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ORIGINAL PAPER

INCLUSIVE WORKPLACE, SOCIAL MOBILITY AND LOGISTICS

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ABSTRACT. **Background:** This study practices the priorities of the World Economic Forum, Global Social Mobility Pillars 10th for the inclusive institutions. Global logistics discussed with accessibility needs in theoretical frameworks of Global Social Mobility Index (rankings for 2020 Turkey 64th, and Poland 30th). It is stated with sociological, technological, and economical improvements in line with on the global agenda.
Methods: This article provides a data research, which considers the economic effects of Covid-19 for adults (≥18 years of age and employed with high digital literacy) during lockdown. Theory of main synthesis is targeting UN Development Goals and WEF's Social Mobility Index. It is developed based on international literature and it is defined with total 100 Turkish people opinions and connected individual's budget with the logistics services.
Results: Digital technologies as an enabler of inclusive work are delivering the digital flow with Industry 4.0 by changing the way of logistic services function into another virtual transportation platform. In this paper, with the aim of identifying future directions, more than 100 surveys reviewed focusing on inclusive workplace options.
Conclusion: Economies with greater social mobility provide more opportunities with the content of the accessible procedures which useful instrument for each procurement mode; operational, tactical, and strategic. It confirms the efficiency, effectiveness, and experiences of people with the digitalization technologies (SIoV, IoT, Blockchain, RPA, AI, Data Analytics, etc.) It is recommended that the levels explained in this study contribute to future studies by accessible supply chain with inclusive work procedures.

Keywords: regional economics, social mobility, logistics, post autistic economics, business informatics.

INTRODUCTION

Today, the numbers of workers with disabilities who adopt the common values and multiculturalism of the global world and want to socialize in their life are increasing day by day. They are changing the way of carrying out a comfortable and low-cost lifestyle with professional distance working methods. With its new development form, it deals with technology, computing, and reasonable changes from the managements. This type of work started upscaling with COVID-19 and is rapidly becoming widespread in different professions and groups including logistics. For example, 3D online platforms empower consumers to design and print objects at home [Halassi et al. 2019]. This brings sociological, technological, and economical improvements in line with accessibility needs on the global agenda.

Economical access needs are diverse but new business models defining them by "actively pursuing diversity and inclusion enjoy significantly higher revenues" [Cassidy, 2021]. Logistics services provide international sectoral connections within the individual's budget. It also connects the domestic economy to the international economy. [Gani, 2017] The pandemic brought wide effect to world economy on work conditions and delivery services. The domestic logistics performance ranking of Turkey 18th in 20 EU countries [Senir, 2021].

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Logistics and supply chain domains can be difficult, due to multiple tiers and the number of organizations involved [Grant & Shaw, 2021] especially in-service sector. First, organizations define the strategic objectives for accessible service and standards in delivery processes and then it allows all related parties. This study discusses the changes in business logistics that studied in three dimensions of accessibility because of their contributions to the global economy: sociological, technological, and economical. [Özbalcı, 2020].

THEORY AND HYPOTHESIS

The ideal design concept targets all people of all ages, sizes and abilities [Center for Universal Design, 2009] Universal Design Principles are necessary for dealing with reasonable adjustments which is the main frame of an equal workplace environment such as: "principle equitable, flexible, simple and intuitive use, perceptible information, tolerance for error, low physical effort, size and space for approach". The concept of equity is adopted by making equal "products, connections, communications and the built environment more usable by more people at little or no extra cost". [Michopoulou et al, 2015] In this case the person's impairment does not only disable them but the complex collection of practices and attitudes, which are imposed on top of a person's differences because the requirements depending on those specialties: the dimensions of access level for support needs, and the equity in logistics for adaptive/assistive equipment used for reasonable adjustments.

Domestic economy develops in an inclusive society (Yıldırım, 2021) that must provide fair and equitable access to excluded groups; "corruption has a high social cost; it enables higher levels of opportunity hoarding, both in terms of access to higher education and access to work opportunities" [WEF, 2020]. The economic model of disability sees the issue mainly as an equity problem for the work environment that excludes people from physical participation. It has been described by the terms as disabled/disability cost, easy access, barrier free environment, inclusive workplace, universal design, and recently social mobility [WEF, 2021]. When defining the disability through the World Health Organization (WHO) definitions on which national disability statistics are collected, disability scholars describe two main modes of disability in general: firstly, the medical or individual model; and secondly, the social model. These models include "people with permanent and temporary disabilities, seniors, obese, families with young children, and those working in safer and more socially sustainably designed environments" [Michopoulou et al, 2015]. On the other hand, there is a growing need on the equity of the work standards for people "who are committed to the organization's purpose and output" according to the Equity Effect Report (Henley Business School, 2020). It also points out that: "There is significant correlation between a more diverse and inclusive business environment and overall financial performance. Human logic and human experience prove that if you build a safe environment for people regardless of color, race, background, belief and all that sort of stuff, you give them an environment to express themselves. If you give people the environment to self-express, they will achieve, and they will feel good about themselves." These discussed in this paper with WEF access priorities.

MATERIALS AND METHODS

This study practices the priorities of the World Economic Forum (WEF, 2021), Global Social Mobility Pillars 10th for the inclusive institutions, which is based on the United Nations (UN, 2020) Sustainable Development Goals. As a new tool of WEF, Global Social Mobility Index (rankings for 2020 Turkey 64th, and Poland 30th) understanding and explaining the global system with new assessment of 82 global economies. It respects to human rights, the medical models of disability and embodiment, the examples of new market segments, environmental elements, universal design concepts for logistics, accessibility and aging in the first place. The inclusive effect as a social construct and examples of changing experience expectations amongst people with disabilities, as well as increased level of acceptance of people with

special needs by other stakeholders in work environment opportunities around the world with the international validity of accessibility standards. It suggests that all developed sectors, support elements and services are interconnected with each other, as well as with communities and the natural environment. Therefore, an accessible environment also has a positive effect on global trade procedures. This means "perceived environmental uncertainty has a negative effect on performance and as a result, firms need to decide strategy to minimize the negative effect of the uncertainty on performance which has a role to change "a negative effect (a direct effect) with a positive effect (indirect and total effects) on the effect of perceived environmental uncertainty on performance". [Bae, 2017]

Accessibility is one of the most important human rights in the fight against discrimination enabling universal accessibility by the availability of national building codes, access and mobility standards and administrative procedures. Therefore, accessibility discussions are started with globalizing, universal integrity, and social disability. It means having a social dimension, constructed by barriers. These barriers affect participation at work by "creating disability on top of a person's impairment and discriminating against a person because of their impairment" [Buhalis and Darcy, 2011]. There is a growing literature on the needs of equity in the workplace. This article provides data research, which considers the economic effects of Covid-19 for adults (≥18 years of age and employed with high digital literacy) 100 Turkish businesspeople during lockdown. This research is drawing together the needs in the workplace by gathering people's reflections in Covid-19 process. Results are useful for an important request as a first kit for defining the concepts of the area for inclusive practices. A smart definition of economic accessibility is described and focused on the experiences of people while supporting logistic elements of the business field.

RESULTS

The survey on which findings are reported here, conducted in December 2020 among the people with distant working conditions. The response rate was %100 frequency distributions and other descriptive characteristics for each question. The design of the descriptive statistics such as means, standard divisions, and minimum-maximum values for each question were calculated and performed with SPSS. Also, there are questions on socio-demographic characteristics such as gender (40 male, 59 female, 1 other), age (min: 18, max: 65) educations (3 PhD, 35 faculty, 45 master, 17 high school & others), also being a disabled or having a relative with disability (Yes: 25, No: 75), interest of inclusive work (Yes, 95; No, 5).

Table 1. Inclusive Workplace Statistics

	As Coworker (%)			As Customer (%)		
Disability Type	Yes	Partly	No	Yes	Partly	No
Hearing	28	56	16	27	64	9
Visual	27	64	9	34	58	8
Physical	41	55	4	42	65	3
Mean	32	58	10	34	62	7

Digital technologies as an enabler of inclusive work are delivering the digital flow with Industry 4.0 by changing the way of logistic services function into another virtual transportation platform. Recent studies show that staff characteristics related to the knowledge, and experiences of the people play an influential role in trade activities (Unal & Metin, 2021). Experiences of the people during lockdowns examined to measure the economic impact of pandemic by logistic equity conditions. It shows that staying at home, online meetings etc. are affected their income level and family relations in medium level, the

bills highly negative impacted, but job satisfaction and transportation costs are positively reacted to the situations. Asking participants if they can work with people with special needs as co-worker or customer, they replied figuratively eager to communicate with them, statistics are shown in Table 1. It is stated more than 50% they cannot contact in work environment people with special needs because of literacy of accessibility knowledge.

Participants shared their ability to understand people with specilalities in these five levels:

1. 89% like to participate equity at work,
2. 68% cannot communicate PWS's,
3. 67% people have emergency support and first aid skills,
4. 58% able to be friends with people with disabilities,
5. 28% of them being aware of the co-workers' health status at workplace.

DISCUSSION

In this study the accessibility need is explained based on Maslow's hierarchy of needs which represents the pyramid of demand types: the continuum abilities. This is a good tool for dividing the needs into disability groups of people with similar needs. It also helps companies' top management and shareholders to understand what matters the most for creating an accessible workplace [Özbalcı, 2020]. Because the suppliers which are targeting these groups, they must change their accessibility level to achieve competitive advantages through differentiation with 4A+ status (Figure 1) which defined as; acceptable, adoptable, assitable, and affordable. While their special status is increasing the inclusive factors should reduce the care need in the workplace to help persons with special needs to accomplish their independence.

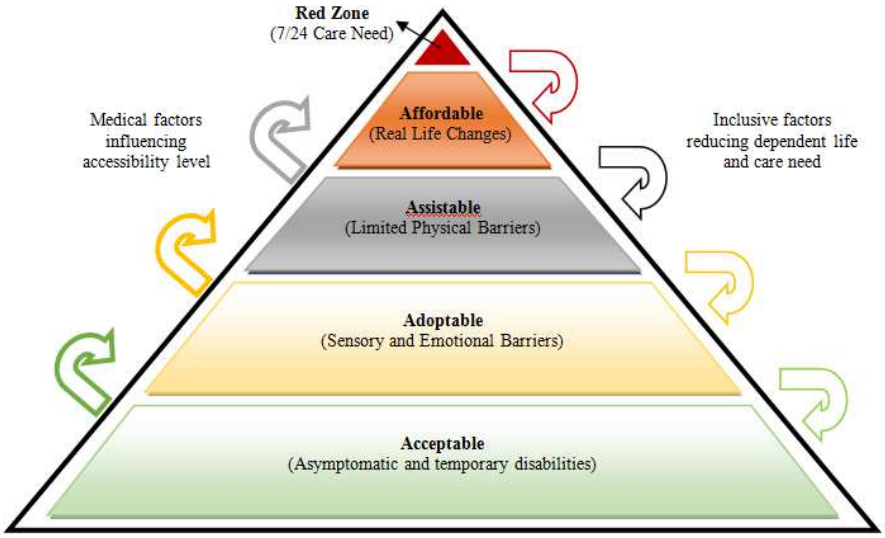

Fig. 1. Hierarchy of Accessibility

People with more moderate needs should be listed at the top of this hierarchy (Figure 1). On the other hand, access needs for distant work can be explained in five technological categories such as: visual, hearing, learning, age sensitivity and other. The mainstream providers who have utilized inclusive design in their facilities they reach this new market levels with differentiation of services and products. An accessibility product can be used as a business tool as a part of the service. Additionally, logistics involves storage and movement of products or information from the source of production to the end customer. Therefore, it covers two parallel platforms of production: physical and digital. The fact that it explains the defining key areas of the access need to be delivered for logistics in two scopes:

- Technological: Delivering & receiving devices (indoor & outdoor operations),
- Physical: Design of built environment (reasonable adjustments).

The social and environmental value of the company pulls a positive impact on the financial results in the long term [Palacio, 2021]. It is correlated with the physical and digital flow of logistics for the 3rd Party Business activities such as:

- Customer relations (sales and marketing),
- Transportation services (international logistics),
- Employment opportunities (human resources),
- Delivery options (documentary and reverse logistics).

Customer relations (sales and marketing)

This study points out the people with disabilities faced several delivery and transportation problems during Covid-19. It would be possible for logistic operations by seeking to incorporate social participation to understand the digitalization from a disability perspective for distant work and business cycle development. It concerns the digital transformation for the company's operational efficiency and positive customer experiences in capability of changing.

Transportation services (international logistics)

New logistics practices integrated approach [Martin et al., 2021], the operational availability [Zhao et al., 2021], success mission [Agarwal et al., 2019] and affordable life cycle costs [Baruffaldi et al., 2020] for defining the optimum budget for fast and accessible systems. This system draws a cycle related with accessibility levels [Özbalcı, 2020] explained by considering the supply chain flow as a sustainable process (Figure 2, Figure 3).

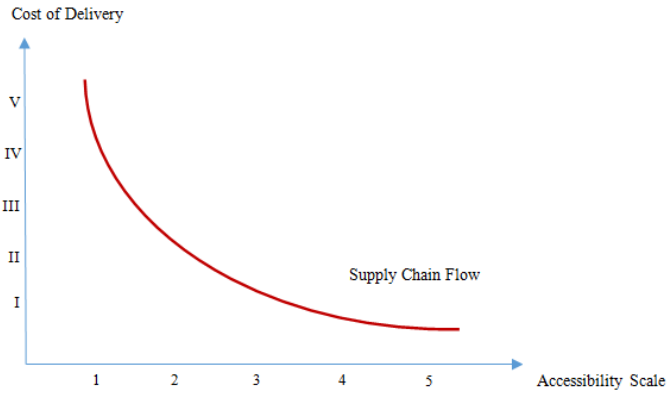

Fig. 2. Measuring Logistics with Accessibility Levels

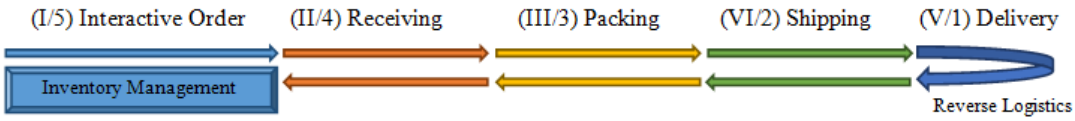

Fig. 3. Accessible Platforms of Supply Chain Flow

Logistics with constructed smart options such as drones, mobile phones result in minimizing the effort and costs. It helps building interactive business practices benefitable for everyone incorporate with planning, implementing, controlling the effective flow, storage, and inventory management for service operations such as (Figure 3): receiving, packing, shipping.

Employment opportunities (human resources)

The business cycle of logistics carries a quick tool for measuring the access levels. It explains the difficulties of accessing optimum delivery point with five levels because of problems with instruments and qualifications of delivery point; variance of service equality

[McInroy, 2018] and rapid response, employment opportunities [Mascarenhas& Barbosa, 2019] such as:

- Shortage of accessible order points,
- Insufficient support for related marking items,
- Inadequate training of workers,
- Unreliable transportation equipment,
- Lack of accessible tools and support.

Delivery options (documentary and reverse logistics)

The supply chain documentary tools are essential transportation proof between the sender and receiver with the aim of handling products in good and accessible condition. It means the customer services of the logistic performers' responsibility to moderate right goods, right places in right time and right quantity with the correct documents.

Digital logistics chain involves storage and movement of products or information from the source of production to the customer. The accessibility level in the content of packing list as a digital mark which traceable (SIoV, IoT, Blockchain, etc.) for the warehouse, vehicles [Roopa et al, 2021] and stock operations and defined by incoterms is an essential part of the chain as:

- Support accessible process of strategy & payment elements,
- Expanded maintenance planning with universal design influence,
- Equity of logistics acquisition,
- The life cycle of barrier free material management.

CONCLUSION AND RECOMMENDATIONS

In conclusion, this study is analyzing the crucial part of the new methodology of WEF Global Social Mobility Index Pillars constructed on accessible logistic ecosystem environment (Figure 4) in the logistics which contains these three factors for five strategic moderation:

- Developing experiences of people: this reflects co-worker's attitudes to disability,
- Removing work barriers: understanding in both built environment and social life.
- Solving social dysfunctions resulting from physical barriers: enabling delivery options, building sufficient work conditions on abilities etc.

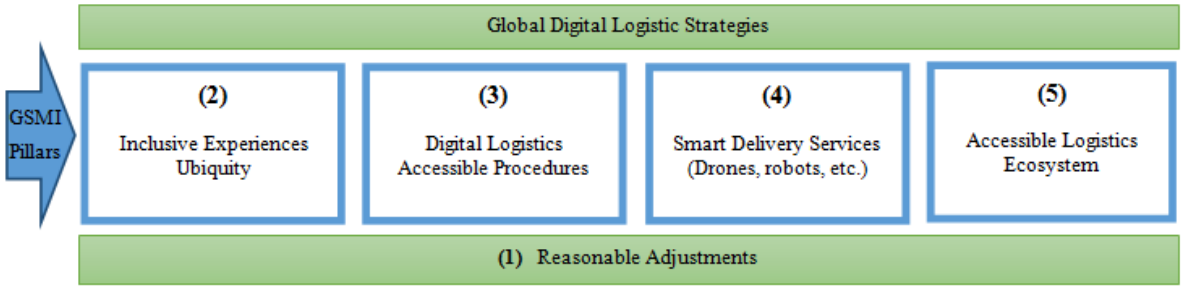

Fig. 4. Defining Accessibility Levels of Logistics Ecosystem

Economies with greater social mobility provide more opportunities (WEF, 2021) with the content of the accessible procedures which useful instrument for each procurement mode; operational, tactical, and strategic. It confirms the efficiency, effectiveness, and experiences of people with the digitalization technologies (SIoV, IoT, Blockchain, RPA, AI, Data Analytics, etc.) In this paper, with the aim of identifying future directions, more than 100 surveys reviewed focusing on inclusive workplace options. It is discussed and suggested in this study with the possibility of increasing the inclusive institutions (Pillar 10) level of Turkey from 75th with understanding the demand of accessibility regulations in the workplace (positive response rate 89%) and measurability of global logistics delivery options with the five levels of accessible supply chain performance. It is recommended

that the levels explained in this study contribute to future studies by practicing with a product samples in accessible supply chain with inclusive work procedures. This study is a reference source for international literature, provides an inclusive perspective from Turkey that are well qualified information for researchers in the era which contributes unique studies about experiences of people who are eager to work in inclusive business practices, such as shareholders, company providers and international academicians from different disciplines. Understanding the impacts of accessibility on global economy with future studies on SME's and international organizations could be productive. It is suggested in this perspective that promoting inclusive culture and preventing discriminative behaviors in the workplace with the upcoming applied research and workshop ideas.

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REFERENCES

Agarwal S., Kant R., Shankar R., 2019. Humanitarian supply chain management frameworks: A critical literature review and framework for future development. Bench-marking 26, 6, 1749 - 1780, 31 Jul 2019, http://doi.org/10.1108/BIJ-08-2018-0245/

Bae H. S., 2017. Empirical relationships of perceived environmental uncertainty, supply chain collaboration and operational performance: analyses of direct, indirect and total effects. The Asian Journal of Shipping and Logistics, 33, 4, 263-272, ISSN 2092-5212, http://doi.org/10.1016/j.ajsl.2017.12.010/

Baruffaldi G., Accorsi R., Manzini R., Ferrari E., 2020. Warehousing process perfor-mance improvement: a tailored framework for 3PL. Business Process Management Journal, 26, 6, 1619-164116 Nov 2020, http://doi.org/10.1108/BPMJ-03-2019-0120/

Cassidy F., 2021. Equity pays: why pursuing workplace equality isn't enough. Raconteur, Content for business decision makers. Retrieved from, https://www.raconteur.net/hr/diversity-inclusion/workplace-racial-equity-bottom-line/

David B.G., Sarah S., 2021. Logistics and Supply Chain Management Performance Measures, International Encyclopedia of Transportation, Elsevier, 16-23, ISBN 9780081026724, http://doi.org/10.1016/B978-0-08-102671-7.10210-6/

Gani A., 2017. The logistics performance effect in international trade. The Asian Journal of Shipping and Logistics, Volume 33, 4, 2017, 279-288, ISSN 2092-5212, http://doi.org/10.1016/j.ajsl.2017.12.012/

Halassi S., Semeijn J., Kiratli N., 2019. From consumer to prosumer: a supply chain revolution in 3D printing. International Journal of Physical Distribution and Logistics Management, 49, 2, 200 – 216, 5 Mar 2019, http://doi.org/10.1108/IJPDLM-03-2018-0139/

Martin F., Hemmelmayr V.C., Wakolbinger T., 2021. Integrated express shipment service network design with customer choice and endogenous delivery time restrictions. European Journal of Operational ResearchOpen Access, 294, 2, 590 - 60316 October 2021, http://doi.org/10.1016/j.ejor.2021.02.014/

Mascarenhas A.O., Barbosa A.C.Q., 2019. Sustainable human resource management and social and environmental responsibility: An agenda for debate. RAE Revista de Administracao de Empresas Open Access, 59, 5, 353 - 3642019, http://doi.org/10.1590/S0034-759020190505/

McInroy N., 2018. Wealth for all: Building new local economies. Local Economy, 33, 6, 678 – 687, 1 September 2018, http://doi.org/10.1177/0269094218803084/

Michopoulou, E., Darcy S., Ambrose I. and Buhalis D., 2015. Accessible tourism futures: the world we dream to live in and the opportunities we hope to have, Journal

of Tourism Futures, 1, 3, 179-188. http://doi.org/10.1108/JTF-08-2015-0043/

Özbalcı S., 2020. Economic Accessibility: Addressing Equality for Industry 4.0, Managing Global Trade in Industry 4.0: New Issues and Trends, Ankara: Gazi.

Palacio J.R.S., Climent V.C., Catala A.E., 2021. The organizational model of the Economy for the Common Good and its comparison with other approaches to Sustainability, CIRIEC-Espana Revista de Economia Publica, Social y Cooperativa,Open Access, 101, 143 - 163, http://doi.org/10.7203/CIRIEC-E.101.16399/

Roopa M.S., Ayesha S., Rajkumar B., Venugopal K.R., Iyengar S.S., Patnaik L.M., 2020. DTCMS: Dynamic traffic congestion management in Social Internet of Vehicles (SIoV), Internet of Things, http://doi.org/10.1016/j.iot.2020.100311/

Senir G., 2021. Comparison of domestic logistics performances of Turkey and European Union countries in 2018 with an integrated model. LogForum, 17 (2), 193-204. http://doi.org/10.17270/J.LOG.2021.576/

Unal T.D., Metin I.,2021. Do the factors affecting Incoterms® selection differ for exporters and importers? A Fuzzy Analytical Hierarchy Process (FAHP) application. LogForum 17 (2), 299-309, http://doi.org/10.17270/J.LOG.2021.585/

UN (2021) United Nations Development Programme, Human Development Index, Retrieved from, http://hdr.undp.org/en/content/human-development-index-hdi/

WEF (2021) World Economic Forum, Social Mobility Index, Retrieved From, https://www.weforum.org/reports/global-social-mobility-index-2020-why-economies-benefit-from-fixing-inequality/

Yıldırım E., 2021. Inclusive leadership and counseling in schools: asylum seekers students, Eğitimde Nitel Araştırmalar Dergisi, 9(1): 126-150, Retrieved from https://dergipark.org.tr/tr/pub/enad/issue/60131/871219/

Zhao Y., Leng L., Zhang C., 2021. A novel framework of hyper-heuristic approach and its application in location-routing problem with simultaneous pickup and delivery. Operational Research. 21, 2, 1299 – 1332, June 2021, http://doi.org/10.1007/s12351-019-00480-6/

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