Natural Textile" group were investigated by considering the utilization of human resources and the stability coefficient, and 75 employees from each of "Erdenet Text", "Erdenet Cashmere", and "Erdenet Carpet" were randomly sampled. A total of 200 employees were surveyed, and reliability analysis and correlation analysis were conducted to determine the possibility of increasing the stability of human resources in the future. The questionnaire consisted of 25 questions in 5 groups, each of which was evaluated using a 5-point Likert scale. Factors affecting the stability of human resources in the research questionnaire such as working environment and conditions, work-life balance, career growth opportunities, management support, salary incentive, and 5 parameters, related to the stability of employees, and how they affect it were studied. The research hypothesis was developed in the following model, related analyses were done and we identified methods and recommendations to increase the stability of human resources in the future.

Keywords: migration, workforce, satisfaction, wages, work environment and human resource sustainability

1. Introduction

In recent years, after examining the stability of the employees of Natural Textile Group and the reasons for leaving their jobs, it was found that factors such as transfers to other organizations, poor salary incentives, and working conditions, or lack of career development opportunities to grow in the profession indicate that there is the need to develop optimal human resources policies for increasing the stability of employees in the organization. Therefore, it is important to study the factors affecting the transfer and stability of human resources of the "Natural Textile" group and develop recommendations to increase the stability of human resources. When studying the relevant books and theoretical and scientific level research works on **human resource stabilization, there is no optimal research at the academic level yet**, and there are several studies conducted on the example of business and health care organizations **in the form of reporting. A review of international research.** There are many studies by foreign scholars on the sustainability of human resources. According to international studies, the general direction of academic studies on the stability of human resources is the following three types.

1. Study of factors affecting the stability of human resources
2. Voluntary and involuntary reasons for resignation
3. Optimal management human resource policy

Table 1.

No	Name of the study and name of the researcher	Explanation
1	Faculty Turnover: Discipline-Specific Attention is Warranted, Yonghong Jade Xu, 2008	In the National Study of Postsecondary Faculty, a survey of 27,000 employees leaving their work was conducted and a multivariate regression analysis was done. This study was conducted in the following areas. It includes: • Individual factors influencing voluntary exit • Professional features • Subjective assessment of work environment • A regression analysis was conducted to study the external factors that influence voluntary resignation. As a result, it was concluded that the working environment has a strong influence on working with stability, in addition to individual factors.
2	A National Study on Their Work life and Satisfaction, Vicki J. Rosser, 2004	Based on data provided by the National Center for Educational Statistics and the National Science Foundation, a survey of 12,555 employees was conducted, and a multivariate regression analysis was done. This study was conducted in the following areas. It includes: • Time spent by employees at work • The goal of employee retention is to keep their work • Professional development • Management support • Technical and technology facilities • Employee satisfaction • Satisfaction with counseling

- Efficiency, safety satisfaction
- Employee's intention to stay in the organization

As a result of this research, it was concluded that the workload of workers in the private sector, especially in the private sector influences long hours of work, job safety, and the salary system affecting negatively the stability of human resources. Performance management is also very influential in evaluating work.

4 A causal model of faculty turnover intentions, John C. Smart, 2009 year

A meta-analysis was conducted by surveying 2,400 workers. The main purpose of this study is to identify the main reasons why employees leave their jobs. Research was conducted in the following 4 areas.

1. Personal and organizational characteristics (eg, occupation, age, gender, marital status,
2. Work environment (eg management involvement, management influence, productivity, salary)
3. Job satisfaction (satisfaction, salary, job satisfaction)
4. What is the main goal to stay in your current organization?
According to the results of the research, job satisfaction and work environment affect stable work. Also, it was considered that the satisfaction of promotion has a great influence. /cotton and Tuttle 1986 /

/Source: Research on the stability of employees of the Department of Health of Orkhon province/

Factors influencing employee retention Fitz - enz (1990) identified that there is no single factor that affects employee retention, but many factors influence it. Researcher Cappelli. P (2000) in his research, points out that several important factors have a good effect on the stability of employees, and the factors directly related to them are as follows.

- Career growth opportunities,
- Working environment and condition
- Work-life balance

Some empirical studies (Kinnear & Sutherland, 2001; Maertz & Griffeth, 2004; Meudell & Rodham, 1998) determined that competitive wages, friendly relations between employees, a friendly working environment, and job security are key factors influencing retention. According to a survey conducted in the United Kingdom (CIPD, 2005) on workforce formation, stability, and employee migration, the top three factors for leaving were identified as management style, poor learning and development opportunities, and poor career growth opportunities. Hytter. H /2007/ considered job-related factors such as rewards, management style, career growth opportunities, training and development, working conditions, organizational involvement, and professional and personal life balance as factors influencing employee retention. Within the framework of this research, the level of human resource stability was calculated and evaluated by mathematical calculation and analysis, pre-prepared questionnaires from employees by random sampling method, interview, and the reliability of the factors affecting the stability of human resources and the correlation of factors were calculated and evaluated by the SPSS method.

Aim of the study: The aim is to study the stability of human resources of the "Natural Textile" group and the factors affecting it and develop recommendations on the possibility of improving the stability.

Objectives

1. Research the current status and stability of human resources of the "Natural Textile" group.
2. To study the factors affecting the stability of human resources
3. To provide suggestions on improving the stability of human resources of the "Natural Textile" group

Subject Rationale: Based on the last 5 years of research on the stability of employees of organization B, statistical data indicates that 38% of the employees of all organizations have left their jobs. There are many direct and indirect costs to the organization associated with turnover, and when employees leave for any reason, it creates negative effects on the organization. Therefore, it is very important to reduce the turnover of workers and keep the workers stable.

New Side of the Subject: The novelty of this research is that the factors affecting the migration and stability of human resources faced by organizations are analyzed using the latest methods and suggestions are made to increase the stability of human resources.

Significance Of Research Work:

to identify and evaluate the factors affecting the stability of the human resources of the organization and give recommendations to the management staff about the measures to be taken to increase the stability.

Theoretical Part:

The stability of human resources is a complex concept, and it is all activities that encourage highly productive and experienced employees to continue working in the organization, which means "Employee retention". Johnson (2000) defined employee retention as the ability to retain those employees whom the organization does not want to lose for a longer period than their competitors, while scientists Kreifer. R & Kinicki. A (2001) stated that employee retention cannot only reduce the cost of hiring new employees but also improve the economic competitiveness of the organization.

Concept of migration. By answering questions such as why employees quit, what caused it, who quit, and how many employees quit, the organization will be able to take measures to reduce turnover.

Reasons for employees to quit. Employees quit their work for a variety of reasons. For example: transferring to another job, going back to school, getting married and moving, retiring, getting upset about something, salary issues and being fired, taking a break, etc. Although these causal conditions create employee turnover, they are not the same in every organization.

Source: S. Delgermaa Analysis of stable working conditions for employees. 2014

The following factors affect the stability of human resources.

Work environment. Providing favorable working conditions has a significant impact on job satisfaction and productivity. Favorable work environment, safety, organizational relations, colleagues, management relations, and climate has a positive effect on stability. A sustainable working environment for employees is divided into 4 main components.

1. Work
2. Cultural
3. Personal
4. External factors

Nowadays, employees value a healthy and comfortable working environment. Because organizations that do not pay attention to creating a favorable working environment for employees and employees are dissatisfied with the workplace, do not work permanently, and transfer to another work.

Management support. Employee resignation is directly related to management. Top management praise and recognition of employees is very pleasant for each employee and has a positive effect on stability.

Work-life balance. Flexibility of working hours increases job satisfaction and becomes an important factor for employee stability. (Aryee, 1998). Work overload is the basis for being dissatisfied, and dissatisfaction is the main cause of reduced productivity due to working long hours (Kinnunen & Mauno, 1998). Work-life balance is the ability to adjust one's responsibilities, workload, working hours, and work style leading to achieving success.

Salary bonus. An optimal system of remuneration and incentives is one of the important tools for stable employment of employees and attracting competent and good employees to the organization. Countries around the world have begun to abandon fixed salary forms and use a wide variety of incentive methods based on the preferences, needs, and requirements of their employees. If the employer does not pay enough wages, he cannot keep his employees. The organization can keep employees stable for a long time by providing more competitive wages and compensations than the companies operating in the same type of business, and by paying wages that match the performance and skills of the employees.

Career Opportunities Taylor (1997) states that to keep employees stable, the organization should provide development opportunities. People want to change their current status and look for new jobs and new experiences when they reach the limits of career growth and feel that there is no more challenge or possibility.

Methods Of Processing Research Data

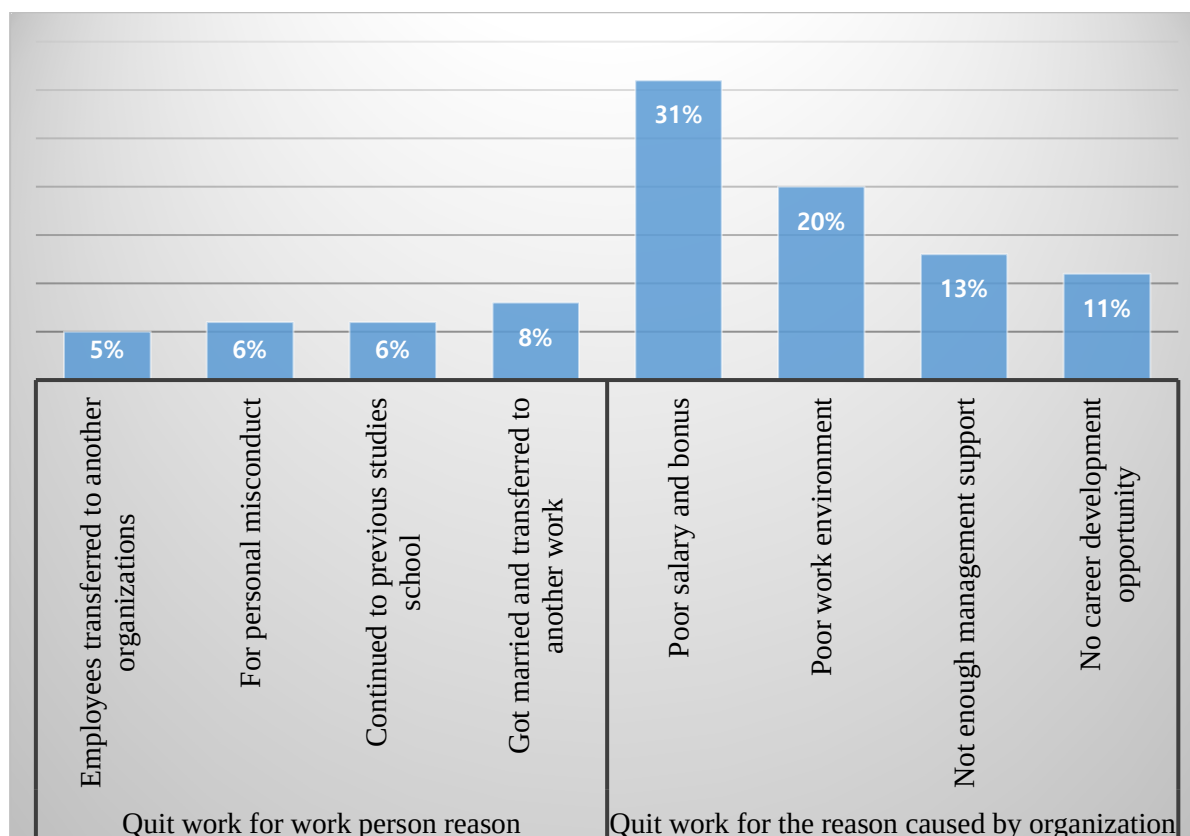
The "Natural Textile" group's human resource stability has been studied for the last 5 years, and the reasons for leaving the job in the previous 5-6 years have been studied with questionnaires and interviews and conclusions have been drawn. In addition, the coefficient of stability for the last 5 years was calculated the mathematical and statistical methods. Factors affecting the stability of human resources including research questionnaire, working environment, and conditions, work-life balance, career growth opportunities, management support, and salary incentives, 5 parameters, related to the stability of the employees were studied, research hypotheses were developed and related analyses were carried out.

Chapter two

2.1. Research on the reasons for the employees of the " Natural Textile" group to leave their jobs /Information of the last 5-6 years/

Graphic 1.

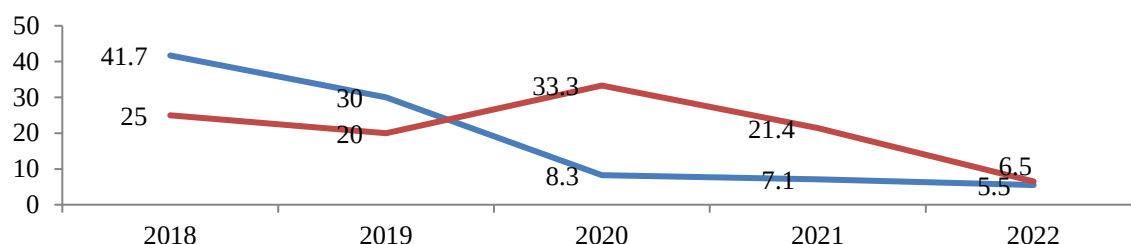




/ Source: Results of own research

As shown in the graph above, for Natural Textile Group, when looking at the reasons for leaving the job in the previous 5-6 years, a total of 75% of employees left because of the organization, 31% of them left because of poor salary and incentives, 20% because of poor working conditions, and 13% because of poor management support. On the other hand, 25% quit due to personal reasons, i.e. 8% got married and moved to another place, 6% quit due to personal misconduct, and 6% quit due to returning to continue previous studies.

Graphic 2. Coefficient of utilization of human resources of "Natural Textile" LLC

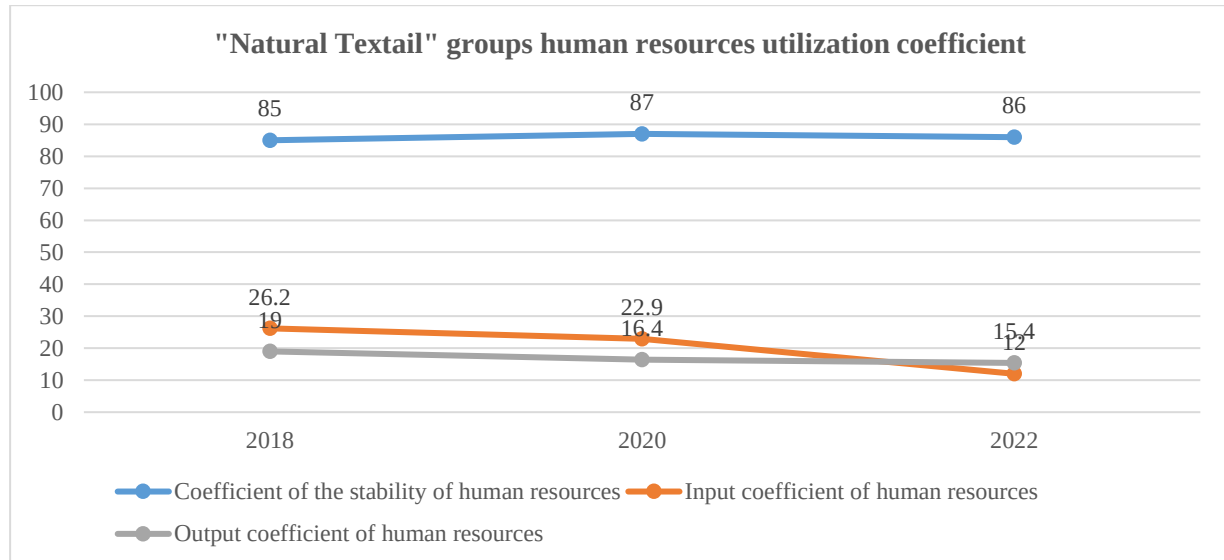


/Source: Results of own research

As can be seen from the graph above, the stability coefficient of human resources was 67 percent in 2018, 75 percent in 2019, and 94 percent in 2020-2022, which shows that the organization's human resources have been unstable. However, the percentage of quitting the job of human resources is 33.3 percent in 2020, which is 13 percent higher than the previous year, which indicates that the number of employees who left their jobs in that year is high. The results of the analysis show that the

coefficient of human resource input is decreasing year by year because of the high coefficient of human resource stability.

Graphic -3 "Natural Textile" group's human resources utilization coefficient



/ Source: Results of own research/

For "Natural Textile" group, the stability of human resources was 86 in 2022, which indicates instability. Although the human resource exit rate for 2020 has decreased from the previous year, the number of employees who leave /a certain percentage every year/ shows that the organization needs to pay attention to its human resource strategic policy. Also, the number of employees who left their jobs in 2022 decreased by 1 percent compared to the same percentage of the previous year.

According to the research conducted on the stability of human resources, the large percentage of input for the "Natural Textile" group shows that the number of people coming to work indicates that the organization attracts a lot of job candidates.

Analysis of factors affecting the stability of the workplace of "Natural Textile" group employees

In this part of the research work, the factors affecting the stability of human resources in the research questionnaire, such as Work environment and conditions, Work-life balance, Career growth opportunities, Management support, and Salary incentives, are related to the stability of employees were studied and a hypothesis was developed and related analysis was performed.

Research methodology and sampling

A sample study to determine the sustainability of the employees of the "Natural Textile" group was taken by a simple random sampling method and a pre-prepared questionnaire.

The questionnaire consisted of two main parts: general information about the individual and determining the stability of the employees.

In the first part : General information about demographic, social and economic issues such as age, gender, education, marital status, company, occupation, work experience, monthly income, etc. was included as optional.

In the second part : , six groups of indicators, 30 questions such as work environment, conditions, work-life balance, career growth opportunities, management support, salary incentives, stability of

employees were measured by rating each of them with points from 1 to 5 on a Likert scale, and the group indicators are shown in table 5. shown.

When determining the level of satisfaction, the corresponding values of the following Likert scale were evaluated for each of the eight groups of questions.

These are: 4.5-5.0 is highly satisfied, 4.0-4.4 is satisfied, 3.0-3.9 is moderately satisfied, ≤ 2.9 is unsatisfactory

Table 2. Questions to measure employee stability

No	Environmental factors	Number of questions to be covered
1	Working environment and conditions	5
2	Work life balance	5
3	Career growth opportunities	5
4	Management support	5
5	Salary bonus	5
6	Stability of employees	5

/ Source: Results of own research/

Processing of the results of questionnaires was done using statistical research and analysis package/SPSS v.25/. Each survey questionnaire was checked for errors, typed into the program, and the results were obtained and used for analysis.

The analysis of the factors affecting the stability of the employees of the " Natural Textile" group was carried out using the model (1).

$$ER_i = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \beta_5x_5 + u_i \quad (1)$$

Here,

ER_i - Stability of employees (Employee Retention)

x_1 – Working environment and conditions

x_2 – Work-life balance

x_3 – Career growth opportunities

x_4 – Management support

x_5 – Salary bonus

u_i – Error section

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ – parameters of the regression equation, which are expected to have a positive sign.

Correlation analysis

The relationship between the 5 main parameters determining the stability of employees and the stability of employees is calculated by correlation analysis and shown in the table below.

Table 3. Correlation analysis results

No	Dimensions or environmental factors of employee retention	Average value	Correlation	Order of Correlation
1	Working environment and conditions	3.84	0.457	2
2	Work life balance	3.71	0.200	4
3	Career growth opportunities	3.72	0.178	5
4	Management support	4.01	0.393	3
5	Salary bonus	4.16	0.557	1

/ Source: Results of own research/

According to the correlation analysis, the most strongly correlated indicator with the stability of employees is salary and bonus, and the weakest correlated indicator is career growth opportunity. The results showed that the correlation coefficient between the stability of employees and the 5 indicators related to it is significantly related, indicating that all of them have a mutual effect.

Analysis of the impact of environmental factors on employee retention

We used cross-section data with 200 samples in our analysis. The econometric evaluation was performed using multivariate regression models and Least Squares method. As a dependent variable, an indicator of employee stability was obtained, and as an independent variable, 5 indicators were obtained to determine the stability of an employee. The 5 groups of non-relevant variables consist of 25 sub-questions, and the average value of the variable is calculated from the evaluations given to the questions belonging to each group. The evaluation was carried out using the Gretl program of econometric analysis, and the results of the evaluation are shown in the table below.

Table 4. Results of multivariate regression analysis

Variable	Coefficient	Standard error	t-ratio /test/	p-value /probability/	Significance
Const	0.460	0.460	0.565	0.031	
Working environment and conditions	0.254	0.048	2.729	0.001	***
Work life balance	0.113	0.023	2.217	0.000	**
Career growth opportunities	0.093	0.022	2.182	0.001	**
Management support	0.148	0.072	2.056	0.000	**
Salary bonus	0.300	0.045	3.778	0.000	***

/ Source: Results of own research/

, * 5% and 1% significance level

If we write the estimated equation from the results of the multivariate regression analysis:

$$ER_i = 0.260 + 0.254x_1 + 0.113x_2 + 0.093x_3 + 0.148x_4 + 0.300x_5$$

Here,

ER_i - Stability of employees (Employee Retention)

x_1 – Working environment and conditions

x_2 – Work-life balance

x_3 – Career growth opportunities

x_4 – Management support

x_5 – Salary bonus

Judging from the evaluation results , the variables are statistically significant. The result of the model $R^2 = 0.843$ is explanatory, and the F test value of 15.54 indicates the significance of the model as a whole.

We conclude that it is possible for the "Natural Textile" group, which is the object of the research, to sustainably employ its employees in the long term through positive changes of these factors.

Results, data analysis

The coefficient of stability of human resources of the "Natural Textile" group should be greater than 5, but it ranges from 8 to 15, which is a very bad indicator. When examining the reasons for leaving the job, it was concluded that 75% of the leavers were due to the organization, and 25% were due to the individual. It has been determined that to improve the stability of human resources in the future, it is necessary to improve the policy of salary incentives, working conditions, and support from the management. The analysis to determine the factors affecting the stability of the workplace of the employees of the "Natural Textile" group was measured by a simple random sampling method, by using a pre-prepared questionnaire, by evaluating six groups of indicators and 30 questions on a Likert scale from 1 to 5. The processing of questionnaires was done using the statistical research and analysis package /SPSS v.25/, and when the relationship between the 5 main parameters determining the stability of the employees and the stability of the employees was calculated by correlation analysis, the most strongly correlated indicator with the stability of the employees for the group was of salary and bonus, the most weakly related indicator was the possibility of career growth. Since the correlation coefficient between the stability of employees and the 5 indicators related to it was significantly correlated, it was considered necessary to increase the stability of human resources in the future, and the following recommendations were developed.

- In the future human resource policy of the organization, it is necessary to actively activate it , and create a salary and bonus system by creating a level hierarchy based on years of service.
- It is necessary to create a working environment for effective cooperation to encourage or inspire employees in the management team. For example, it is believed that holding a meeting to listen to the opinions of employees once a quarter will increase the participation of employees and have a positive effect on the stable employment of employees.
- Develop a program to support career planning to provide employees with the opportunity to grow in their profession.

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SSBA-50

Determining normative levels of indicators for the company's assets and capital structure

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Abstract: One of the primary challenges in analyzing a company's financial statements is establishing the normative level for financial ratio indicators. However, in our country, there lacks a unified methodology for determining these normative levels based on the business sector and company size. Therefore, the goal of this research is to assess the normative level by using working capital as a representation of the capital structure and the debt ratio as a representation of the capital structure. In our study, we analyzed a total of 2,200 samples of companies listed on the Mongolian Stock Exchange (MSE) between 2009 and 2022. Based on our research findings, the debt ratio and the percentage of working capital exhibit a non-linear relationship with profitability indicators. It is advisable to establish the normative level as a median rather than an average value, as normative levels also vary depending on factors such as company size, industry, and economic growth.

Keywords: Debt ratio, return on capital, normative level, working capital

1. Introduction

In the corporate sphere, comprehending the optimal allocation of the company's assets and capital structure, and ensuring the appropriate equilibrium between debt and equity, holds paramount importance in assessing financial health indicators and fostering sustainable future growth [1]. The stable and profitable operation of the company yields a positive impact not only on the organization itself but also on all stakeholders, including investors, customers, and employees [2]. The primary indicators that can determine and evaluate the current financial situation of the company are the current ratio and the debt ratio. The current ratio assesses the organization's ability to meet its short-term obligations with its current assets, while the debt ratio calculates the percentage of external financing in relation to the total assets [3]. A company's survival is contingent upon working capital, which serves as a critical resource for financing and decision-making throughout the operational cycle, spanning from

the procurement of raw materials to the production of final products [4]. Short-term liabilities are typically settled using the cash generated from working capital, and reducing the company's liabilities has a positive impact on financial stability and enhances liquidity [5]. Financial managers and executives prioritize determining the appropriate level of working capital and implementing optimal management methods to ensure sufficient resources and cash to cover short-term liabilities and future planned operations [6].

Establishing normative levels for specific indicators related to the company's assets and capital structure is a common practice aimed at ensuring financial stability, efficient operations, and optimal risk management [7]. These norms can vary across countries and are typically established by regulatory bodies or industry standards. Economically developed nations like the United States, the United Kingdom, and Japan rely on standard norms developed by top institutions for financial stability regulation. They evaluate changes and efficiency in reporting years for branches and organizations, using these evaluations to develop strategic policy plans for the future.

In developed countries, particularly in our nation where the profitability of companies is pivotal amid unstable economic fluctuations for economic growth and development, various regulatory frameworks are employed to ensure financial stability, transparency, and comparability of financial reports. However, unlike evaluating based solely on financial analysis and historical reports, it is challenging to establish normative levels for parameters related to capital and capital structure of companies through standard-setting organizations. Hence, there exists a challenge in establishing normative levels that enable financial comparisons based on factors such as the sector, scale of operations, and asset conditions.

2. Assets and capital structure

An optimal capital structure refers to the resources a company utilizes to finance its assets, operations, and future growth, with financing sources typically encompassing debt and equity. The primary theories in this domain include Modigliani and Miller's theory, trade-off theory, and pecking order theory, all of which aim to elucidate how the departure from normativity influences a company's capital structure [8].

The study of optimal capital structure gained significant popularity following the introduction of Modigliani and Miller's theory [9]. The Modigliani and Miller theory posits that there is no distinction between the utilization of debt and equity and that the composition of a company's capital structure, whether it includes debt or equity, does not impact the firm's value. Additionally, the theory develops propositions I and II. [10]. Proposition I of Modigliani and Miller's theory discusses the impact of taxation, while Proposition II highlights that firms with higher debt financing experience a higher cost of equity capital. In essence, these propositions elucidate how debt influences both the value of a firm and the cost of equity capital. It's important to note that in a perfect market, the capital structure does not affect the firm's value, but in reality, imperfections such as taxes come into play and affect the value of the firm.

The trade-off theory posits that companies aim for an optimal capital structure that strikes a balance between the tax advantages of debt and the costs associated with debt. According to this theory, firms borrow funds until the tax benefits derived from debt outweigh the costs associated with potential financial distress. Empirical research supports this theory by showing that firms endeavor to minimize their weighted average cost of capital (WACC) through prudent management of their debt levels. [11]. Companies strive to enhance value by leveraging debt to minimize tax liabilities and augment cash flow [12]. Non-debt tax shelters provide additional tax advantages such as depreciation and diminish the necessity for debt. Research indicates that companies with greater non-debt tax shelters tend to have lower levels of leverage [13]. There is a positive correlation between the value of real assets and leverage, suggesting that real assets are more readily used as collateral for obtaining loans [14]. The capital structure of Dutch companies aligns with the trade-off theory, as it involves a careful balance between maximizing tax benefits and managing the complex costs associated with debt [15].

Excessive debt elevates the risk of financial distress, which can lead to bankruptcy and associated costs [16]. These costs encompass legal and administrative expenses as well as missed business opportunities. The fluctuation in operating income signifies business risk, with high volatility typically linked to low leverage [17]. Larger companies generally face fewer difficulty costs, making debt financing more accessible for them. It can be inferred that the leverage decisions of Dutch companies are guided by the trade-off between tax benefits and difficulty costs, which are influenced by factors like marginal tax rates and firm risk. The Pecking Order Theory elucidates how companies prioritize their financing options, primarily due to the information asymmetry between managers and investors. This information asymmetry leads companies to favor internal financing over external financing options [18]. When companies require external financing, they generally prefer debt issuance over equity issuance. This preference is driven by the aim to prevent undervaluation of equity, which could diminish the value of existing shareholders. Creditors, on the other hand, prioritize bankruptcy proceedings and are less concerned about the firm's valuation [19]. Hence, companies opt for financing methods that entail minimal disclosure, commencing with retained earnings, followed by debt, and ultimately equity issuance. Empirical studies substantiate the Pecking Order Theory, indicating that profitable companies prioritize internal financing over external sources [20]. Profitable companies typically have substantial retained earnings and lower leverage. Furthermore, liquidity as a percentage of total assets exhibits a negative correlation with leverage, aligning with the theory that firms prioritize internal equity over debt [21]. The Pecking Order Theory can be summarized as emphasizing the influence of information advantages on companies' financial decisions, which leads them to prioritize internal financing, particularly retained earnings, over external sources such as debt and equity issuance [22].

3. Methodology and result of the research

As of March 2024, there are 173 joint-stock companies registered in the MSE. For this study, we utilized a compilation of financial statements from a total of 2,417 samples of companies that submitted their financial statements between 2009 and 2022. However, due to insufficient financial data and missing information in the statements of some joint-stock companies within this sample, we excluded them from the analysis. Ultimately, we analyzed a total of 2,200 samples to ensure data accuracy and completeness. In our study, we investigated the relationship between the working capital ratio ($ETA = \text{Current assets} / \text{total assets}$) and the debt ratio ($\text{liabilities} / \text{total assets}$) with the return on assets ($ROA = \text{Profit before interest} / \text{total assets}$) and return on equity ($\text{net profit after tax} / \text{owners' equity}$). This analysis was conducted across five sectors and different company sizes categorized by the stock exchange. Essentially, we aimed to assess the optimal capital structure of companies using the working capital ratio and debt ratio, while evaluating financial performance through return on assets and return on equity.

[Table 1] Mean and median of indicators, 2009 to 2022

Year	Sample	ROA		ROE		ETA		DTA	
		Average	Median	Average	Median	Average	Median	Average	Median
2009	134	0.2%	0.2%	-3.2%	0.5%	38.8%	36.1%	41.3%	34.3%
2010	92	2.0%	1.1%	5.2%	2.8%	37.6%	34.0%	37.5%	30.8%
2011	181	0.9%	0.5%	0.2%	0.9%	39.3%	36.8%	44.5%	32.5%
2012	195	0.6%	0.4%	10.3%	0.8%	37.8%	34.9%	50.3%	33.9%
2013	194	-0.4%	0.1%	1.5%	0.4%	37.4%	30.5%	49.3%	33.5%
2014	189	-1.7%	0.0%	2.2%	0.0%	37.9%	31.6%	51.1%	38.0%
2015	118	-2.3%	0.0%	5.0%	0.2%	37.3%	31.0%	48.6%	35.3%
2016	176	-1.7%	0.0%	3.1%	0.2%	38.5%	29.5%	48.2%	33.1%

2017	164	-1.0%	0.0%	0.0%	0.5%	36.3%	28.0%	49.1%	31.3%
2018	166	0.0%	0.0%	0.6%	0.8%	38.0%	31.6%	56.2%	35.7%
2019	158	-0.4%	0.1%	5.4%	0.6%	39.7%	33.0%	52.4%	31.2%
2020	151	-0.9%	0.0%	7.3%	0.3%	37.7%	31.4%	50.0%	32.5%
2021	148	-0.2%	0.0%	3.5%	0.6%	40.9%	35.6%	51.0%	33.3%
2022	134	0.7%	0.0%	10.5%	1.1%	39.7%	30.1%	63.7%	38.0%
Дундаж		-0.35%	0.08%	3.61%	0.56%	38.31%	32.45%	49.80%	33.68%

Source. Researcher's estimation

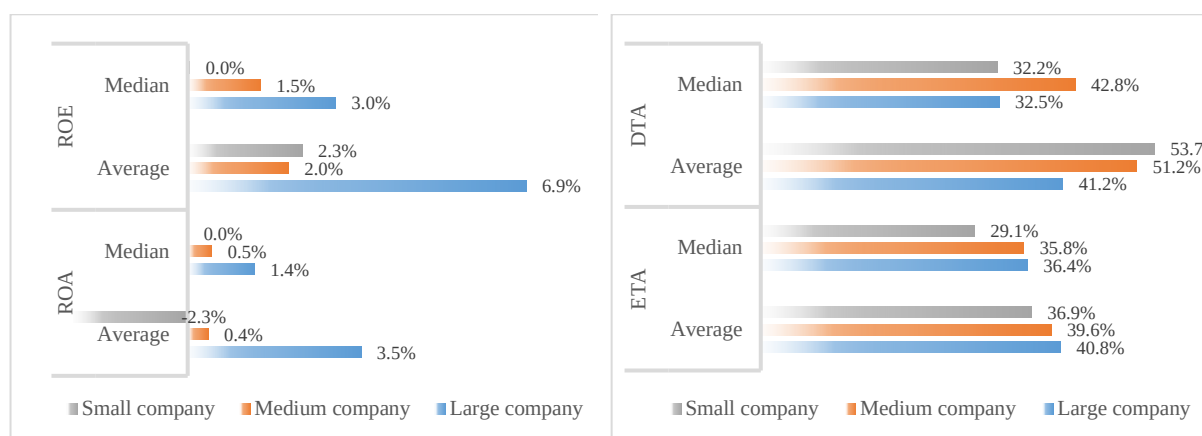
The mean and median values of the financial ratios studied exhibit significant differences from 2009 to 2022. This variability in the normative level of each financial indicator is attributed to fluctuations in economic growth, market conditions, and numerous external and internal factors impacting the company, such as exchange rates, inflation, and loan interest rates. Additionally, notable discrepancies exist between the mean and median values of the ratios. For instance, the average return on equity (ROE) across the entire sample stands at 13.61 percent, while the median value is 0.56 percent. Notably, there are substantial differences observed in the years 2012, 2019, and 2022, indicating considerable variations in other indicators as well. The MSE has categorized its registered joint-stock companies into five main sectors: processing (Sector A), manufacturing (Sector B), food and agriculture (Sector C), transportation (Sector D), and trading services (Sector E). Below are the mean and median values of the ratios for these sectors:

[Table 2] Industry mean and median for each indicator, 2009 to 2022

Sector	Sample	ROA		ROE		ETA		DTA	
		Average	Median	Average	Median	Average	Median	Average	Median
A	408	-0.6%	0.0%	8.4%	0.8%	38.9%	36.0%	59.0%	45.4%
B	494	2.3%	0.4%	5.0%	1.4%	43.1%	40.2%	51.0%	43.4%
C	309	-2.1%	0.0%	5.2%	0.5%	35.3%	29.0%	59.8%	45.4%
D	579	-0.7%	0.1%	1.9%	0.3%	34.2%	24.4%	36.4%	21.8%
E	410	-1.5%	0.0%	-1.6%	0.1%	40.0%	28.9%	50.6%	29.8%

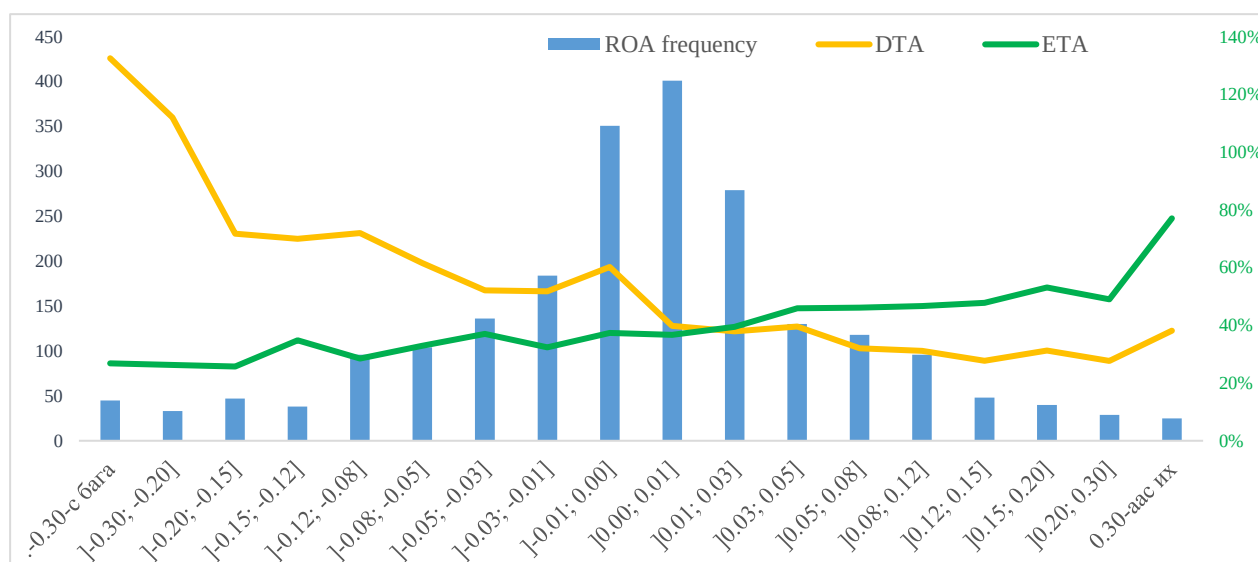
Source. Researcher's estimation

The mean and median values of the indicators also exhibit significant variations across sectors and even within each sector. For instance, in Industry A, the average return on equity (ROE) is 8.4 percent, while the median is 0.8 percent. This discrepancy indicates that while the average ROE for companies in this sector is 8.4 percent, half of the total sample has a return below 0.8 percent. The increase in the industry average is primarily attributed to the exceptional performance of a few companies in the sector with extremely high returns on equity. When ranked based on profitability, Sector B emerges as the most profitable, whereas Sector E ranks as the least profitable. In terms of working capital percentage, Sector D has the lowest figure at approximately 24%, whereas Sector B boasts the highest percentage at 40.2%. Sectors D and E exhibit the lowest debt ratios, with liabilities accounting for less than 30% of total assets, while Sectors A and C have relatively higher reliance on external capital.



[Figure 1] Mean and median for each indicator, by company size

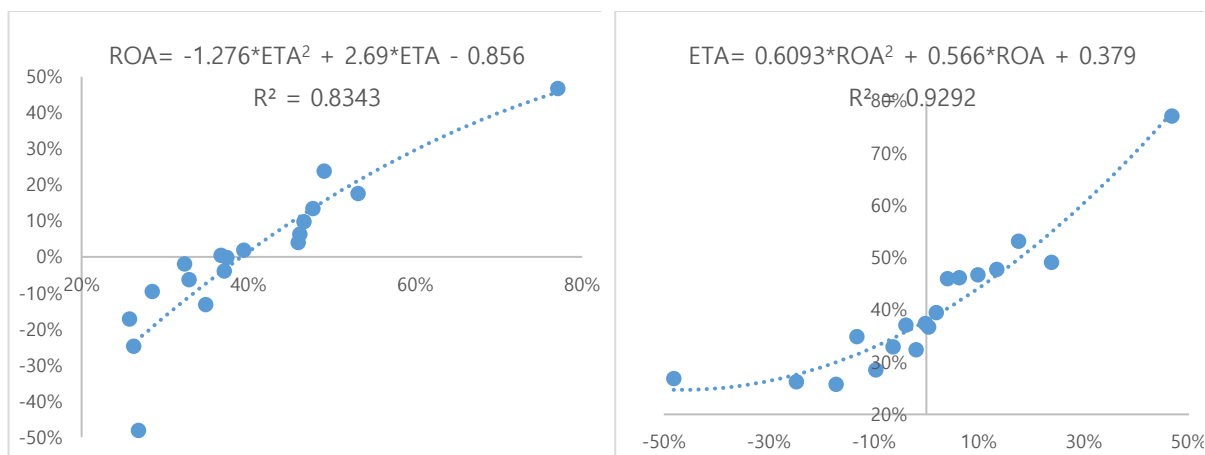
The graph presented above illustrates the average and median values of the indicators based on company size, as per the Minister of Finance's Order No. 2016.02. According to the Law on Non-profit Organizations, approved under Order No. 41 dated 3.4, enterprises are classified as large if their total sales amount exceeds 1.5 billion MNT; otherwise, they are categorized as small or medium enterprises. However, with the enactment of the Law on Support of SMEs and Services in 2019, the classification criteria have been revised. Under this new law, enterprises with sales revenue up to 300 million are classified as micro, those with revenue between 300 million and 1 billion as small, those with revenue between 1 billion and 2.5 billion as medium, and those with revenue exceeding 2.5 billion as large. The average return on equity for large enterprises is 3 percent, with a median of 6.9 percent. In contrast, small enterprises have an average return on equity of 2.3 percent, with a median of 0 percent. This indicates that the profitability of large enterprises surpasses that of small and medium enterprises. Additionally, as the size or sales income of an enterprise increases, the proportion of current assets in its portfolio also increases, while the percentage of liabilities in total assets decreases.



[Figure 2] Histogram of ROA and ETA, DTA correlation

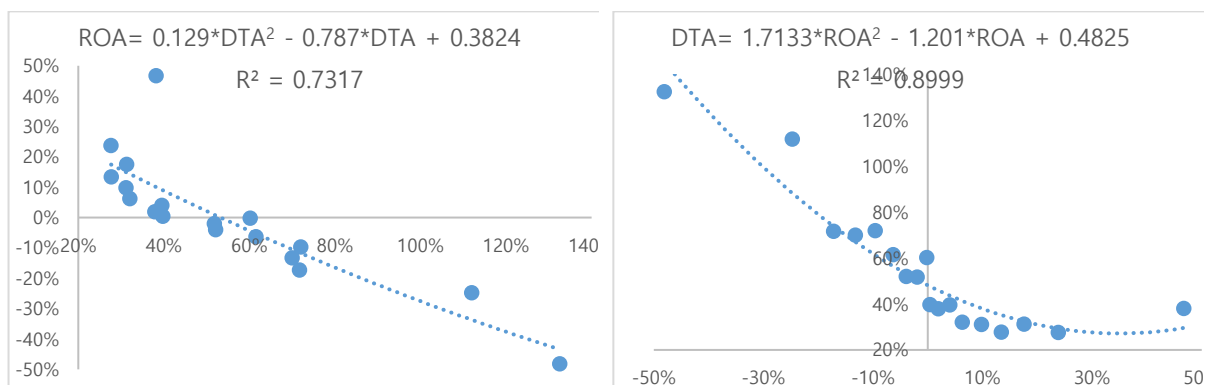
The relationship observed in the study indicates that as the ETA (working capital ratio) of surveyed public companies increases, so does the ROA (return on assets). Conversely, a lower DTA (debt ratio) is associated with a higher ROA. Specifically, a higher working capital

to total assets ratio or a lower liabilities to total assets ratio corresponds to a higher return on equity. However, it's important to note that this relationship is non-linear and follows a quadratic function rather than a linear one.



[Figure 3] Nonlinear relationship between ROA and ETA

The coefficient of determination for the non-linear relationship between Return on Assets (ROA) and the Working Capital Ratio (ETA) is 83.4%, whereas it is 73.2% for the non-linear relationship with the Debt Ratio (DTA). Conversely, the coefficient of determination for the non-linear relationship between ROA and ETA is 92.9%, and 89.9% for DTA.



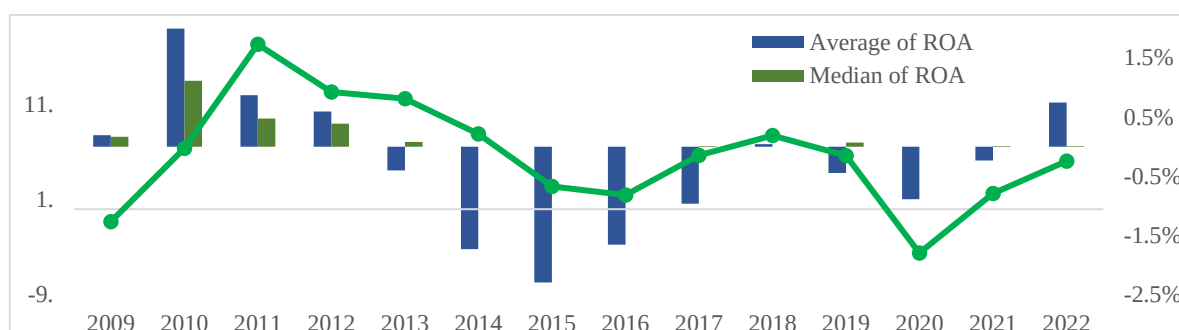
[Figure 4] Nonlinear relationship between ROA and DTA

The correlation between Return on Assets (ROA) and the Working Capital Ratio (ETA) based on company size was 57.6 percent, and -42.8 percent for the correlation between ROA and the Debt Ratio (DTA). It was observed that as the size (annual sales revenue) of the company increased, the Return on Total Assets also increased. It includes:

[Table 3] Mean and median of financial ratios by company size

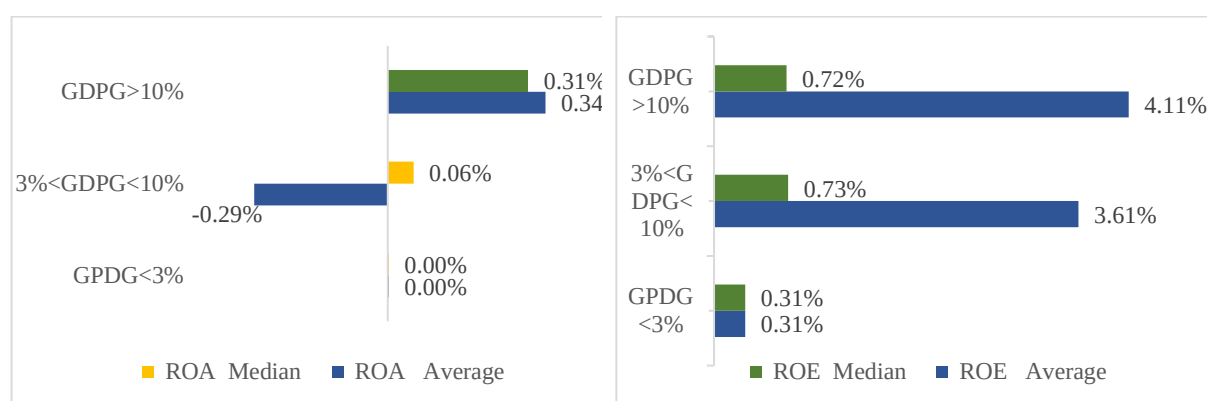
Company size	ROA		ROE		ETA		DTA	
	Average	Median	Average	Median	Average	Median	Average	Median
Large company	3.5%	1.4%	6.9%	3.0%	40.8%	36.4%	41.2%	32.5%
Medium company	0.4%	0.5%	2.0%	1.5%	39.6%	35.8%	51.2%	42.8%
Small company	-2.3%	0.0%	2.3%	0.0%	36.9%	29.1%	53.7%	32.2%

A positive and robust correlation is evident between real GDP or economic growth and the total current assets of public companies. This indicates that economic growth tends to be higher during years when the average and median return on capital of surveyed joint-stock companies is also high. It includes:



[Figure 5] Economic growth and return on capital (average and median)

In years characterized by GDP growth (GDPG) or economic growth below 3% (2009, 2015, 2016, 2020, 2021), the mean and median Return on Equity (ROE) is 0.31%. Conversely, during years when GDPG ranges between 3% and 10% (2010, 2014, 2017-2019, 2022), the average ROE is 3.61% with a median of 0.73%. In contrast, in years with GDPG exceeding 10% (2011-2013), the average ROE stands at 4.11% with a median of 0.31%. It includes:



[Figure 6] Normative level of profitability depending on economic growth

Economic growth serves as a primary driver for the rise in profits and income of companies. However, it's worth noting that the increase in profits and income of companies can also contribute to economic growth. In this context, the relationship between economic growth and the profitability of companies listed in the BSE was assessed using Granger's test [23] with a lag order set to 1. It includes:

[Table 4] Granger causality test results (lags-1)

Pairwise Granger Causality Tests		Sampe: 2009-2022		
	Null Hypothesis:	Obs	F-Statistic	Prob.
ROE 6a GDPG	GDPG does not Granger Cause ROA	13	1.10060	0.3188
	ROA does not Granger Cause GDPG		11.5782	0.0067
	Null Hypothesis:	Obs	F-Statistic	Prob.
ROE 6a GDPG	GDPG does not Granger Cause ROE	13	2.23902	0.1654

ROE does not Granger Cause GDPG

9.14651

0.0128

The Granger test results indicate that Gross Domestic Product Growth (GDPG) is not Granger causal to Return on Assets (ROA) and Return on Equity (ROE). However, ROA and ROE are Granger causal to GDPG at a significance level exceeding 95%. This implies that the profitability indicators of companies are not dependent on economic growth, but rather, economic growth is influenced by the profitability indicators of companies. Finally, we evaluated the effects of ROA and ROE on economic growth using the Least Squares method, and the estimation results were found to be statistically significant. It includes:

$$\text{GDPG} = 3.71208955224 + 13.4053482587 \cdot \text{ROA}(-1) \quad R^2 = 0.598872$$

t-stat 3.121617***

4.052493***

$$\text{GDPG} = 2.47714930925 + 5.60779755579 \cdot \text{ROE}(-1) \quad R^2 = 490633$$

t-stat 1.530099 3.255060***

4. Conclusion

In this study, our objective was to ascertain the principal financial ratios of joint-stock companies registered in the MSE, specifically focusing on the percentage of working capital and the normative level of the debt ratio, alongside examining their correlation with profitability indicators. Our findings led to the following conclusions. It includes:

- Given the significant disparity between the average and median values of financial ratio indicators among joint-stock companies, it is advisable to utilize the median value instead of the average value when determining financial ratios and the normative level of the industry. This approach will yield a more realistic assessment and conclusion.
- The normative values of financial ratio indicators for companies fluctuate annually, influenced by industry characteristics and company size. Given their dependence on numerous environmental factors, it is suitable to establish the normative level of financial ratios for each economic cycle, industry, and company size.
- The normative values of financial ratio indicators for companies fluctuate annually, influenced by industry characteristics and company size. Given their dependence on numerous environmental factors, it is suitable to establish the normative level of financial ratios for each economic cycle, industry, and company size.
- As the size of the company increases, there is an increase in both the percentage of profitability and working capital, accompanied by a decrease in the debt ratio. For instance, if the debt ratio of large companies is 41.2%, medium-sized companies are at 51.2%, and small companies are at 53.7%, it can be inferred that the normative level is being met.
- The profitability indicators of companies exhibit a positive non-linear relationship with the percentage of working capital and a negative non-linear relationship with the debt ratio. It is observed that profitability decreases up to a certain level of turnover ratio and debt ratio, but it begins to increase again beyond that level.
- In years characterized by high economic growth, the average and median profitability indicators of joint-stock companies also exhibit elevated levels. However, economic growth itself does not directly cause an increase in the profitability of companies; instead, there is a notable correlation where economic growth experiences a significant change one year after the profitability of companies

increases. For instance, if the median value of return on assets (ROA) for companies rises by 0.1 points, economic growth sees an increase of 1.34 percent after one year. Moreover, when economic growth is below 3%, the average Return on Equity (ROE) stands at 4.11%; within the range of 3 to 10 percent economic growth, the average ROE is 3.61%; and for economic growth exceeding 10 percent, the average ROE rises to 4.11%.

- To enhance this study, it is recommended to establish the normative level of other financial ratios not initially included. Additionally, investigating the relationship between inflation rates, interest rates, and other macroeconomic indicators besides economic growth would provide valuable insights.

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SSED-51

Teaching Volleyball Techniques to boys aged 11-12 years

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Abstract— The chance to reach the pinnacle of success in sports competitions is linked to consistently choosing volleyball players from a young age. Volleyball abilities and physical traits play a crucial role in determining which young athletes are chosen to represent their region or country. The process involves using specific materials and methods, including diagnosing and tracking the progress of talented athletes, to identify the most promising individuals and provide coaches with valuable insights to tailor their training programs accordingly. The objective of this research was to investigate the impact of 6-week training program that combines jump and ball throwing exercises on the performance of both upper and lower extremities in young male high school volleyball players. In Darkhan-Uul, Mongolia, a group of 18 young male volleyball players at the Sport Center were split into two groups. The first group, known as the experimental group, consisted of 9 players with an average age of 13.0 ± 2.0 years, height of 1.5 ± 0.3 m, weight of 48.0 ± 5.0 kg, and body mass of $18.7 \pm 1.4\%$. The second group, known as the control group, also consisted of 9 players with an average age of 13.5 ± 0.6 years, height of 1.5 ± 0.1 m, weight of 48.5 ± 4.7 kg, and body mass of $19.3 \pm 1.7\%$. The experimental group received additional plyometric and ball throwing exercises in addition to their regular volleyball practice, while the control group only underwent their usual training session. The research shows that when young male volleyball players participate in an 8-week program that combines jump training with ball throwing exercises, their muscular performance can greatly improve. This information could be beneficial for physical education teachers and volleyball coaches who work with these athletes.

Keywords— schoolchildren, volleyball, High school, physical development

1. INTRODUCTION

Volleyball stands as one of the most widely embraced sports globally, prompting numerous research endeavors aimed at enhancing training programs to optimize overall physical performance for volleyball athletes. Regrettably, the scientific comprehension of this matter still lacks clarity, as many young players rely more on personal experience rather than evidence-based guidance to enhance muscular performance. Notably, volleyball demands robustness in both the upper and lower body, underscoring the significance of cultivating muscle strength and honing specific technical abilities, particularly crucial for young athletes and female players striving for success. The current global sports development trend focuses on enhancing the training and coaching techniques of elite athletes with the potential to compete for Olympic medals. In Mongolia, the organization of modern sports is deeply rooted in the country's rich history and cultural heritage, aligning with global sports development laws and trends. Advanced methods tailored to the unique nature, climatic seasons, and special characteristics of Mongolian physical development and mentality are implemented. The process of selecting young individuals for

specific sports disciplines, followed by consistent training to foster skill development, is driven by societal needs. Ball games necessitate a wide range of abilities, encompassing physical, technical, mental, and tactical skills. Of these, the physical capabilities of players play a significant role in both individual player skills and team strategies, as ball games involve frequent bursts of maximum effort like sprinting and leaping. As a result, players need to possess physical attributes that enable them to execute quick and forceful movements, as well as aerobic and anaerobic capacities that allow them to sustain intense offensive and defensive actions over extended periods. Thus, the objective of this study was to assess the impact of an 8-week combined plyometrics and ball throwing regimen on the performance of both the upper and lower body in young volleyball players. The hypothesis was that the training group would experience enhanced jumping and ball throwing abilities as a result of their specific training.

2. METHODS and RESULTS

In order to assess the impact of plyometric and ball throwing training on the performance of young volleyball players, two groups were formed: an experimental group and a control group. This study took place over a 6-week training program and involved a randomized controlled study with a team of young male volleyball players at the start of their competitive season. The players were divided equally at the beginning of the study, with half of each team receiving the plyometrics and ball throwing program in addition to their regular volleyball practice, while the other half continued with their usual training. To ensure reliable and accurate results, we selected protocols that were both time-saving and had been previously used in similar studies. The control group completed their regular volleyball session without any specialized training program. The participants were members of the district-level team in their age group, and none of them had previous experience with strength training. Each participant's parent provided written consent and was fully briefed on the study's protocol before their child's involvement.

1. The participants were given a chance to get to know the various tests before the pretest by practicing them. This was done to prevent any influence on their performance due to learning during the actual test. Both the pretest (T1) and posttest (T2) involved measuring the maximum countermovement jump and throwing a medicine and volleyball ball. To ensure consistency, all the tests took place indoors to avoid any interference from weather changes between the pre- and posttest. The international standards for anthropometric assessment were used to measure the total height (in meters) and body weight (in kilograms). An experienced operator conducted the collection of anthropometric data, including weight, height, circumferences, and skinfold thickness, following established protocols. The average of three measurements was recorded. The participant began the test with a warm-up that lasted approximately 15 minutes. Then, their explosive strength in the lower limbs was assessed through a counter movement jump (CMJ). To perform the CMJ, the participant started from a standing position with their hands on their waist on a contact mat. They made three attempts with a 2-minute break in between each one. Another test conducted was ball throwing, which measured the participant's performance using a 1.5-kg medicine ball (MBT) with a diameter of 0.60 m and a volleyball ball (VBT) weighing 1 kg. For this test, the participant sat on a chair with their back against the chair and held the ball in front of them with both hands. They made three approved attempts with 1-minute rest intervals. The training program outlined in Table 2 offers a comprehensive overview of the exercises involved. These exercises are specifically designed to target explosive power in the lower limbs by focusing on jump height and short ground contact. To ensure progress, the training program follows the principle of overload, gradually increasing intensity. The experimental group, after their regular volleyball training, engaged in 4 jump exercises paired with medicine ball throwing drills. Rest intervals of 2 minutes between sets and 3 minutes between exercises were implemented to optimize performance. The strength-speed training program lasted for a total of 20 minutes under the supervision of an experienced expert in plyometrics and ball throwing training. In contrast, the control group continued with their regular training routine twice a week throughout the experiment. Before concluding each session, participants focused on stability, balance, and stretching exercises. The training sessions were held every Thursday and Tuesday at 9:00

p.m. for a duration of 6 weeks. It's important to note that during this period, the subjects did not engage in any additional formal strength training activities.

Table 1. Training Program for 6 weeks

Exercises	Bilateral jump (without bending knee)	Bilateral jump (with bending knee)	Unilateral jump shot	Unilateral jump as far as	Medicine ball throwing
Session 1	3x20	3x10	3x10	2x8	3x8:1kg
Session 2	3x20	3x10	3x10	2x8	3x8:1kg
Session 3	3x20	3x10	3x10	2x8	3x8:1kg
Session 4	3x25	3x10	3x10	2x8	3x8:1kg
Session 5	3x25	4x10	2x10	3x8	2x6:1kg
Session 6	4x20	4x20	3x10	3x8	2x6:1kg
A 2-minute rest period was allowed between sets and different categories. For instance, 2 sets of 6 reps with a 1 kg medicinal ball would be denoted as 2 x 6:1 kg, while 3 sets of 12 reps would be represented as 3 x 12.					

At the commencement of the protocol, there were no notable variances in anthropometric or power variables among the groups ($P > 0.05$) as indicated in Table 3. Height, weight, and BMI remained unchanged between the initial (T1) and subsequent (T2) assessments for both the experimental and control groups with no significant alterations observed ($P > 0.05$). Noteworthy enhancements in the throwing distance of the medicine ball (1.5 kg) and volleyball ball (1 kg) were evident in the experimental group (3% and 17.8%, respectively, $P = 0.00$) concerning the upper body. Additionally, a significant improvement in countermovement jump performance was noted (19.1%, $P = 0.05$). Significant time-related effects were observed for CMJ, MBT, and VBT ($F = 32.4, 29$, and 13.9 , respectively; $P < 0.05$). Conversely, the control group did not exhibit any significant enhancements in these parameters (MBT, VBT, and CMJ, $P > 0.05$).

This study aimed to investigate the impact of a six-week program combining plyometrics and ball throwing on the overall performance of young male volleyball players, specifically focusing on their upper and lower body abilities. The key finding of this research revealed that the experimental training group exhibited significant improvements in both jumping performance and ball throwing distance within a short training period. Notably, the vertical jump height experienced a remarkable increase of 20.1% solely in the experimental training group, while the control group showed insignificant changes of 3.2%. Furthermore, previous research has also demonstrated an 11.2% increase in jump height after 12 weeks of plyometrics training in male volleyball players, emphasizing the significance of jumping ability as a differentiating factor in their overall performance. The findings of our study align with those of Marques and González-Badillo (2005), who also investigated the impact of strength training on young basketball players using free weights and half squat exercises [22]. They observed statistically significant differences in vertical jump performance in the experimental group. Although our study utilized only a medicine ball without any additional load, we arrived at the same conclusion - strength training is an effective method for improving upper extremity performance in young athletes. However, the difference in training frequency over a period of 6 to 12 weeks may explain the variation in results between the studies. Furthermore, our innovative approach further supports the prevailing evidence that attributes strength gains in prepubertal male athletes more to neural mechanisms rather than muscle hypertrophy.

CONCLUSION

The training program that lasted for 6 weeks and aimed to enhance the speed and strength of the lower and upper body parts had a positive impact on the performance of various tests conducted in this study. Specifically, the experimental group showed improved results in the final measurements after undergoing this program. In our study, we discovered that when young female volleyball players engage in a six-week program that combines plyometrics and ball throwing exercises for both their upper and lower body, it leads to notable improvements in their performance. These exercises help the players adapt and enhance their skills, ultimately benefiting their overall performance on the volleyball court.

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SSSED-52

Globalization and education movement

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Abstract: Globalization provides up chances for the exchange of knowledge, technology, social values, and behavioral norms, as well as the promotion of development at all levels, including individuals, organizations, communities, and societies, across different countries and cultures. At present, higher education is a component of the larger globalization movement. Owing to globalization, one of the key developments that determines the fundamental principles upon which contemporary institutions are built is the internationalization of higher education. In this study, we attempted to compare the problems faced by foreign students, their solutions, and the experience of other countries in the export of higher education. The export of higher education is that of the school and the country. It brings a lot of social and economic benefits, but with other countries. In comparison, the export of higher education in our country is insufficient.

Keywords: globalization, education export, industry IV, challenge

SSED-53

Comparative study of the methodological environment of educational technology innovation

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Abstract. The core of the problem of modernizing learning technology in the field of developing students' natural talent in order to develop the ability to live in harmony with their social environment is to implement student-centered learning in school practice. When learning technology is updated, the learning system (learning goals, content, methods, tools, and evaluation) changes comprehensively, and every teacher faces the problem of acquiring new methods to optimally organize the learning process and psychological environment. This speech reflects the results of research on how teachers mastered new methods in the 2010s when the teaching technology of Mongolian general education was intensively updated. Appropriate conclusions have been drawn by comparing the results of the study with the 2014 study of the methods and technologies used in the educational technology innovation process in school practice today.

Key words: learning technology, student-centered learning, learning methodology environment, skilled Mongolian people

INTRODUCTION

Objectives: The aim of this study is to present a comparative study of the methodological environment of learning technology innovation and to identify ways to improve its process. Learning technology is a specific system of technological units aimed at an educational goal, the technological goals of which are:

- Through learning activities, students will develop knowledge, skills, and behavioral habits.
- Select learning materials using the technology chain.
- Develop students' creativity and train them to use modern digital technology tools.

According to a study by Leontiev A.N. (1983), students internalize new knowledge by transforming it from the external, detailed form of instruction into their own mental summaries through specified stages. If the logic of teaching can be optimally applied in the students' mental actions to acquire knowledge, the conditions are created for the students to distinguish and master the orientation of actions and then take it as a new mental structure through the stages of development.

We believe that the optimal learning technology solution can be achieved if the joint activities of teachers and students in the learning process are focused on the lesson goals, resulting in high learning results in a short period. Therefore, each lesson has the responsibility of imparting knowledge and skills to the students through the specific content of the course and forming Mongolian people with future

skills.

Main part: The organizational structure, with the method and sequence of joint activities of teachers and students that are logically connected to each other and focused on the purpose of the training, forms the learning technology system. In other words, teaching technology is a set of techniques, methods, and skills of teachers and students in the learning process.

By technologizing the learning process:

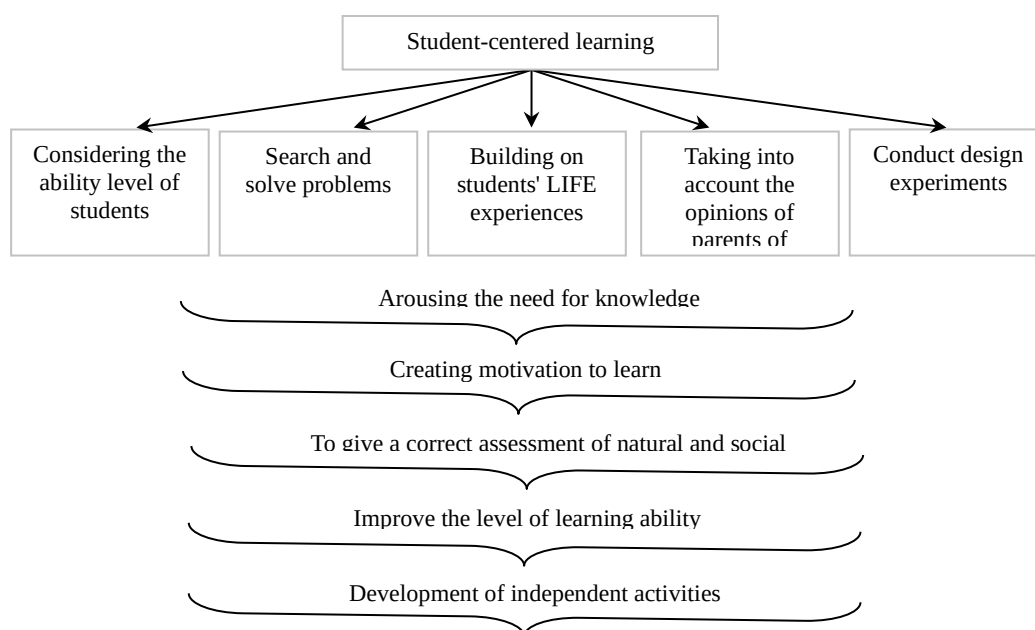
- All training recipes and procedures should be aimed at ensuring the achievement of training goals.
- Assess learning outcomes and provide regular feedback.
- Creating and renewing knowledge in all periods (cycles) of training, ensuring the achievement of training goals
- Formulate learning objectives based on assessment.

The main purpose of reforming the content of general education in Mongolia is to develop "student-centered learning," with an emphasis on a human-centered education and training system that will help students develop the skills to live in harmony with their social environment and democratic ideals and develop their natural talents.

The purpose of this course is to make the student a subject of study, and when the teacher conducts the lesson based on the knowledge and information obtained from any lesson or from the living environment, there will be a qualitative change in the thinking of the student. The importance of student-centered learning is that it allows the student to apply the knowledge and experience gained in the course to their daily activities. In the case of the implementation of student-centered learning principles, the conditions for achieving the results specified in Scheme 1 are characteristic.

When organizing training:

- To make students interested in learning, create an environment in which they can create knowledge and think in the classroom.
- It is necessary to choose appropriate training methods in accordance with the training goals.
- The learning method for creating knowledge will consider the complex intellectual activities of students, starting from receiving information to making decisions, and will develop their creativity.



*Scheme 1:
Student-centered
learning*

When we
implement
the

technology of "student-centered learning", we:

- To develop students' independent creative thinking and to teach learning methods that increase their participation
- When teachers and students create knowledge together and the whole classroom becomes a thinking environment, students will have the desire to learn
- The advantage of using an independent creative method of thinking is that in the process of recognizing the nature of phenomena, students create their own knowledge and experience.

Benchmarking our traditional learning technology with student-centered learning technology:

Table №1. Comparison with learning technology

• Traditional learning technology	• New technology
• Try to impart knowledge to students	• Determine the level of knowledge of students
• Show any activity as a whole or broken down into elements	• Teachers and students put forward goals for joint activities
• Visualization methods are mainly used selectively	• Students work in teams and groups using active learning methods
• Respond to the lesson taught by the teacher to the students	• To analyze the activity together with the student teacher
• To organize the work of developing skills for students in easy conditions	• Create conditions for raising various issues
• Students apply their knowledge in practice	• Students perform creative tasks by searching
• Students immediately accept what the teacher says	• Students reflect on knowledge systems
• In the classroom, students work only according to the teacher's instructions	• The entire classroom becomes an environment for students to think

What results will we achieve by renewing the traditional learning technology with "student-centered" learning technology?

- Students cooperate with their fellow teachers, take responsibility for their learning activities, and think creatively.
- In the course of training, every student should express his ideas freely and prove himself.
- Each student should set specific goals and learn to think reflectively.
- Students will be able to consider other people's opinions and be able to postpone their own decisions, and implement the concept of "cultivating Skillful Mongol".

Training research on how technological innovation is implemented in the practice of schools and teachers:

RESEARCH PROCESSING and RESULTS

This survey consists of a total of 14 questions. In the first question, general information and cooperation of the participants in the study, and in the next question about the availability of educational technology innovation, the results were processed using the SPSS-22 program. A total of 201 teachers of primary and secondary schools participated in the study. (The speakers surveyed the same number of teachers in 2014.)

Research section

In questions 1 and 2, 37.3% of all participants are 20-29 years old, of which 53% are women, 37.3% are 30-39 years old, of which 46% are women, and 15.9% are 40-49 years old, of which 21 % are women, 9.5% are over 50 years old, or 16 of them are women.

Table No. 2 Age characteristics of the research participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-29	75	37.3	37.3	37.3
	30-39	75	37.3	37.3	74.6
	40-49	32	15.9	15.9	90.5
	over 50	19	9.5	9.5	100.0
	Total	201	100.0	100.0	

Table No. 3 Gender of research participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	65	32.3	32.3	32.3
	female	136	67.7	67.7	100.0
	Total	201	100.0	100.0	

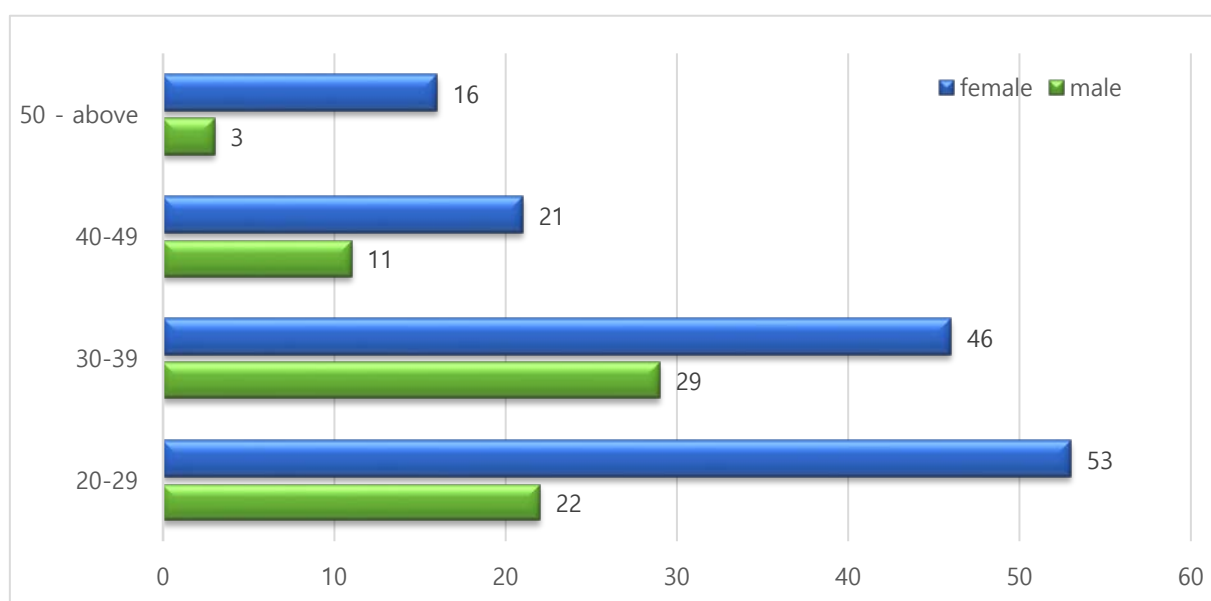


Chart №1. Age and gender comparison of the participants

Table №4. Teaching direction of the research participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Elementary school	58	28.9	28.9	28.9
	Middle school	87	43.3	43.3	72.1
	High school	56	27.9	27.9	100.0
	Total	201	100.0	100.0	

Table №5. Years of work of the participants in the study

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5	62	30.8	30.8	30.8
	6-10	76	37.8	37.8	68.7
	Over 10	63	31.3	31.3	100.0
	Total	201	100.0	100.0	

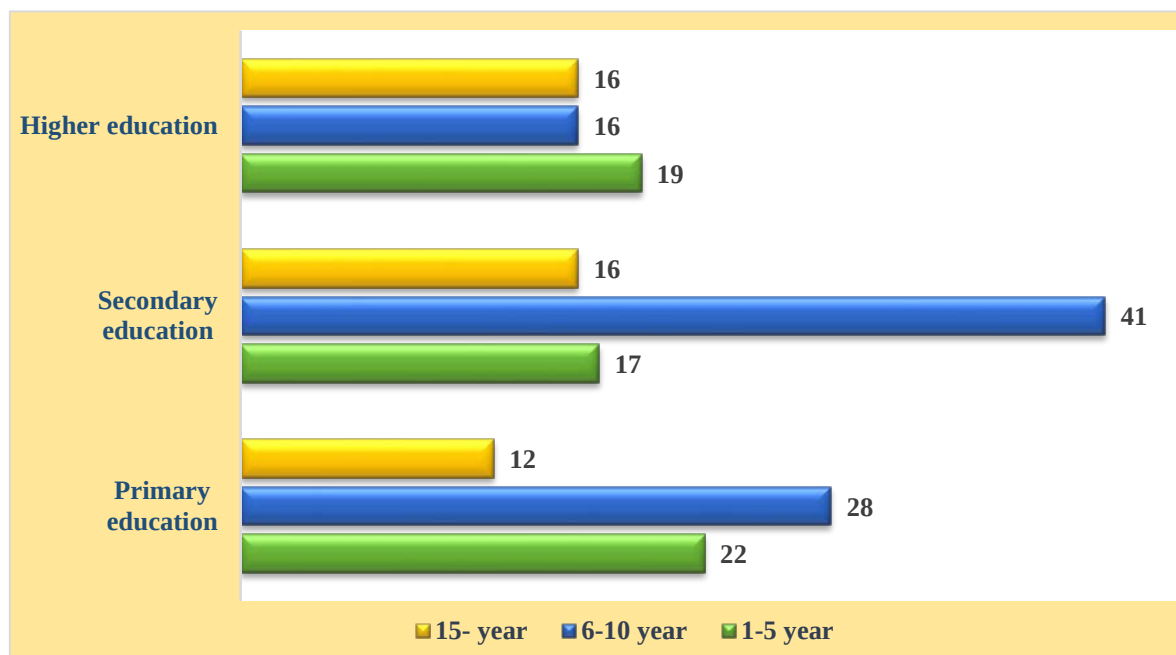
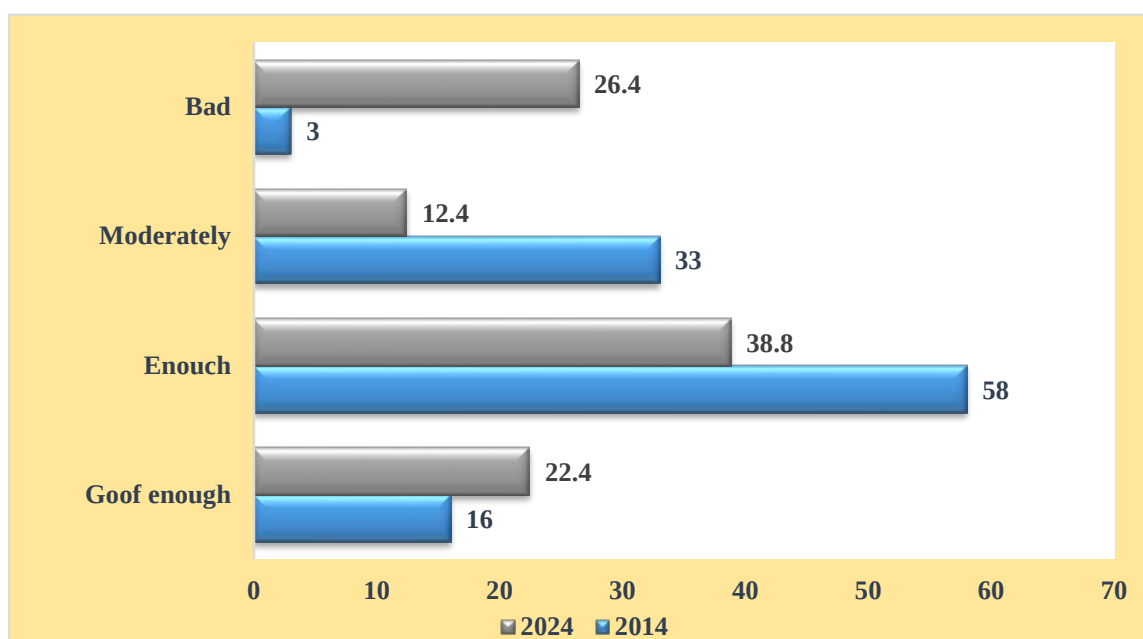


Chart №2. Years of work and professional field of the research participants

Research-1. How are learning technology innovations being implemented at your school?

Table №6. Comparison of studies

Question	Good		Fair		Poor		Inadequate	
	2014	2024	2014	2024	2014	2024	2014	2024
How are learning technology innovations being implemented at your school?	16%	22,4%	58%	38,8	33%	12,4	3%	26,4



Chart№3. How are learning technology innovations being implemented at your school?

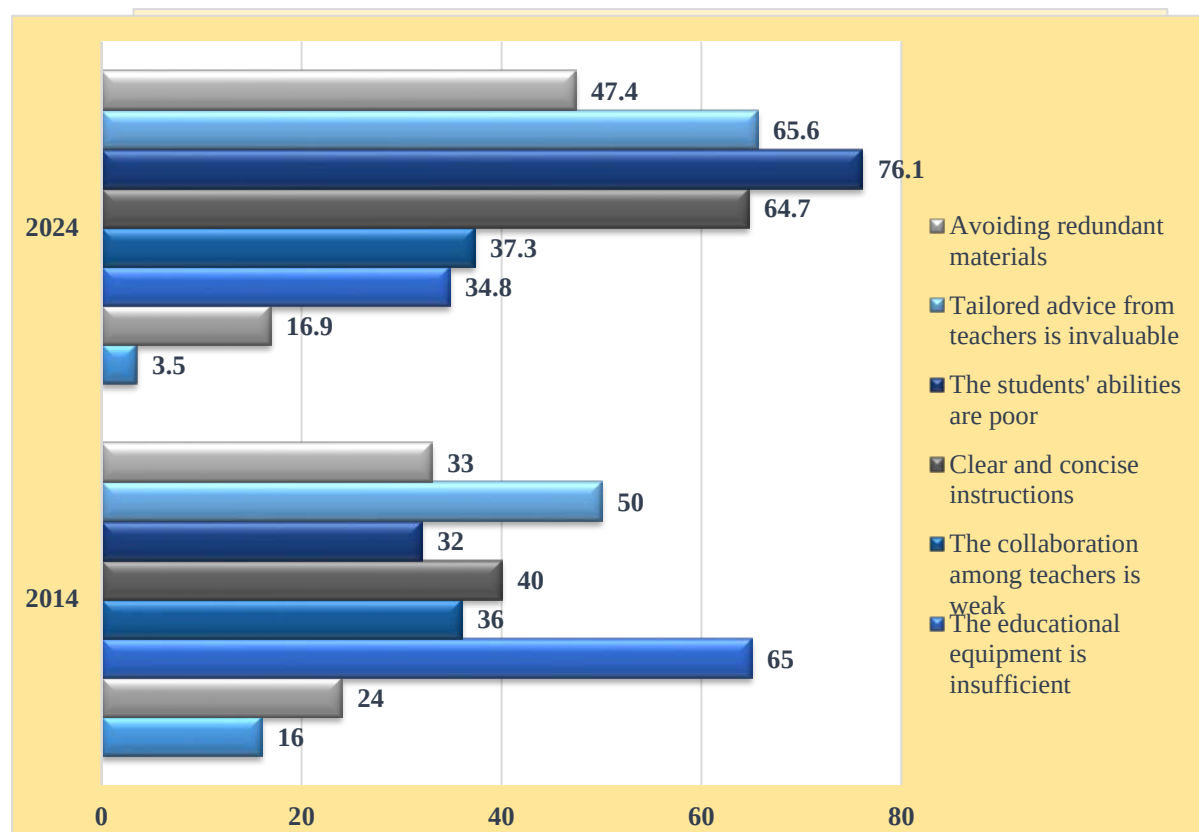
Research-2 What is the reason for the slow process of educational technology innovation?

Table №7. Comparison of studies

№	Questions	Comparison of responses	
		2014	2024
1.	The essence of the reform is not understood	16%	3.5
2.	Teacher training is not enough	24%	16.9
3.	Lack of training equipment	65%	34.8
4.	The cooperation of teachers is weak	36%	37.3
5.	Textbooks are not suitable	40%	64.7
6.	Students' ability is not good	32%	76.1
7.	Lack of recommendations for teachers	50%	65,6
8.	Lack of handouts	33%	47,4

technology innovation?

Chart №4. What is the reason for the slow process of learning



Study-3 Active learning method

Table No. 8 Comparison of studies

Question	Good		Fair		Poor		Inadequate	
	2014	2024	2014	2024	2014	2024	2014	2024
How do you use active learning in your classroom?	5%	40%	69%	37%	32%	22%	4%	1%

Chart №5. How do you use active learning methods in your lessons?

Survey-4 Which method of active learning do you use most in your classes?

Table №9. Comparison of studies

№	Name of methods	Percentage	
		2014	2024
1.	Insert	44%	2%
2.	Corner	43%	2%
3.	Study in pairs	60%	50,7%
4.	Puzzle	32 %	1,5%
5.	A five-line pamphlet	6%	6%
6.	One to stay and three to go	3%	0
7.	Visit art exhibitions	13 %	0
8.	Roleplay	51 %	6%
9.	KWL	64 %	35,8%
10	Package	35 %	2%

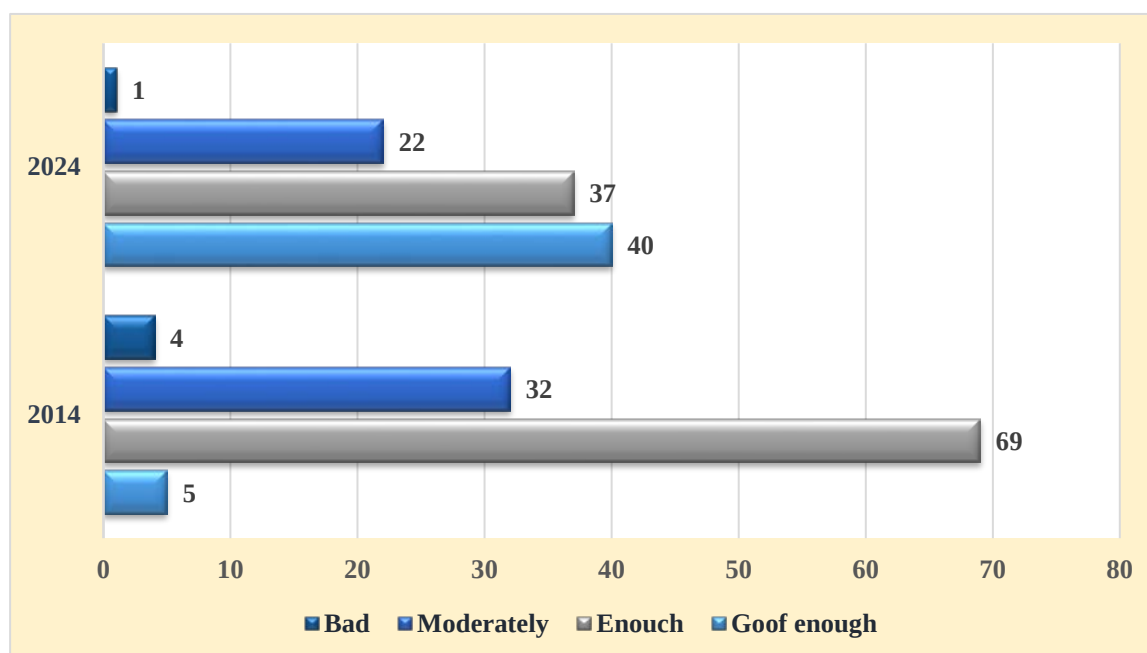


Chart №6. What active learning methods do you use most in your classes?

As we live in the age of information and communication technology, the era of old-fashioned preachy education limited to textbooks is over and a learning system with ICT-based training due to the influence of globalization. Technological innovation by combining traditional didactic methods based on chalkboards with digital learning technologies in line with the changes in thinking in the modern information society has many benefits. The core issues of current education reform are aimed at using digital technology to find the necessary information, using Internet e-mail, and the wide use of e-learning technology by teachers and students in their collaborative activities.

Survey- 5 How familiar are you with office applications?

Table №10. Research parameters

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Works well	42	20.9	20.9	20.9
	It works	79	39.3	39.3	60.2
	Medium	66	32.8	32.8	93.0
	I don't know how to work	14	7.0	7.0	100.0
	Total	201	100.0	100.0	

Table №11. Comparison of studies

Question	Good		Fair		Poor		Inadequate	
How proficient are you in office applications?	2014	2024	2014	2024	2014	2024	2014	2024
	9%	20,9%	22,3	39,3	17,2%	32,8	50,2%	27%
Question	Good		Fair		Poor		Inadequate	
How did you master the methodology of implementing digital technology-based training?	2014	2024	2014	2024	2014	2024	2014	2024
	4%	19,9%	21,3	45,3	7,7%	20,8	67%	14,1

Table №12. Research parameters

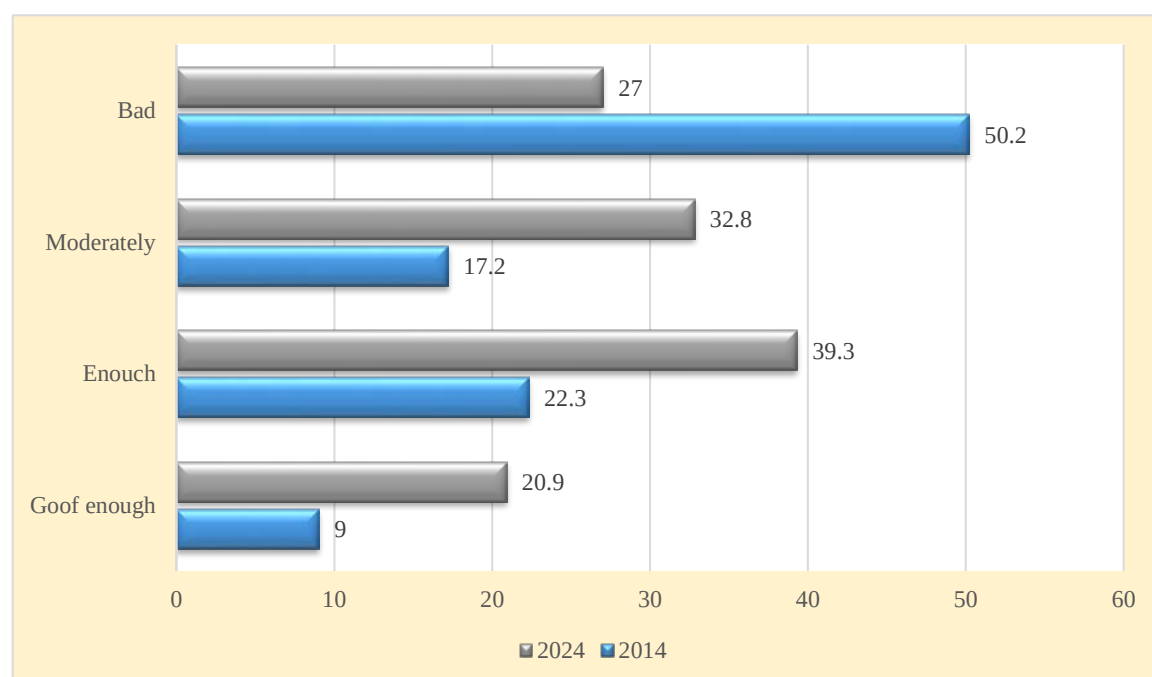


Chart №7. How proficient are you in office applications?

Survey 6. How did you imbibe the methodology for implementing digital technology-based learning?

Table No. 13 Research parameters

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Well mastered	40	19.9	19.9	19.9
	possessed	91	45.3	45.3	65.2
	Intermediate mastery	42	20.9	20.9	86.1
	Almost unowned	28	13.9	13.9	100.0
	Total	201	100.0	100.0	

Research-7 How do you work on Google Office?

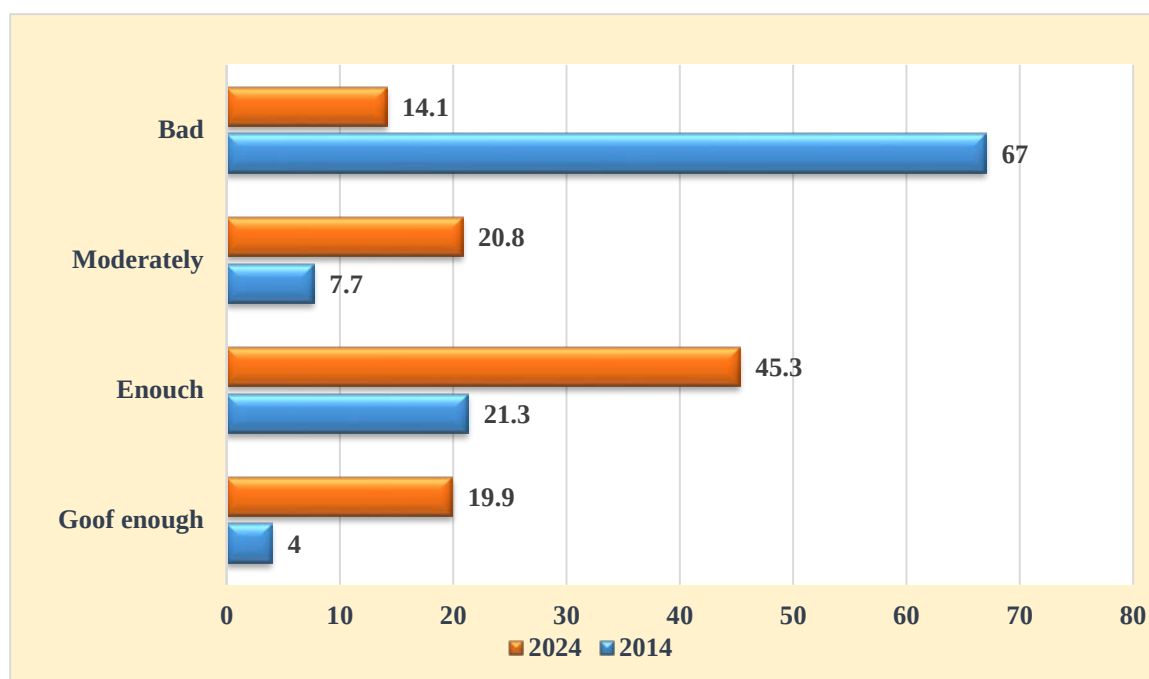


Chart №8. How proficient are you in office applications

Table No. 14 Research Parameters

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Works well	21	10.4	10.4	10.4
	It works	102	50.7	50.7	61.2
	Medium	60	29.9	29.9	91.0
	I don't know how to work	18	9.0	9.0	100.0
	Total	201	100.0	100.0	

Table №15, Comparison studies

Question	Good		Fair		Poor		Inadequate	
How do you work on Google Office?	2014	2024	2014	2024	2014	2024	2014	2024
	5%	10,4%	31,3%	50,7%	11,7%	29,9%	52%	9,0%

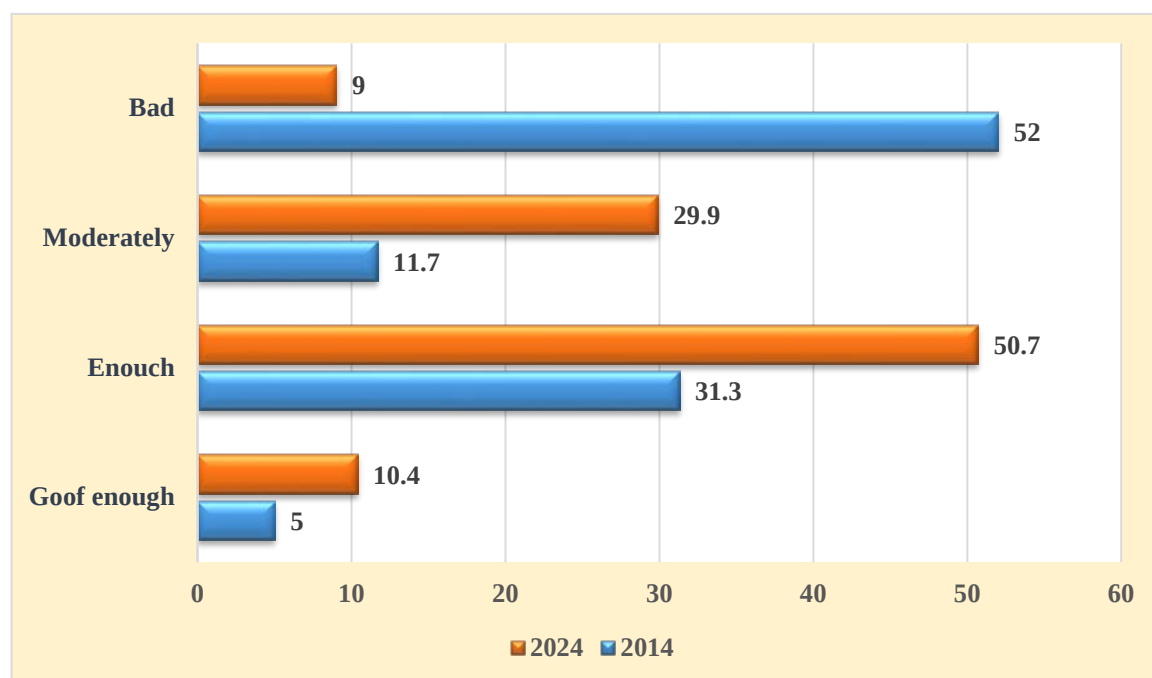


Chart №9. How do you work on Google Office?

CONCLUSION

Since the 1990s, educational goals, the policy and legal system, school structure, and content methodology have been intensively reformed. However, our comparative study proves that the actual reform results are relatively slow and lagging behind the pace of social development. However, it was concluded that the improvement in the level of digital technology skills of teachers is a phenomenon directly related to the development of ICT.

The educational concept is said to "develop a skilled Mongolian citizen," and the content of general education is updated and brought closer to global standards. However, today, teaching methods and technology in school classrooms are not intensively updated, which hurts the maturity, attitude, and creative thinking of high school graduates and furthers their learning, which is an obstacle to success.

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