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Leveraging Network Resources for Supply Chain Performance Improvement in Logistics Outsourcing

THESE
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Résumé de la thèse

La thèse adopte un format structuré en trois articles, chacun traitant d'aspects distincts mais interdépendants des ressources en réseau sur la performance de la chaîne d'approvisionnement dans le contexte de l'externalisation logistique.

Cette thèse est structurée en cinq chapitres, en commençant par un chapitre introductif qui présente le contexte de recherche, les objectifs, la revue de la littérature ainsi que le cadre théorique mobilisé dans ce travail. Le cœur de la thèse suit un format en trois articles, chacun étant présenté dans un chapitre distinct: le chapitre 2 présente le premier article (revue de la littérature structurée), le chapitre 3 développe le deuxième article (étude qualitative), et le chapitre 4 contient le troisième article (étude quantitative). Enfin, le chapitre 5 propose la conclusion de l'étude et répond aux questions de recherche formulées dans la thèse.

Objectifs de recherche et questions de recherche

Cette étude vise à aider les entreprises à gérer efficacement leurs relations avec leurs partenaires en externalisation logistique. Ainsi, l'objectif principal de cette thèse porte sur l'acquisition de ressources en réseau auprès des prestataires de services logistiques (PSL) dans le cadre de l'externalisation logistique. Cette orientation permet de combler une lacune importante dans la littérature existante, car l'application du concept de ressources en réseau a rarement été examinée dans le contexte spécifique de l'externalisation logistique. Bien que des études antérieures aient abordé les ressources en réseau dans un cadre partenarial plus large, il subsiste un manque de connaissances empiriques et théoriques quant à la manière dont ces ressources sont accessibles et mobilisées spécifiquement via les PSL.

Cette thèse vise à combler cette lacune en examinant les implications stratégiques et en matière de performance liées à l'obtention de ressources en réseau dans les relations d'externalisation

logistique. Plus précisément, la recherche explore les enjeux liés à l'utilisation de l'externalisation logistique pour l'obtention de ressources en réseau et le renforcement de l'avantage concurrentiel des organisations à travers la chaîne d'approvisionnement. Ces objectifs peuvent être résumés comme suit:

1. Examiner de manière structurée la littérature dans le domaine de l'externalisation logistique;
2. Identifier les déterminants des ressources en réseau ainsi que les méthodes permettant leur obtention dans un contexte d'externalisation logistique;
3. Identifier les avantages concurrentiels découlant de l'obtention de ressources en réseau;
4. Évaluer l'impact des ressources en réseau sur la performance de la chaîne d'approvisionnement.

Le premier objectif vise à identifier les théories fondamentales, à mettre en lumière les tendances émergentes ainsi que les lacunes existantes dans la littérature relative à l'externalisation logistique. Cet objectif contribue théoriquement à la littérature existante en proposant de nouvelles pistes de recherche aux chercheurs dans ce domaine.

Le deuxième objectif cherche à comprendre les stratégies mises en œuvre par les utilisateurs de services logistiques (USL) pour obtenir des ressources en réseau (RR) à travers leur collaboration avec les prestataires de services logistiques (PSL). En s'appuyant sur la théorie étendue des ressources (Extended Resource-Based View – ERBV) telle qu'exposée par Lavie (2006), il est essentiel d'explorer ces lacunes, car chaque entreprise adoptera des méthodes différentes pour accéder aux ressources des PSL en vue d'améliorer sa performance. Par ailleurs, cet objectif apporte également des éclairages contemporains sur les motivations qui poussent les USL à rechercher intentionnellement ces ressources ainsi que sur les obstacles qui entravent leur accès dans le cadre

de ces partenariats.

Le troisième objectif consiste à analyser les avantages concurrentiels découlant de l'acquisition de ressources en réseau. Il s'agit ici de mieux comprendre les caractéristiques de ces ressources dans un contexte d'externalisation logistique et d'expliquer de quelle manière elles confèrent un avantage concurrentiel aux organisations.

Enfin, le quatrième objectif de ce travail est de mesurer de manière quantitative l'impact des ressources en réseau sur la performance de la chaîne d'approvisionnement. Cela impliquera l'analyse de données visant à déterminer dans quelle mesure ces ressources contribuent à l'amélioration de la performance globale de la chaîne.

Pour atteindre les objectifs de recherche mentionnés ci-dessus, les questions de recherche suivantes sont posées :

QR1: Quelles pistes de recherche futures les chercheurs devraient-ils explorer dans le contexte de l'externalisation logistique?

QR2: Quels sont les résultats de l'acquisition de ressources en réseau par les utilisateurs de services logistiques (USL)?

QR3: Comment les ressources en réseau influencent-elles la performance de la chaîne d'approvisionnement des USL?

Résumé du premier article: Une revue de littérature structurée sur l'externalisation logistique.

Le premier article est une revue de littérature structurée (RLS) offrant une évaluation complète et systématique de la recherche sur l'externalisation logistique. Il identifie les principales tendances, les lacunes théoriques et propose des pistes de recherche futures. Pour répondre à la question de recherche 1 de la thèse, cette recherche présentée dans le chapitre 2 visait à répondre aux questions de recherche suivantes :

1. Quelle est la démographie de la gestion de l'externalisation logistique?
2. Comment les sujets liés à l'externalisation logistique ont-ils évolué au fil du temps?
3. Quelles sont les pistes de recherche potentielles dans le contexte de l'externalisation logistique?

S'appuyant sur cette base, l'article présente une analyse approfondie de la littérature sur l'externalisation logistique en évaluant les chronologies de recherche, les conceptions de recherche, les revues ciblées et l'utilisation des cadres théoriques. Pour ce faire, l'auteur a mené une recherche extensive dans des bases de données en ligne couvrant la période de 1992 à février 2023, en utilisant des mots-clés tels que "externalisation logistique", "services logistiques" et "prestataires logistiques" dans les titres et résumés. Après avoir appliqué des critères de sélection spécifiques, 207 articles pertinents ont été identifiés et analysés. Une analyse de contenu subséquente a fourni des perspectives précieuses sur l'évolution et le développement de la recherche en externalisation logistique au cours des trois dernières décennies.
Les résultats descriptifs montrent un intérêt croissant des chercheurs au cours des 30 dernières années pour l'étude de l'externalisation logistique. Cet article contribue à la littérature actuelle en résumant les recherches sur les services d'externalisation logistique de 1991 à février 2023. Notre analyse de 207 articles provenant de six bases de données offre un aperçu des caractéristiques

démographiques de la recherche. Il est à noter que la revue *International Journal of Physical Distribution & Logistics Management* a été une revue préférée des auteurs précédents. Les méthodes empiriques quantitatives, les enquêtes et les SEM ont été fréquemment utilisées comme conceptions de recherche, techniques de collecte de données et méthodes d'analyse, respectivement. Géographiquement, la Chine, les États-Unis, Taïwan et l'Inde ont été des régions particulièrement étudiées. Bien que diverses théories aient été utilisées, la *Resource-Based View* (RBV) étant la plus courante, seulement 40 % (83 articles) des publications ont utilisé un cadre théorique. Entre 1991 et 2008, seulement huit études publiées sur l'externalisation logistique ont explicitement utilisé des cadres théoriques fondamentaux. Cette application limitée suggère qu'à cette période, l'inclusion de la théorie n'était pas considérée comme un critère essentiel pour la publication dans ce domaine. De plus, plusieurs études utilisant une analyse descriptive ont omis l'utilisation de tout cadre théorique, ce qui indique que de tels cadres n'étaient pas jugés essentiels pour interpréter leurs résultats. Ce modèle reflète une lacune notable dans la rigueur théorique des premières recherches sur l'externalisation logistique et souligne l'importance d'intégrer des perspectives théoriques solides dans les études futures.

Suite à l'analyse de contenu et à l'analyse descriptive, plusieurs pistes restent ouvertes pour les futurs chercheurs afin d'explorer davantage divers aspects de l'externalisation logistique. Premièrement, en ce qui concerne les résultats de l'analyse descriptive, étant donné l'application courante de la *Resource-Based View* (RBV) et de la *Transaction Cost Economics* (TCE), il existe des opportunités pour de futures recherches d'explorer d'autres cadres théoriques, tels que la *Relational Exchange Theory*, la *Contracting Theory* et la *Supply Chain Management Theory*, dans le cadre de l'externalisation logistique. Plus spécifiquement, bien que la RBV ait été largement utilisée dans ce contexte, l'utilisation de la *Extended Resource-Based View* (ERBV) est absente de

la littérature existante, mettant en évidence une lacune pour de futures investigations. Cette lacune a été abordée dans les chapitres 3 et 4 de cette étude.

De plus, bien que les conceptions de recherche empiriques quantitatives soient devenues la méthodologie la plus largement adoptée, il existe des opportunités pour de futures études d'employer des approches empiriques qualitatives. En accord avec les résultats de l'analyse de contenu, la recherche qualitative pourrait être particulièrement précieuse pour explorer des sujets tels que la gestion des relations, l'impact des événements perturbateurs et l'utilisation des technologies avancées dans l'externalisation logistique.

Les résultats de l'analyse de contenu montrent qu'il existe des opportunités pour de futures recherches dans quatre domaines clés de l'externalisation logistique : le développement des relations, la durabilité, les technologies avancées et l'influence des événements perturbateurs. Premièrement, bien que la pandémie de COVID-19 ait été reconnue comme un événement perturbateur dans le domaine de l'externalisation logistique, d'autres événements significatifs méritent une attention scientifique plus approfondie. Par exemple, l'impact de l'invasion russe en Ukraine sur les services de fret international demeure un domaine important mais encore peu exploré, soulignant la nécessité de recherches supplémentaires sur les implications plus larges des perturbations géopolitiques sur les chaînes d'approvisionnement mondiales.

De plus, bien que des technologies telles que l'IoT, la Blockchain, l'IA et les technologies de communication aient été explorées dans la littérature, d'autres technologies de l'Industrie 4.0 nécessitent une attention académique accrue. Celles-ci incluent l'impression 3D, les systèmes cyber-physiques, la robotique, la 5G et l'informatique en périphérie, qui ont le potentiel d'améliorer de manière significative la performance des chaînes d'approvisionnement et des services d'externalisation logistique. Une direction de recherche prometteuse pour les futurs chercheurs

explorant soit les "technologies avancées", soit les "événements perturbateurs" dans le cadre de l'externalisation logistique est la gestion des risques. Les études portant sur les événements perturbateurs peuvent examiner différents types de risques, tels que les risques opérationnels, qui surgissent lors de ces événements perturbateurs. Parallèlement, les recherches sur les technologies avancées peuvent explorer les risques liés à la technologie, y compris les menaces de cybersécurité associées à l'intégration des innovations technologiques dans les services d'externalisation logistique.

En plus des deux sujets précédemment abordés, les futures recherches pourraient explorer les avantages de l'atténuation des risques dans le cadre de l'externalisation logistique durable. Ce sujet suscite un intérêt croissant à mesure que les entreprises cherchent de plus en plus à aligner leurs pratiques d'externalisation avec les principes de durabilité. L'étude de la manière dont les prestataires de services logistiques (PSL) gèrent les risques liés à l'efficacité économique, à l'impact environnemental et à la conformité sociale offrirait des perspectives précieuses sur le développement de stratégies de chaîne d'approvisionnement résilientes et responsables. De telles recherches pourraient également éclairer la prise de décision managériale en mettant en évidence les meilleures pratiques pour intégrer les objectifs de durabilité à la gestion des risques dans les arrangements d'externalisation logistique.

D'autre part, étant donné les recherches limitées sur la *Extended Resource-Based View* (ERBV), il est suggéré que les futures études sur la gestion des relations dans l'externalisation logistique adoptent l'ERBV comme cadre théorique fondamental. Cette approche permettrait d'obtenir une compréhension plus complète de la manière dont les entreprises développent des partenariats pour obtenir des avantages concurrentiels grâce aux prestataires de services logistiques (PSL). En se concentrant sur le réseau étendu de ressources accessibles à travers ces relations, les chercheurs

peuvent mieux appréhender les processus dynamiques et inter-organisationnels qui contribuent à l'obtention d'avantages concurrentiels à long terme. De plus, cette perspective révèle de nouvelles idées sur la manière dont les ressources en réseau influencent la performance de la chaîne d'approvisionnement dans le cadre de l'externalisation logistique.

L'analyse de contenu a été présentée pour répondre à nos deuxième et troisième questions de recherche en examinant 207 articles. Nous avons identifié cinq thèmes distincts: stratégie d'externalisation, technologies avancées dans l'externalisation logistique, développement des relations, ère des perturbations et externalisation logistique durable, chacun avec ses sous-thèmes respectifs. Bien que l'externalisation et le développement des relations aient gagné en popularité, d'autres sujets ont reçu une attention limitée au cours des 30 dernières années, avec seulement 30 articles qui leur étaient consacrés. De plus, cette étude met en lumière une lacune de recherche sur d'autres technologies de l'Industrie 4.0 telles que l'IoT, la Blockchain et le Big Data. Les chercheurs devraient explorer le potentiel de ces outils dans l'externalisation logistique. Ainsi, les futurs chercheurs devraient examiner les facteurs clés influençant l'adoption de l'IoT, de la Blockchain et du Big Data dans l'externalisation logistique. Cela inclut l'examen des défis technologiques, organisationnels et environnementaux dans le cadre de l'externalisation logistique afin d'identifier les obstacles et les facilitateurs d'une mise en œuvre réussie. Cette constatation contribue à une compréhension plus approfondie des diverses caractéristiques des ressources en réseau, en particulier en ce qui concerne les ressources technologiques, qui seront davantage examinées dans les chapitres 3 et 4 de cette thèse.

En outre, il existe un manque de recherche sur les effets des événements perturbateurs sur l'externalisation logistique, en particulier dans les services de transport. Les futures études doivent

se concentrer sur l'évaluation de l'influence des événements tumultueux (par exemple, la Covid-19, l'invasion de l'Ukraine, les conflits Chine-USA) dans l'externalisation logistique.

Cet article contribue au paysage théorique en retraçant l'évolution de l'industrie de l'externalisation logistique et en mettant en évidence des lacunes de recherche encore inexplorées. Il s'appuie sur des études antérieures qui mettaient principalement l'accent sur la perspective des prestataires de services logistiques ou qui manquaient d'une analyse approfondie du contenu dans ce domaine. Ce faisant, cette recherche actualise la littérature en incorporant l'impact de l'Industrie 4.0 et en abordant les perturbations mondiales récentes, telles que la pandémie de COVID-19 et les conflits géopolitiques, qui ont remodelé l'environnement logistique.
D'un point de vue pratique, cette étude vise à susciter un dialogue significatif parmi les professionnels de la logistique, les experts du secteur et les décideurs. Elle examine comment les services logistiques peuvent être transformés grâce aux technologies émergentes, la dynamique des relations triadiques complexes dans le commerce électronique, et les défis opérationnels posés par les événements perturbateurs. En offrant une revue complète des recherches actuelles sur la technologie dans l'externalisation logistique, l'article fournit des perspectives précieuses qui peuvent soutenir la prise de décision stratégique et favoriser l'innovation future dans ce domaine.
Cet article a été présenté lors du Vietnam Symposium in Supply Chain Management Conference (Hanoï, octobre 2023), ce qui pose les bases de futures recherches empiriques en établissant une compréhension fondamentale du paysage théorique dans la littérature sur l'externalisation logistique.

Résumé du deuxième article: L'acquisition de ressources en réseau dans l'externalisation logistique: Perspectives issues d'une analyse thématique

Le deuxième article adopte une méthodologie de recherche qualitative pour examiner les avantages spécifiques des ressources en réseau dans l'externalisation logistique et les méthodes utilisées par les entreprises pour accéder à ces ressources. Dans le chapitre 2, la revue systématique de la littérature, un écart de connaissance important est mis en évidence concernant l'utilisation des ressources en réseau dans l'externalisation logistique. Il est à noter qu'aucune étude existante n'a spécifiquement examiné les déterminants, les avantages ou les méthodes d'accès à ces ressources. Cette absence met en évidence une opportunité claire pour des investigations supplémentaires sur la manière dont les ressources en réseau contribuent à l'amélioration de la performance des chaînes d'approvisionnement. Plus précisément, l'objectif est d'identifier les principaux moteurs et obstacles associés à l'utilisation des ressources en réseau, ainsi que d'explorer les avantages concurrentiels qui peuvent être tirés de tels partenariats. Pour ce faire, les questions de recherche sont formulées comme suit:

Comment les entreprises obtiennent-elles des ressources en réseau auprès des prestataires logistiques?

Quels sont les moteurs et les obstacles à l'acquisition de ressources en réseau dans la logistique?

Quels sont les avantages concurrentiels obtenus grâce à l'acquisition de ressources en réseau?

L'auteur a mené une série d'entretiens semi-directifs auprès de 30 entreprises, à la fois internationales et locales, actuellement utilisatrices de services logistiques et situées au Vietnam. Par la suite, une analyse thématique a été utilisée pour identifier et analyser les thèmes liés aux déterminants, aux méthodes, aux avantages concurrentiels et aux bénéfices tirés des ressources en réseau.

Sous l'angle de la théorie élargie fondée sur les ressources (*Extended Resource-Based View* – ERBV) et grâce à l'application de l'analyse thématique, l'étude identifie quatre thèmes principaux : les méthodes d'acquisition des ressources en réseau, les déterminants de cette acquisition, les avantages concurrentiels qui en résultent, ainsi que les bénéfices spécifiques obtenus. Plus précisément, douze sous-thèmes et neuf sous-thèmes de second niveau ont été identifiés, offrant ainsi une compréhension approfondie de la dynamique des ressources en réseau dans le contexte de l'externalisation logistique.

La deuxième question de recherche a été traitée de manière empirique, et les bénéfices extraits pour les utilisateurs de services logistiques (LSUs) ainsi que pour les prestataires de services logistiques (PSLs) ont été discutés. Les résultats indiquent que les LSUs accordent une priorité particulière à l'expérience, aux actifs et au prestige des PSLs. En revanche, les PSLs cherchent à exploiter le réseau des LSUs pour élargir leur portefeuille clients et renforcer leur crédibilité en s'associant à des clients de renom. En ce qui concerne l'acquisition de ressources relationnelles par le biais du partage de connaissances et des pratiques de collaboration entre LSUs et PSLs, des perspectives divergentes émergent. Les LSUs soulignent que le partage d'informations relatives aux caractéristiques des produits, à la culture organisationnelle et aux priorités des clients est essentiel pour améliorer la qualité de leurs services. À l'inverse, les PSLs mettent en avant l'amélioration de la qualité de leurs prestations comme facteur fondamental favorisant une collaboration durable à long terme.

Sur le plan théorique, cette étude constitue un effort pionnier dans le domaine, visant à expliquer l'utilisation des ressources en réseau dans l'externalisation logistique. Alors que des recherches antérieures ont démontré que l'exploitation des avantages concurrentiels fondés sur la théorie des ressources (*Resource-Based View* – RBV) peut améliorer directement la performance de

l'externalisation et atténuer les risques opérationnels, ces travaux demeuraient limités par l'absence de prise en compte de l'ERBV (théorie élargie des ressources) ou des ressources en réseau. En adoptant une perspective ERBV, cette étude examine l'intégration des ressources en réseau tout au long du processus d'externalisation logistique. Ce faisant, elle développe un cadre d'analyse complet permettant d'examiner les déterminants, les caractéristiques et les bénéfices spécifiques dérivés des ressources en réseau à chaque étape du processus d'externalisation. Les résultats de l'étude enrichissent la littérature existante en précisant les bénéfices spécifiques associés à l'usage des ressources en réseau, prolongeant ainsi les travaux des études précédentes. De plus, cette recherche fait progresser la compréhension des caractéristiques des ressources en réseau en élargissant le cadre proposé par Lavie (2006), de manière à inclure les avantages obtenus tant par les clients que par les prestataires logistiques.
Cet article a été présenté lors de la conférence EurOMA en 2022, à Berlin, où il a contribué au débat croissant sur les approches qualitatives dans la recherche en gestion des chaînes d'approvisionnement.

Résumé du troisième article: L'impact des ressources en réseau sur la performance de la chaîne d'approvisionnement des utilisateurs de services logistiques

S'appuyant sur l'identification des caractéristiques des ressources en réseau et des bénéfices liés à leur acquisition présentée au Chapitre 3, le troisième article, développé au Chapitre 4, adopte une approche quantitative en recourant à la modélisation par équations structurelles (*Structural Equation Modeling* – SEM) afin d'examiner empiriquement la manière dont les ressources en réseau jouent un rôle de médiation entre divers facteurs et la performance de la chaîne d'approvisionnement des utilisateurs de services logistiques (LSUs).

Cette étude vise à quantifier les effets de médiation identifiés dans le chapitre précédent, en proposant une analyse statistique rigoureuse de la manière dont les ressources en réseau facilitent les améliorations de performance au sein de la chaîne d'approvisionnement des LSUs. Cet article cherche à valider empiriquement les apports conceptuels développés antérieurement, complétant ainsi la thèse par une approche méthodologique mixte et approfondie, destinée à comprendre le rôle médiateur des ressources en réseau dans l'amélioration de la performance de la chaîne d'approvisionnement dans le contexte de l'externalisation logistique.

Afin de répondre à la troisième question de recherche, cet article présente une enquête quantitative empirique menée auprès de 239 organisations, visant à estimer l'influence des ressources en réseau en tant que facteur médiateur dans la relation entre les moteurs de l'externalisation, les critères de sélection et la gestion contractuelle, et la performance de la chaîne d'approvisionnement dans le contexte de l'externalisation logistique. Les résultats confirment l'existence de relations à la fois directes et indirectes entre les moteurs de l'externalisation, les critères de sélection, la gestion contractuelle et la performance de la chaîne d'approvisionnement.

Plus précisément, le lien entre les moteurs de l'externalisation et la performance de la chaîne d'approvisionnement peut être expliqué par le moteur de la réduction des coûts. Les LSUs sont motivés par le besoin de réduire les coûts, et leurs attentes vis-à-vis des services externalisés s'alignent avec l'objectif d'une meilleure efficience au sein de leur chaîne d'approvisionnement.

Par ailleurs, le rôle déterminant de la catégorie de contrat sur la performance de la chaîne d'approvisionnement a été discuté dans les travaux précédents. Au-delà des exigences et termes contractuels obligatoires, la nature du contrat entretient également une relation indirecte avec la performance de la chaîne d'approvisionnement en favorisant des partenariats à long terme.

Différents types de contrats influencent la nature de la collaboration entre les parties, façonnant le degré d'engagement ainsi que les incitations à l'amélioration continue, contribuant ainsi durablement à l'amélioration de la performance de la chaîne d'approvisionnement. En effet, un contrat à long terme contribue indirectement à une meilleure performance de la chaîne d'approvisionnement en favorisant une relation stable et durable entre acheteurs et fournisseurs. Une telle collaboration incite les fournisseurs à baisser les prix, à réduire les incertitudes liées aux coûts et à améliorer la qualité de service afin de préserver le partenariat, ce qui accroît l'efficacité globale de la chaîne logistique.

En outre, les critères de sélection des prestataires logistiques influencent significativement la performance de la chaîne d'approvisionnement, de manière directe et indirecte via la médiation des ressources en réseau. Conformément à la littérature discutée au Chapitre 1, des critères de sélection standardisés permettent de rationaliser le processus de sélection, garantissant cohérence, efficience et efficacité opérationnelle immédiate; ce qui améliore directement la performance de la chaîne logistique. En revanche, par le biais des effets médiateurs des ressources en réseau, ces critères de sélection peuvent également être utilisés pour développer des relations plus approfondies avec des prestataires spécifiques, au lieu de simplement suivre un processus standardisé de sélection.

Par ailleurs, les gestionnaires peuvent tirer parti d'un ensemble de critères de sélection flexibles et personnalisés lors de la formation d'alliances stratégiques avec certains prestataires logistiques afin d'améliorer la performance future de la chaîne d'approvisionnement. À l'inverse, pour les prestataires logistiques qui ne sont pas envisagés comme des partenaires à long terme, les gestionnaires peuvent appliquer des cadres de sélection standardisés afin de maintenir un niveau de compétitivité entre les candidats.

De plus, l'étude met en évidence l'importance des accords contractuels à long terme avec des partenaires logistiques potentiels. L'établissement de tels accords permet aux gestionnaires d'éviter des procédures de sélection répétitives et complexes, tout en favorisant la mise en place de partenariats stables et exempts de perturbations.

Enfin, plutôt que de se focaliser principalement sur l'exploitation des actifs logistiques et des services offerts par les prestataires dans une optique d'amélioration immédiate de la performance de la chaîne d'approvisionnement, les entreprises utilisatrices de services logistiques (LSUs) devraient accorder la priorité aux bénéfices à long terme. Ces derniers peuvent être obtenus grâce à la définition claire des moteurs de l'externalisation et à l'établissement de partenariats stratégiques avec des prestataires logistiques appropriés.

Thesis summary

The thesis follows a structured, three-paper format, each addressing distinct but interrelated aspects of network resources on supply chain performance in the context of logistics outsourcing.

This thesis is structured into five chapters, beginning with an introductory chapter that outlines the research context, objectives, literature review, and a theoretical framework used in this thesis. The core of the thesis adopts a three-paper format, with each paper presented in its respective chapter: Chapter 2 features the first paper (structured literature review), Chapter 3 presents the second paper (qualitative paper), and Chapter 4 contains the third paper (quantitative paper).

The first paper is a Structured Literature Review (SLR), providing a comprehensive and methodical perspective on existing logistics outsourcing research. This paper systematically evaluates the body of knowledge within the field, identifying key trends, gaps, and future research directions. Presented at the Vietnam Symposium in Supply Chain Management Conference in October 2023, Hanoi, this paper establishes a foundational understanding and theoretical gaps of theories applied in the literature of logistics outsourcing, setting the stage for the empirical studies that follow.

The second paper adopts a qualitative research methodology to investigate the specific advantages associated with network resources in the context of logistics outsourcing, as well as the strategies employed by firms to access these resources. As established in the first paper through a structured literature review, a significant gap exists in the current body of knowledge concerning the role of network resources in logistics outsourcing. Specifically, prior studies have not addressed the determinants, benefits, or mechanisms through which such resources are accessed. This absence underscores the need for further empirical exploration into the ways network resources can enhance supply chain performance. The study seeks to identify the principal enablers and

constraints influencing the effective utilization of network resources and to examine the competitive advantages that may arise from such engagements. Drawing on data from in-depth interviews and employing thematic analysis, the research elucidates both the strategic and operational benefits of leveraging network resources. Additionally, it offers practical insights into effective relationship-building approaches within supply chain partnerships. This paper was presented at the EurOMA Conference in 2022, held in Berlin, where it contributed to the expanding discourse on qualitative methodologies in supply chain management research.

The third paper adopts a quantitative approach, using Structural Equation Modeling (SEM) to empirically investigate how network resources mediate the relationship between various factors and the supply chain performance of Logistics Service Users (LSUs). This study aims to quantify the mediation effects identified in the qualitative research, providing a robust statistical analysis of how network resources facilitate performance improvements within the LSU supply chain. Planned for presentation at an upcoming international conference, this paper seeks to validate the conceptual insights with empirical evidence, thereby completing the thesis with a comprehensive, mixed-methods approach to understanding the mediating role of network resources in enhancing supply chain performance in logistics outsourcing.

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Chapter 1: Introduction, Theoretical Framework, Research questions, Literature Review and Research Methodology

1.1 Introduction

Since the 1980s, accelerated globalization has significantly influenced the logistics sector, with outsourcing emerging as a pivotal strategy for companies aiming to enhance efficiency and reduce costs. This trend, particularly prominent in Asia, has transformed the region into a global hub for logistics services. Developed Western nations, seeking to optimize their supply chains, have increasingly outsourced logistics functions to developing Asian countries, including Southeast Asia. This strategic shift has enabled companies to reduce fixed costs and improve operational flexibility, allowing them to concentrate on their core business activities (Su, 2007). By outsourcing logistics, firms have minimized excess inventory and sped up time-to-market processes, ultimately gaining a competitive edge in the global market (Hsu et al., 2012). (Krakovics et a., 2008). The rising importance of logistics outsourcing, coupled with the growing availability of various logistics services, underscores the critical and complex nature of the logistics service providers (LSP) evaluation and selection process. Companies employ a range of methods to analyze, evaluate, and choose the right LSP partners, ensuring they align with their operational goals and strategic objectives.

Recently, the significance of the alliance formation between logistics users (i.e., companies utilizing the logistics services) and LSP has increased, particularly concerning the management of supply chain relationships. By creating an alliance with LSP, firms can leverage complementary resources and expertise, thereby unlocking numerous benefits associated with logistics outsourcing. Moreover, according to Langley and Capgemini (2007), as logistics service users require a unique set of tailored services and types of equipment (e.g. geographical coverage or IT equipment), more and more long-term benefits will be achieved from the alliance partnership between logistics service uses and providers. Alliance partnerships are pivotal in logistics

outsourcing, highlighting the intricate relationship between service providers and customers as a key factor in achieving success (Deepen, 2007). These competitive advantages demonstrably include enhanced customer service, cost reduction, service quality, mitigated risk factors, and a more significant focus on core competencies (Liu et al., 2015; Zhu et al., 2017). Driven by the rapid development of technology and the urgent need for globalization, LSP plays a critical role in enhancing user value by optimizing operational efficiency and facilitating resource and information sharing. By utilizing user data, LSP can reduce inventory costs and minimize stockouts. Research conducted by Langley and Capgemini (2015) reveals that the relationship between customers and LSP has increasingly proven advantageous and satisfactory, leading to notable reductions in logistics costs (9%), inventory costs (5%), and fixed assets (15%). This highlights the pivotal role of partnerships with logistics providers in enhancing competitive advantages for focal firms in upcoming developments. As a result, the practice of logistics outsourcing has become a crucial strategic necessity that offers significant benefits, thereby justifying its integration into business plans (Sahay and Mohan, 2006). Therefore, it is imperative to conduct further in-depth exploration into the extracted competitive advantages from effective partnerships with logistics service providers, and their impacts on supply chain performances among service users in the logistics outsourcing context.

1.2 Background and Literature Review

1.2.1 What is logistics outsourcing?

Outsourcing is becoming a prominent strategy for enterprises to solve complicated problems related to customer satisfaction and competitive advantage enhancement (Aktas et al., 2011; Zhu et al., 2017). The increased emphasis on outsourcing has given rise to an increasing scholarly interest in the topic, resulting in the formulation of various theoretical frameworks drawn from diverse academic studies (McIvor, 2009). The concept of outsourcing, originating in the late 1980s,

pertains to the transfer of some or all internally managed functions or services to external providers (Espino-Rodríguez & Gil-Padilla, 2005). Previous research primarily centered on the information technology dimension of outsourcing (Aubert et al., 2004). Nevertheless, over time, an extension of functions and services linked to outsourcing activities has come to the fore. The keywords "logistics outsourcing", "logistics providers" and "logistics alliances" are used interchangeably to describe outsourcing activities simply ranging from outsourcing single logistics activities such as transportation, warehouse, and packaging services to an integrated and complicated logistics process (Konig & Spinler, 2016). Specifically, logistics outsourcing is defined as a process that transforms logistics activities within enterprises into using external logistics companies (Govindan & Vafadarnikjoo., 2016). According to Jaafar & Rafiq (2005), on average, firms achieve a reduction of nine percent in expenses and a 15% increase in quality and capacity through the utilization of outsourcing practices. Logistics outsourcing can enable focal firms to achieve cost advantages, leverage their core capabilities, gain a competitive edge, align with technological changes, and optimize the scale of their operations (Erturgut, 2012).

1.2.2 Risks in Logistics outsourcing

Despite well-established benefits associated with logistics outsourcing, evidence has been found in multiple studies indicating instances where logistics outsourcing has had negative implications for logistics service users (LSU). In the case of organizational decision-makers, the review of the risks posed by logistics outsourcing has represented a major challenge. Different levels of firm engagement in outsourcing contracts lead to different complexities of interfirm interaction and, thus, impact the nature and potential magnitude of risk concerns (Tsai et al., 2008).

These risks can generally be classified as disruption risks, operational risks, asset risks, relationship risks, and competence risks, as highlighted in the frameworks by Tsai et al. (2008) and Konig & Spinler (2016) (See Figure 1).

One major operational risk is the presence of hidden costs that are not explicitly covered in contracts. These unexpected expenses can arise from various operational inefficiencies or unforeseen service charges, potentially negating the cost-saving advantages of outsourcing (Tsai et al., 2008). Additionally, firms face liability and connected economic risks, which may include financial penalties or legal implications due to non-compliance or breaches by the LSP (Tsai et al., 2008). The same authors (2008) also explained that outsourcing can also lead to a substantial loss of control over logistical processes. This diminished control may result in vulnerabilities, such as the loss of cargo security and visibility across the supply chain. The complexity of aligning multiple IT systems between the firm and the LSP can lead to limited compatibility, increasing the risk of cyberattacks and data breaches. Moreover, relying heavily on an LSP can lead to an over-dependence on a single provider, compromising the firm's ability to remain agile and responsive to market changes. This dependency may result in inadequate knowledge transfer about logistics operations back to the firm, which can impair strategic decision-making and innovation (Ansari & Modarress, 2010).

Disruption risks in logistics outsourcing encompass both man-made and natural threats, severely hampering supply chain stability. The risks of terrorism, labor strikes and socio-political crises, have a high human factor and can lead to a significant disruption of operations (Konig & Spinler, 2016). Natural perils, such as earthquakes, tsunamis and pandemics, cause unforeseen interruptions that can disrupt international supply chains.

Besides, Cardak & Wilkins (2009) noted that asset risk is exemplified by the low or non-utilisation of existing logistical facilities or technologies when outsourcing. As a result, this under-utilisation can result in unanticipated inefficiencies and financial liabilities. Competence risks further complicate outsourcing strategies, particularly when there is inadequate competence in supporting strategic development for service users (Konig & Spinler, 2016). Kremic et al. (2006) highlighted the failure to develop strategic resources necessary for enhancing business flexibility and fostering innovation in response to an evolving market. This lack of strategic competence can impede the firm's ability to adapt and thrive in competitive environments. Relationship risks are also prevalent in logistics outsourcing, demonstrating through contract violations and vendor's opportunism. As noted by Harland et al. (2005), vendors may unilaterally modify, terminate, or fail to honor contractual agreements, potentially resulting in legal disputes and associated costs. Furthermore, vendors may deliberately withhold or manipulate information, creating misunderstandings in contractual terms that can lead to unforeseen price escalations and operational inefficiencies (Logan, 2000).

1.2.3 Logistics services

The inclusion of the logistics services enhances the overall quality of the logistics services. Sink and Langley (1997) along with Rajesh et al. (2011) have grouped logistics services into several categories, including Transportation, Inventory and Warehousing, Packaging and Production, and Customer Services. Sink et al. (1996) describe logistics services as encompassing a range of activities such as warehousing, transportation, inventory control, order processing, information systems, and packaging (See Table 1).

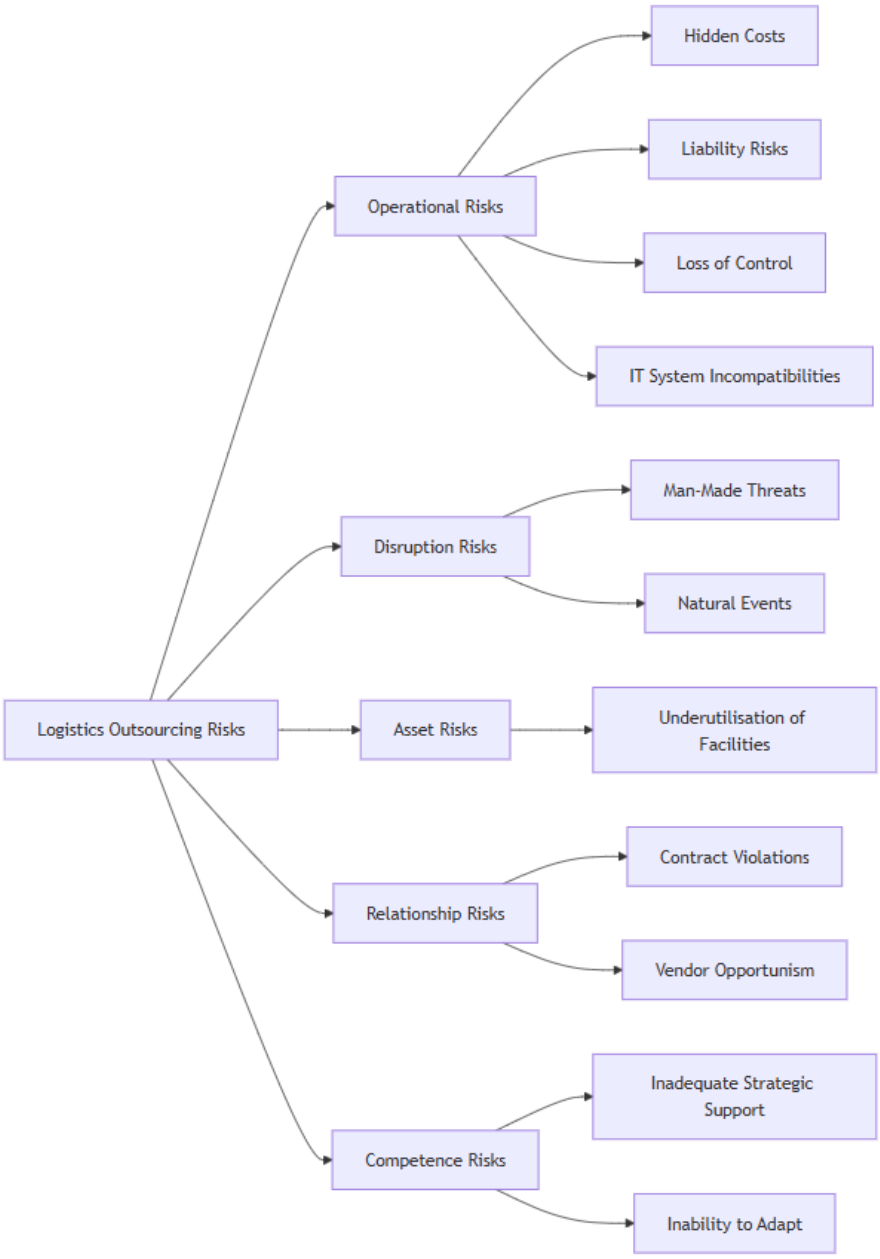

Figure 1: Risk category in logistics outsourcing. Data source: Conducted from Tsai et al. (2008) and Konig & Spinler (2016).

Table 1: Logistics service and example

Conducted from Sink et al. (1996) and Rajesh et al. (2011)

Logistics service	Logistics activities examples

Warehousing	1. Kitting 2. Receiving 3. Marking/Labeling 4. Assembly 5. Return Goods 6. Storage
Transportation	1. Goods Relocation 2. Forwarding 3. Freight Bill Payment/Audit 4. (De)consolidation 5. Brokering 6. Shipping 7. Load Tendering 8. Delivery
Information system	Routing system, Electronic data interchange (EDI), scheduling system.
Inventory Management	Demand forecasting, Warehouse Location analysis, Network consulting and warehouse layout designing.
Order management	Order fulfillment
Others	Packaging design, recycling packaging.

In contrast, Hsiao (2010) has updated the logistics services and undertaken the task of categorizing it into four distinct tiers of logistics (See Figure 2).

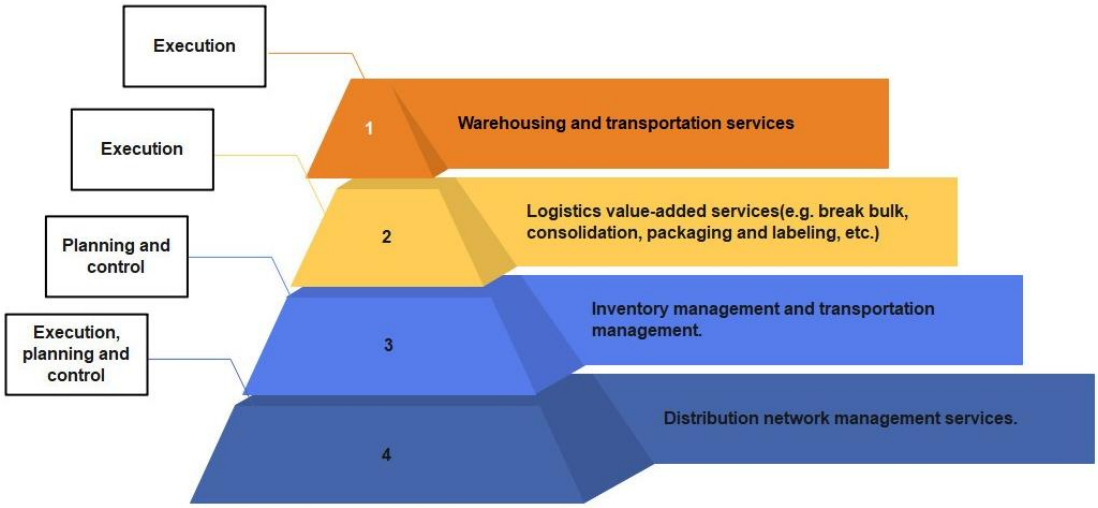

Figure 2: Logistics service's level. Conducted from Hsiao (2010)

Level 1: Logistics providers offer fundamental warehousing and transportation services. The contractual partnership between clients and logistics providers is conducted in short-term.

Level 2: Value-added activities, refer to related logistics activities that were traditionally performed by manufacturers but are now performed by distributors as part of final processing.

Level 3: This refers to the outsourcing of logistics controlling and planning operations, such as inventory (e.g. inventory forecasting, etc.) and transportation (e.g. routing scheduling, etc.) from the perspective of management. Specifically, these logistics services will be customized and tailored to align with the customer's requirements.

Level 4: When operations are outsourced at this level, the Logistics Service Providers (LSPs) take responsibility for managing the logistics network and coordinating the daily logistical flow within the network.

1.2.4 Logistics providers

A logistics service provider (LSP) is a specialized organization that offers a range of tasks related to the management of logistics. The outsourcing of labeling, warehousing, customization, picking and packaging, order processing, light assembly, and transportation is increasingly becoming more important. LSPs offer appealing features, including the delivery of various logistics activities, integrated logistics services, and innovative logistics solutions (Vinay et al., 2009). Besides some small-scaled local enterprises, there are large, multinational corporations such as FedEx, DHL, and UPS. Moreover, it has been addressed by Daim et al. (2013) that LSPs can engage in tailored logistics activities (e.g. invoicing or replenishment). The terms LSPs and 3PL have often been used interchangeably in scholarly literature. Currently, 3PL is recognized as the most prominent type of LSP within supply chain operations (Andreas et al., 2013). Additionally, there are first-party, second-party, fourth-party, fifth-party and sixth party logistics providers that exist beyond the 3PL concept (Haifa et al., 2024). The definitions of them are presented as follows:

1. First-Party Logistics (1PL): A small enterprise that manages its own internal logistical operations.

2. Second-Party Logistics (2PL): A basic service provider that provides storage or transportation services.

3. Third-Party Logistics (3PL): The logistics operator provides an extensive variety of services and comprehensive logistics management solutions.

4. Fourth-Party Logistics (4PL): A singular point of contact between a client and the logistics coordinators, in charge of employing additional 3PLs and 2PLs and handling the entire logistics procedure.

5. Fifth-Party Logistics (5PL): operates at a strategic level, emphasizing the development and implementation of innovative logistics solutions across the entire supply chain.

6. Sixth-Party Logistics (6PL): provides a fully integrated and autonomous supply chain, where artificial intelligence oversees and optimizes all operational processes

The terms “3PL” has been used frequently in scholarly literature. The emergence of 3PL providers can be traced back to the growing trend of outsourcing that gained momentum in the 1980s. Bowersox et al. (2012) stated that in this period, manufacturers and producers recognized the potential to achieve significant cost savings through efficient logistics systems. Farahani et al. (2011) stated that the phrase of third-party logistics (3PL) evolved during the early 1990s as a distinct category of logistics service provider (LSP) that provides integrated services. Marasco (2008) outlines the various functions and delineates the scope of third-party logistics (3PL) services. These services range from conventional warehousing and transportation services to the management of the entire logistics processes, as well as the provision of managerial support through a close partnership (Berglund et al., 1999, Laarhoven et al., 2000; Lieb & Bentz, 2005). Over time, the relationship between 3PLs and supply chain interfaces has emerged rapidly, offering various tailored logistics services to meet customer's specific requirements. These collaborations vary in duration, with a focus on enhancing overall operational effectiveness and efficiency (Bask, 2001). The rise of globalization and the advent of Industry 4.0 have further accelerated the adoption of 3PL providers (Neeraja et al., 2014), which stated the crucial roles of collaboration with 3PL providers in today's supply chain management (Hofmann & Osterwalder, 2017).

In addition to the definition of 3PL, there exists a concept known as fourth-party logistics (4PL). A 4PL firm is responsible for providing an all-encompassing solution for supply chain

management by effectively organizing and supervising the resources of the organization. Li et al. (2003) stated a key characteristic of 4PL is its ability to design and implement customized, end-to-end supply chain solutions that go beyond the capabilities of any individual service provider. While some authors view the 4PL as an integrator that uses information systems and technology for a supply chain integrated process, others define the 4PL providers as an upgraded evolution of the 3PL (Kasperek, 2013). The same author also noted that an LSU outsources some logistical operations to multiple 3PLs and employs 4PL to coordinate their activities.

Significant transformations continue to shape supply chain management, particularly with the advancement of 3PL and 4PL services. More recently, 5PL providers have been conceptualized as virtual entities that manage supply chains strategically (Hosie et al., 2012). The core responsibilities of 5PL companies include supply chain mapping and reengineering, executing 4PL functions, such as transport integration, handling, and warehousing—and implementing advanced information systems to enable real-time visibility and control (Matlack Leasing, 2019). Unlike traditional logistics providers, 5PL organizations function as fully virtual entities, removing the role of physical assets and instead operating through web-based platforms that facilitate data exchange among supply chain participants (Hosie et al., 2012). The success of 5PL relies heavily on the seamless integration of IT and digital systems.

The accelerating pace of technological progress, particularly the digital transformation driven by Industry 4.0, is reshaping global business frameworks (Hoyer et al., 2021). Niu et al. (2022) stated that the concentration has now placed on the development of a new generation of LSP that are fully integrated and automated to enhance supply chain efficiency. The concept of "6PL" has emerged to define this AI-driven, fully automated supply chain management model. By harnessing

cutting-edge Industry 4.0 technologies, this approach optimizes supply chain operations, offering businesses numerous strategic advantages (Akbari, 2024).

1.2.5 Logistics outsourcing process

To elucidate the theoretical underpinnings of the logistics outsourcing process as examined in prior studies, this section will present a literature review of the logistics outsourcing process and the selected process for the theoretical framework of this paper.

Although there are numerous research papers studied about the topics "outsourcing" and "outsourcing selection", there are only a few papers providing the outsourcing process framework in their research. For example, Momme & Hvolby (2002) introduces the 4-stage outsourcing process, whereas Selviaridis & Spring (2010) and Chen et al. (2011) show the 3-stage process.

In order to update the content of each stage, the researcher has collected papers that mentioned the outsourcing process and explained activities significantly in each stage (See Table 2). Consequently, each stage has explained the complicatedness and consideration throughout the process of outsourcing.

Table 2: Outsourcing decision-making process (Sources: Selviaridis & Spring, 2010; Hamzah et al, 2010; Chen et al., 2011).

	Preparation phase	**Vendor selection phase**	**Transition and relationship management phase**
Selviaridis & Spring (2010)	Identify and clarify logistics services and candidate's list.	Contract management	Service implementation and evaluation

Hamzah et al. (2010)	Setting the supply chain objectives and outsourcing drivers	Vendor selection	Relationship and contract management
Chen et al. (2011)	Preparing supplier's list	Vendor negotiation and selection	Forming partnership

1.2.6 Logistics industry in Vietnam

The logistics industry is essential for managing the storage and transportation of commodities in the economy, hence improving production efficiency and overall supply chain performance. Decision No. 1481/QD-BGTVT specifies that the entire fleet capacity is aimed to increase up to 7.5 million DWT by 2020, with an anticipated rise in export and import freight market share to nearly 30% (VIRAC, 2020). Furthermore, logistics coordination planning, as outlined in Decision 175/QD-TTg, aims to provide a comprehensive and efficient third-party logistics (3PL) service package, in conjunction with enhancements in e-commerce and supply chain management systems. The logistics market is anticipated to expand at an annual rate of 20-25%, with the outsourcing of logistics services predicted to attain 40% post-2020 (VIRAC, 2020).

The logistics sector in Vietnam consists of over 30,000 registered companies, with 89% being local businesses (MOF, 2021). Despite their dominant presence, Vietnamese companies possess merely 30% of the market share, while the remaining portion is primarily controlled by foreign enterprises (MOF, 2021). This disparity underscores the difficulties domestic enterprises encounter in securing a greater portion of the logistics industry, notwithstanding their numerical superiority. Within the total logistics costs, transportation represents 60%, handling expenses account for 21%, and warehousing costs make up 12% (MOF, 2021). This disparity underscores the higher logistics burden on the Vietnamese economy compared to more developed nations.

Meanwhile, statistics also showed that road transport in Vietnam accounts for around 75% of total transportation, establishing it as the dominant mode relative to others. Inland waterways constitute approximately 20%, whilst rail, maritime, and aerial transit include comparatively lesser shares (Mai, 2020). Significantly, in the analysis of logistics transport demand by enterprises, maritime transport is the predominant mode, accounting for over 68%, followed by road, air, and alternative transportation methods (Mai, 2020).

Ministry of Industry and Trade (2022) reports that around 54% of Vietnamese logistics service providers deliver warehousing services, which are critical to the country's logistics sector. As of September 2021, Vietnam had 48 cold storage facilities with a total capacity of 600,000 pallets. Among these, 36 cold storage facilities are situated in the South, boasting a capacity surpassing 525,000 pallets. The Central region contains one cold storage facility with a capacity of 21,000 pallets, while the North accommodates 11 facilities with an approximate capacity of 55,000 pallets. The nation utilizes more than 700 refrigerated trucks and 450 rail carriages specifically for the delivery of refrigerated cargo containers.

In practice, the majority of logistics enterprises in Vietnam primarily function as second-party logistics (2PL) providers, operating as intermediaries, small-scale transportation firms, or companies offering warehouse rental services. Over 75% of freight transport companies own only 1-5 vehicles, which they manage directly. In Vietnam, warehouse rental businesses tend to act more as "rental landlords" rather than fully operating as 2PL providers (Thuy Duong, 2018). Third-party (3PL) and fourth-party logistics (4PL) enterprises constitute only 16% of the total number of logistics companies. However, within the 3PL sector, most of the leading global logistics providers are active in Vietnam, contributing significantly to industry revenue in comparison to domestic firms (Thi Vien, 2022).

Companies providing 4PL services are usually a separate entity established as a joint venture or on the basis of long-term contracts between the main customer and one or more number of other partners. Famous 3PLs and 4PLs have been present in Vietnam for a long time such as DAMCO, APL Logistics, OOCL Logistics (developed from shipping lines), Schenker, DKSH, Nippon Express, Kuehne & Nagel, Samsung SDS, ... (developed development from forwarding companies). These units are strategic logistics partners with large global shippers such as Nike, Adidas, Samsung... Recently, these businesses have increased investment in expanding operations in Vietnam. Besides, domestic enterprises also have movements with specific 3PL strategic models: Vinafco, Saigon Newport Corporation, Bac Ky Investment Joint Stock Company, Transimex Saigon, ITL, Gemadept...

1.3 Theoretical Framework

The study follows the theoretical model presented in Figure 3. This model describes the connection between the logistics outsourcing process, network resources and the company's performance. While the RBV emphasizes the ownership of internal resources as a fundamental source of competitive advantage, this thesis adopts the Extended Resource-Based View theory (ERBV), which posits that resource ownership is not always a prerequisite for achieving competitive benefits. To be more specific, under the perspective of ERBV, this theoretical model proposes to explore the competitive advantages gained in the alliance partnership with LSP and estimate the influence of network resources on the company's supply chain performances. Significantly, the country of Vietnam is positioned to capitalize on this trend, supported by a convergence of favorable circumstances rooted in its geographical location. The geographical location of Vietnam holds significant strategic importance within the region, further emphasized by its expansive coastline featuring numerous seaports and international airports. The complex system of roads and

transnational rail connections, smoothly integrated with growing economic corridors, enhances the logistical potential of the terrestrial network.

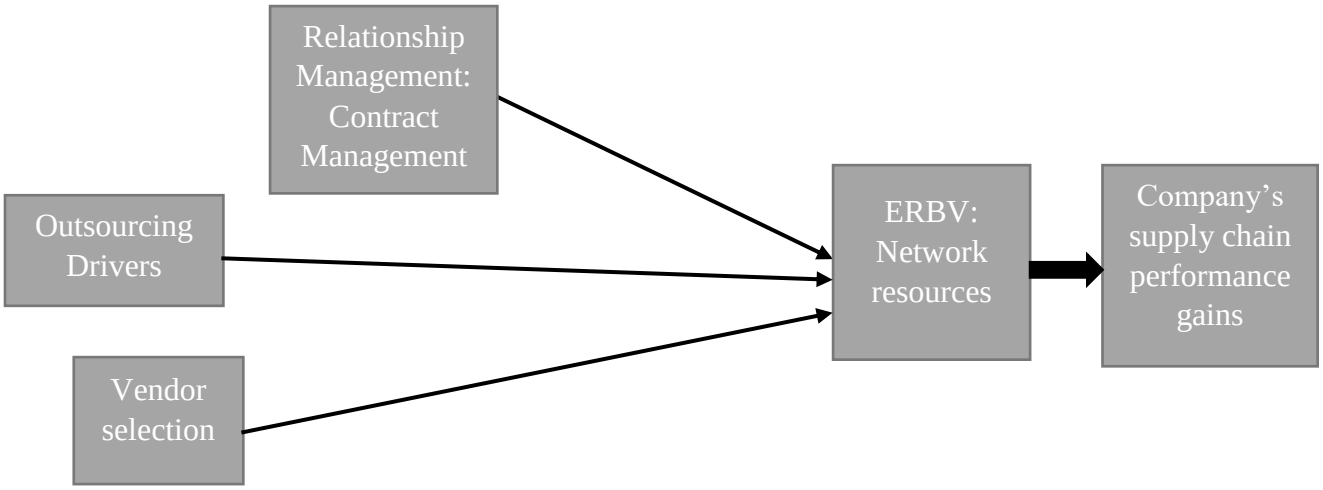

Figure 3: Theoretical Model

Source: Author's own work

1.3.1 Resource-Based View (RBV) theory

The Resource-Based View (RBV) theory, notably evolved by scholars like Barney (1991) and Wernerfelt (1984) builds upon the foundational work of Penrose (1959). Penrose's seminal work highlighted that a firm's growth depends on its internal attributes. Also, the same author (1959) postulated that the significant value of a firm's resources in bolstering its competitive advantages is contingent upon its strategic exploitation, which ensures the delivery of potential value to the firms. Meanwhile, Wernerfelt (1984) posited that resource-based barriers share a conceptual resemblance with entry barriers at the industry level. By leveraging its resource-related advantages, a firm can strategically position itself to attain a first-mover advantage or enhance diversification efforts effectively. Expanding upon Penrose's framework, Barney (1991) added

that, to attain a lasting competitive advantage, a firm must possess resources such as human resources and other organizational assets that meet Valuable, Rare, Inimitable, and Non-Substitutable criteria. To explain, the author (1991) defined them as follows:

- The value of resources can be strategically leveraged to achieve potential opportunities and mitigate operational risks.
- The rarity of resources is characterized by their limited availability, scarcity, and uneven distribution across companies in the market.
- The concept of inimitability relates to the degree to which resources are challenging for other organizations to imitate.
- The concept of non-substitutability of resources states that it is not possible to easily replace one specific resource with another.

Furthermore, Peteraf & Barney (2003) highlighted that resources have heterogeneous effects on a firm's capacity to achieve cost-effectiveness or service differentiation, subsequently impacting performance. They (2003) then further explained that the cost of resources should not be reflected as a competitive advantage. The relationship between resource exploitation and a firm's performance, as well as its impact on enhancing the organization's core competencies, has been explored. The study reveals that the effectiveness of resource exploitation within a firm is fundamentally dependent on its skills, technologies, and knowledge base (Prahalad & Hamel, 1990).

Within this research thesis, the Resource-Based View (RBV) theory is applied and studied in elucidating the competitive advantages exhibited by Logistics Service Providers (LSPs). This choice is informed by the alignment of the foundational assumptions laid out by Barney (1991)

with the prevailing operational realities in the logistics service sector. Notably, in the logistics industry, resources are distributed among various LSPs, freight operators, forwarders, and users. Of particular significance are knowledge resources, which often exhibit limited mobility and incurring transfer costs when transitioning from one LSP to another. Variability exists among firms in the range of resources, including both tangible and intangible assets. These encompass equipment, various forms of capital, employee skills, and financial resources, alongside capabilities and organizational processes that are employed for the enhancement of a firm's performance (Daft, 2010).

Regarding “resource possession” and “resource exploitation”, Rubin (1973) stated that firms must engage in the refinement of raw resources to merge them. Adding to this argument, Mahoney & Pandian (1992) further supported this idea by addressing that a company can achieve economic rents or advantages not only by the nature of the superior quality of its resources but also by its unique competency resides in the optimal utilization of its resource base.

1.3.2 Outsourcing and Resource-Based View theory

Barney's (1991) statement about the RBV suggests that a company's performance and competitive advantages are derived from effectively utilizing diverse sets of resources. These key resource characteristics include value, rarity, inimitability, and non-substitutability (VRIN). Bates & Flynn (1995) further emphasize that companies can sustain and create competitive advantages by maximizing their capabilities and resource utilization in their operations. Other articles in this special issue provided contributions to the role of resources and their synergy in contexts of diversification (Harrison et al. 1991), CEOs and their idiosyncrasies as a valuable resource of the firm (Castanias & Helfat 1991), organizational identity as a core competency leading to competitive advantage (Fiol, 1991), and a comparison of the RBV with industrial organization

economics (Conner 1991). The list of strategic resources that are found to promote the firm competitiveness includes (but are not limited to) physical and capital resources (traditional factors of production), human resources, organizational processes, firm attributes, capabilities, social relationships (relational capital) and coordinating mechanisms, etc. (Collis & Montgomery, 1995; David-West et al., 2018). These resources can be classified into three categories i.e., physical capital resources, human capital resources, and organisational capital resources (Barney, 1991). Knowledge is recognized as one of those key strategic firm resources that determines firm performance in the long run (Curado & Bontis, 2006). These aspects offer a rationale for considering knowledge as a strategic resource of the firm and this led to the development of the knowledge-based view (KBV) of the firm (Grant, 1996). KBV is thus considered an offshoot of RBV and extends the portfolio of firm resources to knowledge-based resources (Perrira & Bamel, 2021).

Espino-Rodríguez & Padrón-Robaina (2006) assert that the RBV framework has garnered significant attention within the outsourcing sector, particularly among enterprises seeking both resources and a focus on core services. This perspective has also extended to logistics outsourcing, evidenced by prior research examining various facets such as warehousing, transportation, inventory management, customs clearance, and logistics IT services (Wong & Karia, 2010). Employing RBV within logistics outsourcing enables companies to leverage the resources offered by logistics providers as a strategic approach (Bolumole et al., 2007). Despite the widespread recognition of RBV within international business, there exists a dearth of theoretical advancement concerning its application within the realm of international logistics. While numerous studies have investigated the impact of RBV on logistics performance (Bolumole, 2007; Yeung et al., 2012; Karia & Wong, 2013; Yang & Lirn, 2017), the utilization of RBV in the context of outsourcing

from international logistics providers remains largely unexplored. This gap can be attributed to inherent disparities in organizational characteristics, resources, and service quality between domestic and international logistics providers. Consequently, this study aims to elucidate client expectations when developing partnerships with logistics providers. The RBV recognizes that resources are only semi-permanently tied to firms (Wernerfelt, 1984), meaning managers' resource pools are largely exogenous or predetermined in the short-term. However, the RBV also acknowledges managers play a role in perceiving opportunities, aligning available resources to capitalize on opportunities, and acquiring supplementary resources as needed to execute strategic objectives - though these augmentations are constrained (Barney, 1991). Thus, the RBV frames a manager's role as a "key decision maker". Hence, this study will focus mainly on the client's perspective to understand more about the effectiveness of decision making in the context of logistics outsourcing.

Traditional viewpoints regarding competitive advantage, such as the resource-based view (RBV), have traditionally portrayed firms as autonomous entities. Consequently, these perspectives offer only a limited understanding of competitive advantage, particularly in light of the expanding importance of interfirm alliances. Although alliances were discussed in several forms, including joint ventures, franchising, long-term marketing and licensing arrangements, reciprocal trade agreements, R&D partnerships, and involvement in research consortia (Dussauge et al., 2000), the partnership between logistics service clients and logistics service providers has not been studied and explored. Regrettably, the swiftly advancing literature on alliances has established its own direction, primarily through phenomenon-driven research and by integrating insights from diverse theories including RBV, transaction-cost economics, learning and knowledge management, game theory, and social network theories (Lavie, 2006). The focus on alliance formation and

performance within this body of literature has resulted in a theoretical gap between the combination of theories within the alliance context and empirical observations regarding the performance of interconnected firms. Thus, this paper aims to address this gap by extending the Resource-Based View (RBV) within the framework of alliance partnership formation in logistics outsourcing.

1.3.3 Extended Resource Based View theory – Network resources

To start with, Lavie (2006) pointed out the conceptual disparity between RBV and Social Network theories is substantial. While RBV centers on examining firms and their internal resources for generating rents, Social Network theories underscore the significance of external connections. Lavie's work integrates the RBV theory with network theory, called the ERBV framework. Originally, RBV analyses overlooked the impacts of network on performance. The limited studies integrating social network principles highlight the contrasting focuses of these two theoretical frameworks. These investigations treat networks as independent variables moderating the impact of resources on performance. Therefore, there is a necessity to investigate an application where actor attributes play a prominent role in enhancing firm performance. According to Dyer & Singh (1998), the relational view of the ERBV is characterized by the supernormal profit that is produced collaboratively within an exchange relationship. These profits, unattainable by either firm independently and is only attainable through the unique, joint collaborations of the specific alliance partners. Additionally, Hitt et al. (2016) added the creation of partnerships and inter-organization relationships is essential for the development of competitive advantages. Wassmer & Dussauge (2011) stated that in the contemporary business landscape, firms typically do not rely on a single alliance; instead, many maintain alliance portfolios consisting of multiple simultaneous strategic alliances with various partners to access a diverse range of resources.

In logistics outsourcing, these constraints have sparked scrutiny towards RBV, particularly for its tendency to downplay the methods and expenses tied to resource development and acquisition. Although the current study addresses the pivotal aspect of resource origin and development, it overlooks the formal integration of resource-based methods through alliance networks. Hence, this research will explore the methods associated with extracting rents through alliance networks and their benefits on firm performance.

According to Lavie (2006), the concept of imperfect mobility holds significance within interconnected firms. In a scenario of perfect mobility, resources can be exchanged and utilized without necessitating alliances. However, alliances act as facilitators in mobilizing resources that are conventionally perceived as immobile. Even in cases where resources remain inherently immobile and not physically transferred, alliances provide a mechanism for transferring the associated benefits, thereby facilitating the attainment of competitive advantages for all involved parties. Especially, in the context of logistics outsourcing, the imperfect mobility might reflect the transfer of various resource categories (e.g. intangible and tangible resources). To explain, logistics service users access tangible resources at a basic level of logistics services, such as utilizing logistics equipment including warehouses and vehicles (Hsiao, 2010). Additionally, they can access intangible resources at more advanced levels of logistics services, which encompass planning, consulting, and management skills and knowledge. An illustrative case of this is the knowledge transfer to service clients in the use of logistics services. Huggins (2010) noted that rather than internalizing and acquiring knowledge through mechanisms such as mergers, companies can leverage the expertise of their alliance partners through knowledge exchange. Lavie (2007) also added firms can leverage their partners' salespeople, marketing investments, and technologies to expand their customer reach, facilitate product introductions, and support their

own research and development. In this way, network resources directly enhance the firm's performance by supplementing its internal resources and expanding its strategic options.

Lavie (2006) also articulated their dissent concerning the ownership of value-creating resources by focal firms and the fundamental assumption inherent in the Resource-Based View (RBV), which posits that resources conferring competitive advantage must be delineated within the firm's boundaries. Wernerfelt (1984) classified resources into specific tangible and intangible assets which are firmly associated to the firm, while Barney (1991) added information, capabilities, knowledge, etc. Similarly, Amit & Schoemaker (1993) delineate resources as "stocks of available factors that are owned or controlled by the firm". In contrast to prior studies, Lavie (2006) asserted that firms derive advantages from the technological resources and reputation of their alliance partners. Lavie (2006) further posited that firm success and performance rely on the complementarity of its partners' resources. Therefore, in his paper, Lavie (2006) introduces the concept of network resources, which are obtained through alliance partnerships between firms. These alliances enable firms to access the resources and benefits held by their partners, thereby strengthening their competitive advantage. Furthermore, a firm has the option to develop resources internally or acquire them externally from the market (Lavie, 2007). However, it is posited that certain network resources are specialized and, due to their scarcity and the presence of isolating mechanisms such as causal ambiguity, are more costly to generate or obtain internally (Barney, 1991; Lavie, 2007). For instance, a firm may strategically target specific resources from partners, rather than pursuing corporate acquisitions and incurring additional costs for redundant resources that do not directly enhance value creation.

1.3.4 Network resources

Lavie (2006) defined network resources as those obtained from alliance partners and transferred through direct interfirm interactions, significantly impacting firm performance. Firms can access valuable network resources through the inter-organizational relationships they maintain. These network resources, which are distinct from internal firm resources, encompass information-rich assets that firms can leverage to inform and implement their strategic initiatives. In other words, network resources are strategically valuable assets within a formal network, generated through the interactions of actors and their organizational resources (Musiolik et al., 2012). The same authors (2012) also added network resources evolve gradually through the continuous interactions of network participants and are generally inaccessible at the beginning. Although their formation can be deliberate, they frequently arise unexpectedly from trust and the network's reputation, indicating that their worth and benefits may not be readily visible. While Musiolik et al. (2012) described the characteristics of network resources as human, structural, and relational resources in their study on building innovation systems, these characteristics remain unclear within the context of logistics outsourcing. Moreover, other resource categories such as physical and technological resources should also be investigated in the context of network resources' characteristics. Figure 4 shows the process of network resource achievement and their potential characteristics in logistics outsourcing.

Lavie (2007) added the utilization of network resources can directly contribute to firm performance by supplementing the firm's internal resources with external resources that may otherwise be unavailable, and by making a broader range of strategic alternatives accessible. The foundational premise asserts that the origin of network resources primarily resides not within the scope of firm level, but rather within the intricate web of interfirm networks (Gulati et al., 2011). This delineation characterizes network resources as assets intrinsic to, mobilized by, or created from the affiliates

of an organization, rendering them obtainable to the organization through its affiliative connections with partners (Gulati et al., 2011).

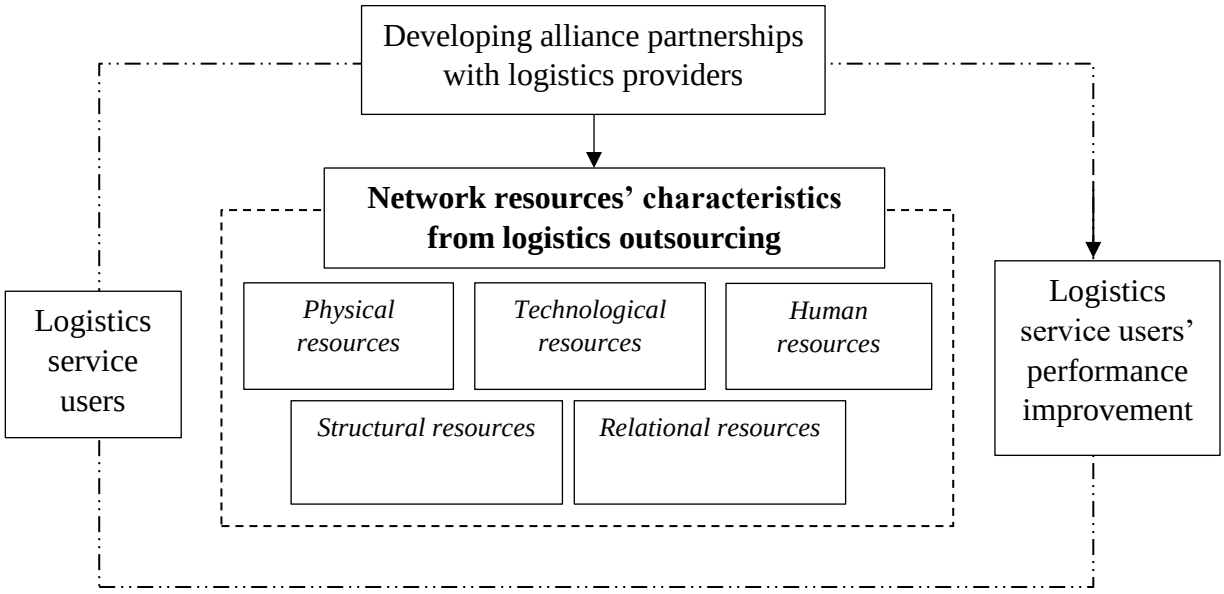

Figure 4: Network resources' achievement in logistics outsourcing

Source: Author's own work

Other authors (Lavie, 2006; Gulati 2007; Gulati et al., 2011) added that within the framework of network resources, a broad spectrum of assets may be encompassed. These assets span the intellectual property, marketing channels, manufacturing facilities, personnel, and an array of supplementary resources affiliated with the partners. The tangible and intangible resources of partner organizations, such as human capital, financial assets, marketing programs, R&D expenditures, and reputational standing, can be leveraged by a firm to enhance its performance through network resource achievement (Lavie, 2007). Another key aspect is that logistics service users can leverage not only the physical assets of logistics service providers, but also their expertise, know-how, and industry standing. For instance, partnering with leading transportation firms such as DHL or UPS can instill confidence in the focal company's customers regarding the

consistency and quality of its transportation services, owing to the reputation of the selected logistics service providers. Crucially, the unique historical experiences and path-dependent patterns of prior collaborations and partner identities constitute crucial components that shape the formation of these valuable network resources (Gulati, 1999). Although Gulati's research (1999) has suggested that prior alliance experience may influence the formation of new partnerships, the relationship between the background characteristics of logistics service providers and the vendor selection decisions of logistics service users remains unclear.

Previous research has demonstrated that exchange relationships are strengthened by mutual trust, the exchange of detailed information, and cooperative problem-solving, which, in turn, enhance an organization's ability to access network resources (Gulati & Sytch, 2007; Gulati et al., 2011). However, the specific mechanisms by which network resources are accessed in the context of logistics outsourcing have yet to be thoroughly investigated.

According to Gulati et al. (2011), network resource's mechanism can be classified into reach, richness, and receptivity (See Figure 5). The concept of reach, as defined by Gulati et al. (2011), reflects the breadth and heterogeneity of an organization's network. This encompasses three key dimensions: distance, difference, and diversity (Gulati et al., 2011). Distance reflects the extent to which an organization's network connections allow it to reach broader areas. When an organization has a network with significant distance, it pursues opportunities by seeking partners outside its immediate network and integrating distant allies. By targeting partners not previously within its network's proximity, the organization extends its reach, thereby enhancing access to resources beyond those available in its local network. Whereas difference refers to the degree to which the organization varies from its partners regarding organizational characteristics (e.g. size, structure, culture, etc.), diversity refers to the variety of novel resources provided by the organization's

network of partners (e.g. technological resources, physical resources, etc.). Hence, the organization rarely has control over the resources its partners possess, but it can, to some extent, choose whom to partner with. Therefore, to understand the company's strategy to access network resources, this study investigates the factors that drive and hinder the selection of logistics providers in the context of logistics outsourcing (RQ2 and RQ3).

The concept of richness refers to the actual value and usefulness of the resources (e.g. quantity and quality of the resources achieved) that the partnership provides. Collectively, the scope of an organization's "network reach" and the resources accessible through its partners (richness) determine the potential value that can be derived from its alliance network. Given the complexity of logistics services (Hsiao et al., 2010), this study aims to explore the value derived by logistics clients from utilizing these services (RQ2 and RQ3).

Receptivity denotes the extent to which an organization can effectively access and leverage network resources (Gulati et al., 2011). The primary determinant of an organization's receptivity to network resources is the quality of its connections with partners. Scholars widely agree that strong ties, formed through frequent and intensive interactions, are essential for cultivating trust, resolving organizational issues, mitigating conflicts, and committing to specific investments that are vital for value creation in networks (Gulati & Sytch, 2007). Furthermore, trust is distinguished into two types: inter-organizational trust and interpersonal trust (Gulati et al., 2011). Trust was defined as an extent to which an organization and their partners can depend on each other to meet obligations, act predictably, and negotiate in good faith (Gulati, 1995a). While interpersonal trust complements interorganizational trust, it remains a distinct concept (Gulati et al., 2011). Interorganizational trust enhances resource exchange, thereby contributing to organizational performance. Huggins (2010) notes that although alliance partnerships can provide competitive

advantages, not all of them are likely to yield such benefits. Therefore, this research will also examine the methods of building business partnerships and trust in an outsourcing context to facilitate access to network resources (RQ2).

Besides, Lavie (2006) also classified the benefits extracted from the alliance partnership into internal rents, inbound spillover rents, outbound spillover rents, and appropriated relational rents (See Table 3 and Figure 6).

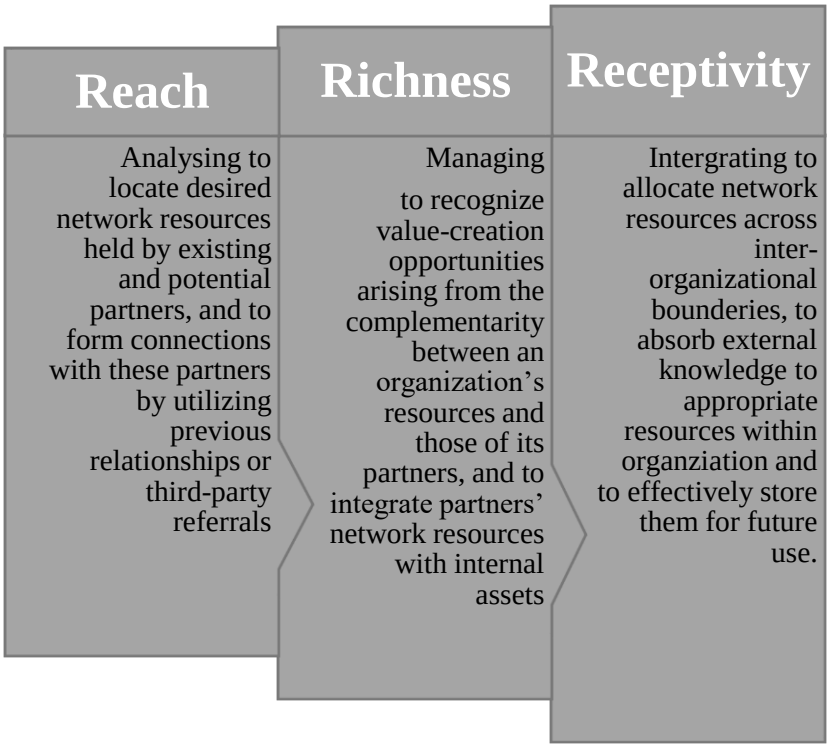

Figure 5: Network resource's mechanism (Adapted from Gulati et al., 2011)

Table 3: 4 types of rent extracted from alliance partnerships. Adopted by Lavie (2006).

Rent type	**Definition**	**Studies about the rent types**
Internal Rent	Internal rent refers to the value generated within a firm due to the scarcity of resources, resulting in limited availability in the short term. It reflects the additional value that a company can gain from their specialized resources to exceed what other	The reputation of prominent alliance partners has a notable impact on the reputation of start-up firms, leading to the increase in stock price. (Lavie, 2006)

	firms can derive from similar resources. Also, in order to maximize the utilization of their resources, companies have the opportunity to tap into and leverage the complementary resources possessed by their alliance partners. By accessing and effectively utilizing these partner resources, firms can enhance their overall capabilities and extract greater value from their resource base. This strategic leveraging of complementary resources through alliances enables companies to expand their competitive advantage and foster mutually beneficial relationships.	The integration between non-shared resources (e.g.focal firm's technology) and non-shared resources (partner's advanced technology) (Wang & Li-Ying, 2015).
Inbound Spillover Rent	The gains of private benefits by accessing unintendedly the shared and non-shared resources of partners from focal firms. The formation of alliances enables firms to gain access to shared resources from their partners. However, it becomes challenging to prevent the leakage of knowledge associated with these resources. The nature of alliances involves the exchange and utilization of valuable knowledge and expertise, making it inherently difficult to completely safeguard against the unintended dissemination of such knowledge. This knowledge leakage may occur through various channels, including informal communication, employee mobility, or unintentional information sharing.	Although the definition of inbound spillover rent has been discussed, research on this topic remains focused on preventing resource leakage during the partnership formation process. Partners protect their exclusive resources through isolating mechanisms like specific assets, trademarks, and various legal protection (Lavie, 2006).
Outbound spillover rent	In contrast to the inbound spillover rent, the focal firm's resources are also accessible through unintended leakage, which can ultimately advantage alliance partners, including logistics providers.	One example is the benefits captured by downstream alliance partners (from upstream partners such as manufacturers) who exploit the commercial benefits linked to ethical trading. This is evidenced by multinational retailers offering a select range of fair-trade products while promoting their ethical credentials (Valkila et al., 2010).

Appropriated Relational Rent	The mutual benefits gained from partners in an alliance partnership through exchanging knowledge, collaboration, and co-develop idiosyncratic resources. Relational rents arise from the utilization of specific assets, knowledge-sharing, etc. However, it is crucial to note that these rents are mutually and intentionally committed to and cooperatively possessed by both participating parties. In essence, the extraction of relational rents heavily relies on the intentional commitment and shared ownership of resources by the entities engaged in the relationship.	The benefits of cross-licensing technology (Wang & Li-Ying, 2015).

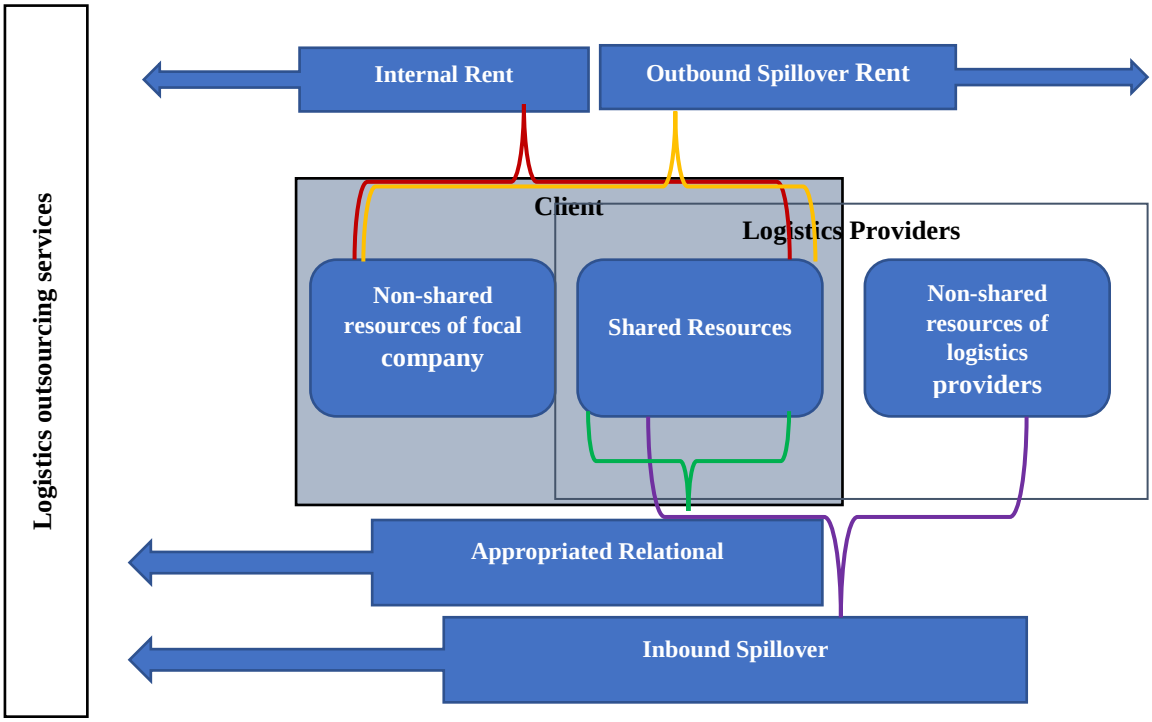

Figure 6: Various types of rents that can be extracted in a partnership, including internal rent, inbound spillover rent, outbound spillover rent, and appropriated relational rent (Conducted from Lavie, 2006; Moxham and Kauppi, 2014)

1.3.4.1 Previous literature review of logistics resources that can be achieved from network resources

Lavie (2006) posited that network resources encompass a broad range of resource categories accessible through alliances, which significantly influence firm performance. Building on this, Gulati et al. (2011) expanded the conceptualization by highlighting that the characteristics of network resources can vary in terms of reach, richness, and receptivity. In light of the limited research on the application of network resources within logistics outsourcing, this section aims to synthesize and delineate the potential logistics resources that can be derived from such network alliances.

In their studies about different types of resources, Wong & Karia (2010) introduce 5 different types of resources including physical, information, and knowledge, human, and relational resources. Furthermore, Mentzer et al. (2004) first classify resources into intangible and tangible resources. The author (2004) and Karia et al. (2013) defined tangible resources as logistics equipment, plants, and facilities that deliver visible value-added services to clients; whereas, intangible resources are defined as logistics experience, logistics skills, and client-provider relationships which can indirectly save more costs or provide differentiate logistics services. On the other hand, Alkhatib et al., (2015) have a different way to define tangible and intangible resources. While the former is defined as physical and technological resources, the latter is defined as labor resources, structural resources and relational resources (see Table 4). Moreover, these five abovementioned resource types are also used in some previous studies (See Table 4). The result has shown that there are more papers that use tangible resources in terms of physical, human resources, and technological resources; while intangible resources are less empirically investigated and discussed in logistics papers.

1.3.4.1.1 Physical resources

Physical resources are defined as physical assets related to operating logistics services such as logistics systems and infrastructure. These assets are described as tangible logistics facilities and vehicles used for warehousing, inventory, and transportation activities (Stefansson, 2006). Thus, physical resources are seen as one of the most important resources that could enhance companies' logistics performances such as delivery lead-time (Wong & Karia, 2010). Stefansson (2006) states that utilizing physical resources from logistics providers can save logistics costs for companies. In fact, logistics infrastructure such as warehouses, vessels, and trucks are frequently outsourced due to high capital investment (Wong & Karia, 2010).

1.3.4.1.2 Technological resources

Technological resources are described as advanced technological systems such as equipment that provide information to users. Alshawi (2001) introduces the use of advanced technology in communication systems to improve logistics performance. Moreover, Lai (2004) states that higher-technology based systems such as Electronic Data Exchange systems (EDI), tracking and tracing systems; and Internet services. Other examples of this are the use of data acquisition system like RFID or transportation technologies like GPS and GIS (Karia, 2018). On the other hand, other scholars defined technological resources as automated equipment in material handling and storing. It can be seen that technology resources become more and more important as most recent papers stating the important role of information flow in logistics (Rahman & Wu, 2011; Min, 2013; Beikkhakhian et al., 2015). In summary, although most papers have pointed out the benefits of advanced information technology on logistics performance, not many papers empirically study the use of advanced logistics equipment and technological infrastructure to connect them with the capabilities and business performance.

1.3.4.1.3 Human resources

Human resources are defined as elements related to the labor force such as skills and experience. On one hand, some authors (Liou & Chuang, 2010; Karia & Wong 2013; Ryoo & Kim, 2015) state logistics skills of employees can improve companies' logistics performances. Chen et al. (2010) emphasize the important role of human capital resources in 3PL relationship management. On the other hand, other scholars emphasize the experience of logisticians (Murphy & Poist, 2000; Narkhede et al., 2017). Moreover, human resource is also used in previous studies to highlight the importance of this category in logistics (Govindan et al., 2016; Kannan et al., 2017).

1.3.4.1.4 Structural resources

Structural resources are described as intangible resources like logistics providers' information. While some scholars mention structural resources as companies' cultures, experience in the industry and their customer satisfaction level (Liu & Wang, 2009; Karia & Wong, 2013); others use a firm's reputation and prestige to describe this type of resource (Jharkharia & Shankar, 2007; Rajesh et al., 2011; Gürcan et al., 2016). Although the meaning of these resources are explained in different ways, some papers about logistics provider selection have used vendors' information as one criterion. For example, Narkhede et al. (2017) uses vendor reputation; while Prakash & Barua (2016) uses vendors' image and experience.

1.3.4.1.5 Relational resources

Relational resources are described as partnerships in collaboration and communication between parties. In logistics, logistics providers utilize relational resources to collaborate with their partners to improve the logistics services provided to their own customers (Wong & Karia, 2010). Karia et al. (2015) also add that relational resources could create long-term relationships from trust and commitment between enterprises and their partners. Shou et al. (2017) explain that partnerships can improve companies' communication with clients and partners; hence, improving the logistics

activities' performances. The authors also add that relational resources can help companies to gain competitive advantages because it is impossible to imitate. Other scholars have mentioned relational resources in their papers in terms of collaborating to have mutual and long-term relationships (Umadevi et al., 2012; Gürcan et al., 2016); and sharing information and collaborating with other supply chain members and logistics partners (Qureshi et al., 2008; Karia & Wong 2013; Kayikci & Stix, 2014).

Table 4:Literature Review of resource used in logistics outsourcing

	Resource Category	Description	Literature
Tangible	Physical resources	Warehouse location, vehicle status and capacity	(Rajesh et al., 2011; Falsini et al., 2012; Karia & Wong 2013)
		Transportation capacity, transport mode, size, age and availability status.	(Selviaridis et al., 2007; Rajesh et al., 2011)
		Packaging and labeling equipment for production.	(Selviaridis et al., 2007; Falsini et al., 2012)
	Technological resources	RFID, GPS, real-time collaboration, EDI linkage, technical platform, database and web-based information system.	(Lai et al., 2008; Huang et al., 2006; Marasco 2008; Rajesh et al., 2011; Karia & Wong 2013; Vlachos, 2014)
Intangible	Human resources	Staffs' logistics skills	(Liou & Chuang, 2010; Karia & Wong 2013; Ryoo & Kim, 2015).
		Staff's experience in logistics industry	(Thakkar, et al., 2005; Narkhede et al., 2017)
		Human resource management	(Neto et al., 2017)
	Structural resources	Companies' cultures, firms' experience	(Liu & Wang, 2009; Mehri et al., 2013;

		and customers' satisfaction level	Karia & Wong, 2013)
		Firm's reputation and prestige	(Jharkharia & Shankar, 2007; Rajesh et al., 2011; Gürcan et al., 2016)
	Relational resources	Sharing information and experience to collaborate with other supply chain partners.	(Qureshi et al., 2008; Karia & Wong 2013; Kayikci & Stix, 2014).
		Mutual and long-term relationship	(Qureshi et al., 2007; Chen & Wu, 2011; Hsu et al., 2013; Yayla et al., 2015; Gürcan et al., 2016)
		Collaboration and cooperation with other logistics members	(Karia & Wong 2013; Kayikci & Stix, 2014).
		Trust and commitment	(Knemeyer & Murphy, 2004; Karia et al., 2015)

1.3.5 Drivers for outsourcing logistics activities

The decision to outsource is typically influenced by the cost trade-off between in-house investment and the total outsourcing fee, as companies aim to reduce costs. However, there are various factors that need to be considered when making outsourcing decisions (Aguezzoul, 2014; Zhu et al., 2017). According to Marchet et al. (2017), firms often opt for outsourcing logistics services from providers as a means to avoid making significant investments in assets for their logistical activities. This strategic decision allows them to achieve cost efficiency within their supply chain. Furthermore, with the introduction of updated technologies and methodologies, the resources and expertise offered by vendors may potentially diminish the need for additional investments by the firm. This, in turn, facilitates quicker adjustments and adaptation processes (Hung Lau & Zhang; 2006). Furthermore, the enhancement of service quality is identified as a driving factor to outsource their logistics services (Zhu et al., 2017; Marchet et al., 2017). Erturgut et al., (2015)

identify various objectives associated with outsourcing, including downsizing, cost reduction, and technological advancement. According to Zarbakhashnia et al. (2023), the utilization of logistics outsourcing services can effectively support organizations in attaining their goals related to carbon emissions resulting from transportation operations. Rajesh et al. (2013) have expressed the view that outsourcing serves as a successful strategy for enabling organizations to prioritize their primary business functions over non-core tasks. Furthermore, prior research has addressed the various objectives of logistics outsourcing, including risk reduction (Marchet et al., 2017), accessing external resources (Marasco, 2008), and establishing strategic partnerships with logistics providers for global market expansion (Yeung et al., 2006). Therefore, given the imperative for enhancing service quality, the significance of outsourcing firms in organizations has increased. These firms serve as intermediaries, facilitating the provision of logistics services to both sellers and buyers in the market.

These outsourcing drivers (OD) can broadly be summarized in Table 5.

Table 5: Previous literature about outsourcing drivers

	Drivers	**Source**
D1	Focus on our core competencies	Rajesh et al. (2013); Marchet et al. (2017)
D2	Save logistics costs	Rajesh et al. (2013); Erturgut et al. (2015)
D3	Time management	Rajesh et al. (2013); Zhu et al. (2017)
D4	Reduce heavy asset investment	Lau & Zhang (2006); Jiang et al., (2007)
D5	Improve the logistics service's flexibility and agility	Lau & Zhang (2006); Rajesh et al. (2013)

D6	Logistics knowledge, experience and equipment of logistics providers	Chu & Wang (2012); Zailani et al. (2017)
D7	Expand my network through the logistics provider's network	Yeung et al., 2006; Ngonela et al., 2014.
D8	Reduce the logistics risk in the operation	Konig & Spinler. (2016); Marchet et al., 2017
D9	Improve my logistics performance	Chu et al. (2012); Zhu et al., 2017;
D10	Achieve specific knowledge and experience in a specific industry.	Marasco, 2008; Wan et al., 2019

1.3.6 Supply chain performances indicators

Previous authors (Chopra & Sodhi, 2012; Azevedo et al., 2013; Yusuf et al., 2014; Anand & Grover, 2015; Quang et al., 2016; Fernandes et al., 2017) emphasized that supply chain management involves monitoring and identifying methods to enhance supply chain performance indicators, as detailed below:

1. Vendor Performance: reliability, response time.
2. Innovation capability: the number of new products developed each year, the flexibility of the workforce.
3. Business Operation: production waste, inventory management costs, workforce productivity.
4. Customer Service Quality: delivery time, percentage of "perfect orders" delivered, product value perceived by customers, product/service quality, response time to inquiry about customer problems.

5. Economic Performance: market share growth, return on investment (ROI).

The objective of this study is to examine the effects of network resources on supply chain performance. From state-of-the-art review papers, SC performance has been identified as shown in Table 6.

Table 6: Supply chain performance indicators

SUPPLY CHAIN PERFORMANCE INDICATORS	Vendor Performance	Innovation capability	Business Operation	Customer Service quality	Economic Performance
	Response time	Quantity of new products launched per year	Workforce Productivity	Delivery timeliness	Market share growth
	Reliability	Workforce flexibility	Production waste	Response time to customer queries	Return on Investments (ROI)
			Inventory management cost	Perfect orders delivered ratio	Total Cost Reduction
				Product/Service quality	
				Product value perceived by the customer	
	Chopra & Sodhi, 2012; Quang et al., 2016; Fernandes et al., 2017; Yusuf et al., 2014; Anand & Grover, 2015; Azevedo et al., 2013); Shi & Yu., 2013				

1.3.7 Logistics outsourcing selection and evaluation

The evaluation and selection of logistics service providers (LSPs) is a core process within logistics management, which itself is a fundamental component of an effectively operated supply chain management (SCM) discipline. The evaluation and reconsideration of strategies for identifying and selecting Logistics Service Providers has gained significant prominence since the outbreak of COVID-19 pandemic. Therefore, the process of managing the relationship between the client and the 3PL provider must be carefully evaluated to ensure long-term strategic benefits.

The LSP selection is a multi-faceted challenge, involving a complex decision-making process. This is because numerous tangible and intangible factors must be taken into account. Some of these criteria are tailored to specific customer requirements, while others are universally applicable across various circumstances. Fawcett & Smith (1995) studied 131 firms in North America to evaluate the performance of third-party logistics (3PL) providers and identified the different criteria including quality, delivery and cost. Benyoucef et al. (2003) provided a review of the key considerations in supplier selection, including the criteria and approaches for addressing selection challenges. The authors (2003) recommended evaluating and selecting suppliers based on three primary dimensions: operational performance, product quality, and the supplier's organizational structure and manufacturing capabilities, each encompassing a variety of assessment sub-factors. Alkhatib et al. (2015) reviewed 56 articles on the evaluation and selection methods and criteria for logistics service providers (LSPs) published between 2008 and 2013, identifying 12 significant criteria used in the selection process. Despite the rapid shift in selection criteria for logistics providers towards sustainability in the post-COVID-19 era (Roy et al., 2020; Mishra et al., 2022; Gupta et al., 2022), the role of forming alliances with LSP networks to access external resources from the perspective of logistics service users remains underexplored. Table 7 shows the literature of the selection and evaluation criteria that will be studied in this research.

Table 7: Selection and evaluation criteria used in previous literature

	Selection and evaluation criteria	**Cited by**
SC1	Logistics Service Quality	Weber et al., 1991; Bottani & Rizzi, 2006, Jharkharia & Shankar, 2007, Liu & Wang, 2009, Abraham et al., 2011;
SC2	On-time delivery performance	
SC3	Flexibility in logistics operation	
SC4	Cost of service	
SC5	Customer Service quality	
SC6	Logistics information system	
SC7	LSP’s Financial strength	

SC8	LSP's Reputation	Chen et al., 2011; Wu et al., 2013; Aguezzoul 2014; Alkhatib et al., 2015; Ding et al., 2015; Wang et al., 2021.
SC9	Geographic location (e.g. warehouse, hub, etc.)	
SC10	Technological capability	
SC11	Performance History	
SC12	Logistics provider's Environmental Policies	
SC13	Logistics provider's Human resource policies	

1.3.8 Supplier relationship and contract management

Strategic alliances represent a crucial type of interorganizational collaboration extensively discussed in the literature (Gebrekidan & Awuah, 2002). Through these alliances, partnering organizations can combine their resources and expertise to accomplish their individual objectives, mitigate risks, acquire knowledge, and enter new markets (Büyüközkan et al., 2008). Despite being widely adopted across various business sectors, a substantial proportion of strategic alliances do not succeed (Lee & Cavusgil, 2006). Consequently, choosing the right partner for a strategic alliance is a critical factor influencing supply chain performance within the logistics value chain. Although outsourcing drivers and selection criteria are key aspects of logistics outsourcing, there has been limited research focusing specifically on how alliance partnerships in logistics outsourcing can enhance supply chain performance.

The successful and efficient management of supply chain flows depends on communication, collaboration, cooperation, and coordination among all participating entities, which define the nature of relationships with upstream and downstream partners (Kanda & Deshmukh, 2008). Shakeel et al. (2018) posited that alliance relationship management aims to create sustainable value for both suppliers and buyers. This requires transforming supplier relationships into partnerships that promote transparency and sustainability in managing the performance of strategic suppliers. Additionally, effective contract management involves developing stronger relationships through

well-documented and mutually agreed-upon contracts with strategic suppliers (Shakeel et al., 2018).

Contractual terms for logistics providers outline the legal responsibilities, including duties and rights, of both parties involved in logistics outsourcing: the logistics provider and its clients (Min, 2013). The same author (2013) stated that without these terms, there is minimal recourse available in the event of underperformance by the logistics provider. To prevent potential contract disputes and failures in outsourcing, clients must identify the critical provisions necessary for these contracts. These key provisions were determined based on how frequently they appeared in the contract clauses reported by the respondents. Previously, Hofenk et al. (2011) explored how relational and contractual elements affect the effectiveness of logistics outsourcing relationships. Huo et al. (2016) studied the inter-relationship between 3PL contracts, relational norms, and 3PL providers' opportunistic behavior. Although published research highlights the crucial role of contract management in SRM and its benefits for achieving superior performance, the practices that foster such relationships through the mediation effect of network resources still require further clarification.

As an increasing number of companies globally outsource their logistics function to 3PL providers, supplier relationship management (SRM) and contract management has become essential for reducing supply chain costs and gaining competitive advantages (Lai et al., 2013). The same authors (2013) noted that evaluating suppliers involves assessing their value by examining their capabilities and performance. The results of this evaluation are used to build commitment and determine whether to pursue a short-term or long-term partnership.

Park et al. (2010) indicated that the decision on contract type is primarily influenced by the future direction of the focal firms. Specifically, short-term contracts are typically employed in cost-price

strategies, competitive bidding processes, extensive supplier networks, and buyer-dominant partnerships. In contrast, long-term contracts are associated with sustainable strategies, selected supplier networks, and strategically-oriented partnerships. Moeller et al. (2006) noted that enterprises frequently risk wasting resources by pursuing short-term benefits from logistics providers rather than creating value through long-term collaborations. Jiang et al. (2011) stated that short-term contracts often signify buyer dominance and a lack of trust in logistics services. In contrast, trust is a crucial precursor to a long-term orientation as it shifts the focus towards future conditions. Additionally, both buyers and suppliers can gain a competitive advantage from long-term relationships with their partners.

1.4 Research Objectives and Research Questions

This study endeavors to aid businesses in effectively managing their relationships with logistics outsourcing partners. As such, the primary focus of this thesis centers on the acquisition of "network resources" from LSP within the logistics outsourcing framework. Specifically, the research explores matters concerning the utilization of logistics outsourcing for attaining network resources and enhancing the competitive edge of organizations across the supply chain. These aims can be succinctly outlined as follows:

1. To investigate a structured literature in the field of logistics outsourcing.
2. To determine the determinants of network resources and methods to achieve network resources in a logistics outsourcing context
3. To identify competitive advantages gained from achieving network resources.
4. To evaluate the impact of network resources on supply chain performance

The first objective aims to uncover the fundamental theories, highlighting emerging trends and gaps in the literature of logistics outsourcing context. These objectives contribute theoretically to

the previous literature regarding logistics outsourcing by suggesting new research directions for authors.

The second objective seeks to discern the strategies employed by logistics-service users (LSUs) to obtain network resources (NR) through their collaboration with logistics service providers (LSPs). Drawing from the extended resource-based view theory (ERBV) as elucidated by Lavie (2006), it is imperative to investigate these gaps, as each enterprise will adopt diverse methods to achieve the resources of LSPs to enhance their business performance. Furthermore, this objective also contributes current insights into the motivations behind LSUs' intentional pursuit and the barriers hindering LSUs from tapping into network resources in their partnerships with LSPs.

The third objective aims to investigate the competitive advantages derived from the acquisition of network resources. This objective seeks to enhance understanding of the characteristics of network resources within the logistics outsourcing context and elucidate how they confer competitive advantages upon organizations.

The fourth objective of this research paper is to quantitatively measure the impact of network resources on supply chain performance. This will involve analyzing data to determine the extent to which network resources contribute to enhancing supply chain performance.

To attain the above research objective, the following research questions are used:

RQ1: What potential research directions should future researchers explore in the context of logistics outsourcing?

RQ2: What are the outcomes of achieving network resources acquired by LSUs?

RQ3: How do network resources influence the supply chain performance of the LSUs?

1.5 Research scope

This section justifies the geographical research scope of this thesis and the three papers in Chapters 2,3 and 4. The majority of data contributors for this thesis were based in Vietnam. There are several reasons why the researcher chose Vietnam to strategically collect data for his empirical studies. First, in the last 35 years since 1986, Vietnam has participated in several free trade agreements with various nations and regions, establishing a trade-to-GDP ratio that surpasses 160%. Vietnam's exports have regularly increased by over 15% annually for several years (MOIT, 2020). In 2018, Vietnam's export value approached 245 billion US dollars, reflecting a 13.2% rise after 1 year and achieving government's targeted objectives. The robust export performance has favorably impacted the balance of payments and aided in stabilizing essential macroeconomic indices. In 2019, Vietnam's overall export turnover amounted to around US$242 billion, reflecting an almost 8% rise from 2018, despite considerable hurdles (Pham, 2020). Second, according to the Ministry of Industry and Trade (MOIT, 2020), Vietnam holds the 64th position in global logistics development and ranks fourth among the member countries of the Association of Southeast Asian Nations (ASEAN). Statistics from The World Bank (2023) showed that the LPI score of Vietnam gradually increased from 2.98 in 2016 to 3.3 in 2023 (See Figure 7).

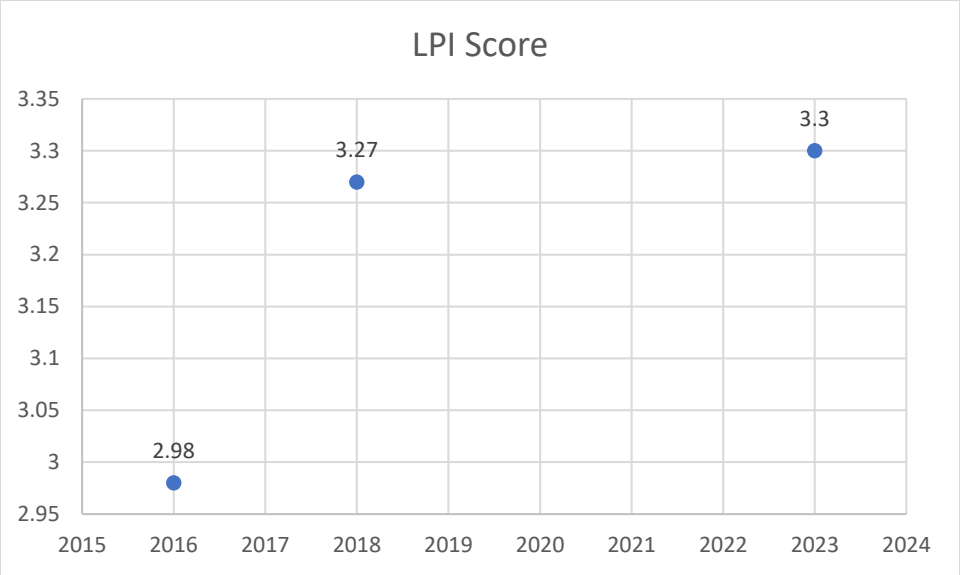

Figure 7: Vietnam LPI score from 2016 to 2023 (Source: The World Bank, 2023)

Furthermore, the logistics business in Vietnam has experienced rapid growth and advancement. The growth and advancement of economic variables, such as the manufacturing and e-commerce sectors, contribute to the progress and expansion of the logistics industry. The industry of e-commerce is presently undergoing an unparalleled upsurge driven by novel business models, a trajectory that is expected to persist and gain velocity in the future decades. As an increasing number of businesses adopt E-commerce, it becomes clear that the logistics infrastructure is experiencing a significant transformation influenced by the current circumstances (Nguyen et al., 2021). According to Joong-Kun Cho et al. (2008), with the development of e-commerce, the implementation of an innovative logistical plan becomes important. The prevalence of small order scales, elevated daily order frequencies, consignments of small parcels, and expedited same-day delivery has increased significantly. The difficult nature of this attempt is shown by the effort required to ensure the timely delivery of logistics services. Given that the research focuses on the alliance partnerships between logistics service users (LSUs) and logistics service providers (LSPs), data collection through interviews and surveys was

conducted among participants with substantial experience in logistics outsourcing projects. These individuals are well-versed in the relevant business practices within the industry in Vietnam, ensuring the reliability and relevance of the insights gathered.

1.6 Research Methodology

This chapter details the research methodology used in this study. It provides a rationale for the methods chosen to meet the research objectives and answer the research questions. In particular, this chapter discusses the development of the research methodology by focusing on the justification of the research assumptions, the underlying research philosophy, the research approach, and the research design.

1.6.1 Research Assumptions

Saunders et al. (2019) classify philosophical assumptions into ontology, epistemology, and axiology. While epistemology is related to the investigation into the nature, knowledge scope and how it is acquired, validated, and justified, axiology focuses on the study of values (e.g. ethical principles, beliefs, and preferences) that investigate inquiries related to value characteristics, value definition, etc. In contrast to two abovementioned philosophical assumptions, ontology is defined as the exploration into the nature of reality, investigating what truly exists. Mclaren & Durepos (2019) claimed that while epistemology focuses on the process of constructing a theory to enhance understanding of this social reality through specialized knowledge, ontology applies to someone's perceptions and understandings of the world and its social existence. By applying an ontological lens, the study seeks to uncover and interpret the fundamental structures and mechanisms by which network resources are accessed, developed, and utilized, as perceived by the logistics service users. It allows for an exploration of how companies conceptualize the existence and role of network resources in their supply chain strategies and the benefits these resources provide through alliance

partnerships. Furthermore, an ontological approach facilitates a deeper understanding of the experiences and perceptions of logistics service users and providers, shedding light on the tacit, intangible aspects of partnerships that are often overlooked in purely epistemological investigations.

Besides, ontology can be seen as more relevant for RBV-based theory for numerous reasons. To explain, the uniqueness and rarity in competitive advantages achievement was concluded in RBV perspective, the "value of resources" will be evaluated different in different context (Barney, 1991; Barney & Hesterly, 2006). The concept of "resourcing" emphasizes the dynamic process by which resources are created through their application in specific actions. This approach moves away from the static question of "what constitutes a resource?" and aligns with a process-based ontology, where an element is only defined as a resource through its functional use within a particular context (Feldman & Orlikowski, 2011). Thus, resources are not inherently fixed entities but are instead fluid and context-dependent, taking on their role as resources temporarily during their involvement in strategic activities (Feldman, 2004; Feldman & Orlikowski, 2011). Therefore, from the perspective of the Extended Resource-Based View (ERBV), the competitive advantages derived from partnerships vary depending on the unique strengths of each partner, such as individual logistics providers. Viewed through an ontological lens, this allows researchers to investigate the underlying realities and relationships between enterprises as they form alliances with specific organizations. This approach emphasizes the contextual and relational dynamics that shape how competitive advantages are developed and leveraged within partnerships.

Furthermore, ontology, rather than epistemology, serves as the foundation for both the qualitative and quantitative papers in this research because the focus is on understanding the existence and role of network resources as perceived and experienced by companies, rather than solely

constructing or testing theoretical frameworks. Ontology allows the research to explore how network resources, as a social and relational construct, exist within the broader context of logistics outsourcing and supply chain performance. In the qualitative paper, ontology is applied through in-depth interviews and thematic analysis to investigate how companies perceive and achieve network resources and how these resources influence supply chain performance. By centering on participants' perceptions, the study captures the contextual realities of network resource formation, including the strategies employed to acquire these resources and the benefits extracted from the alliance partnerships. Unlike epistemology, which would focus on theorizing from these data, ontology prioritizes the exploration of what exists within the relational environment of supply chain partnerships. In the quantitative study, which investigates "how network resources mediate the impact on supply chain performance," ontology provides a framework for understanding the real-world existence and relationships of the constructs being analyzed. Surveys, grounded in an ontological perspective, capture the perceptions of Logistics Service Users (LSUs) and Logistics Service Providers (LSPs) regarding the presence and mediating role of network resources within their supply chains. These surveys focus on how participants conceptualize network resources, such as shared knowledge, technology, and relationships, as essential elements that bridge the gap between their collaborative efforts and performance improvements.

In line with this ontological perspective, this research seeks to answer critical questions, including "How do Logistics Service Users (LSUs) acquire network resources?" and "What impact do network resources have on enhancing supply chain performance?". To explain more, the researcher aims to understand the influences of network resources on the company’s supply chain performance through the lenses of logistics outsourcing (RQ3). Besides, with ontology, the

researcher can gain the understanding regarding the characteristics of network resources and its outcome on supply chain performance (RQ2).

1.6.2 Research philosophies

A research approach necessitates the formation of a philosophical stance regarding the nature of the world and how knowledge is constructed. 'Research philosophy' refers to a set of beliefs and assumptions that shape our understanding of knowledge development (Saunders et al., 2019). These underlying beliefs define the boundaries of knowledge, the nature of empirical phenomena, and their interrelationships. This is particularly relevant in social sciences, where the legitimacy of applying natural science methods is often contested. A well-articulated research philosophy is crucial for establishing a credible methodological framework, informing the choice of research strategies, and guiding data collection and analysis methods. The selected philosophy directly influences the researcher's approach to examining the relationships between the study's variables.

While post-modernism primarily directs attention to the role of language and power dynamics, pragmatism prioritizes the discovery of practical resolutions to address the given phenomenon. Interpretivism focuses on a subjectivist view, in which reality is created by personal interpretations (Saunders et al., 2019). Positivism is defined as a philosophical stance that focuses on observable and measurable social reality, which is relevant to answer the research questions of the thesis. Positivism is appropriate in this context as it emphasizes the objective and systematic analysis of documented data, facilitating both replicability and generalizability. This philosophical stance supports the derivation of clear, evidence-based directions for future research by identifying patterns and trends within existing literature. In contrast, interpretivism, with its focus on subjective interpretation and individual perspectives, is not relevant for the objective synthesis required in this study.

Positivism is well-suited to mixed methodology as it offers a coherent philosophical foundation that emphasizes objectivity, replicability, and the systematic integration of qualitative and quantitative data. Its focus on measurable outcomes and structured analysis facilitates the comprehensive investigation of complex research questions within a mixed-methods framework. Furthermore, within a positivist paradigm, the qualitative component contributes contextual insights, while the quantitative component ensures the generalizability of findings, allowing for a balanced and rigorous approach to research. In the context of RQ2 and RQ3, positivism is well-suited as a methodological approach. RQ2 investigates the outcomes of acquiring network resources by logistics service users (LSUs), which requires both identifying observable outcomes and uncovering the underlying mechanisms that produce these results. RQ3, which examines how network resources influence supply chain performance, aligns with positivism's goal of exploring both the visible effects and the hidden structures shaping those effects, such as direct and indirect effects of network resources. By using both qualitative and quantitative methods, positivism allows the research to delve into the complexities of how network resources operate and their influence on supply chain performance, addressing both the observable and hidden aspects of the phenomenon. As a result, despite the evident merits and topical relevance of interpretivism, positivism has been selected.

1.6.3 Approach to theory development

Saunders et al. (2019) listed three different approaches to theory development including deductive, inductive, and abductive approach.

In deductive research, the theory's development will be tested with a hypothesis about the phenomenon to explore the causal relationship between variables and concepts. The same authors also highlight one of the main characteristics of the deduction is the generalization of data findings.

Moreover, Saunders et al (2019) stated the use of the deductive approach is mostly for theory verification or confirmation, which is not the goal of this thesis. Meanwhile, inductive research is defined as the approach that supports researchers to start from data for theory building or generation. On the other hand, with the purpose of explaining identifying themes and then integrating the findings with the conceptual framework, abductive research will regularly move from theory to data findings and vice versa. Additionally, the abductive approach involves a "back and forth" movement between theory and data, akin to deduction or induction, aimed at fostering a holistic comprehension of the phenomenon under investigation (Suddaby, 2006).

Although an inductive approach appears pertinent for examining the attributes of network resources in this study, it is imperative to statistically assess the effects and ramifications of these resources on the competitive performance of logistics service users. Meanwhile, unlike deduction, which is restricted by existing theories, abductive approach creates flexibility for researchers to adjust their approach based on emerging data from both quantitative and qualitative sources, fostering a more dynamic and adaptable research process. Hence, such a statistical empirical investigation should be added for offering strategic insights that can be practically applied by industry managers.

The abductive approach is particularly relevant to RQ2 and RQ3. RQ2 aims to identify the outcomes of acquiring network resources by LSUs, necessitating an understanding of the nuanced and potentially unexpected results (e.g. competitive advantages) that can arise from these resources. Meanwhile, RQ3 seeks to investigate how network resources influence supply chain performance, which requires an examination of various factors and their interactions. By employing an abductive approach, the research can dynamically integrate findings from both qualitative and quantitative analyses, ultimately generating strategic insights that are directly

applicable to industry managers. This methodological flexibility enables a more comprehensive exploration of the relationship between network resources and LSUs' performance outcomes.

1.6.4 Research design

Saunders et al. (2019) point out that there are three different research designs that are used to explore the phenomenon, such as:

1. Quantitative research
2. Qualitative research
3. Mixed methodology

Quantitative research is defined as a method that statistically collects and analyze the phenomenon, while qualitative research focuses more on expression, texts and words in the collecting and analysing process (Saunders et al., 2019). The same authors emphasize that whereas quantitative research concentrates more on using data to test the theory, qualitative research focuses more on the insights of the phenomenon. Moreover, qualitative research is seen as a useful strategy to explore someone's experience, expertise and interpretation about the research questions, which is generally associated with inductive approach and interpretivism philosophy (Saunders et al., 2019). Whereas, due to its unique highly structured characteristics in data collection and data analysis technique, quantitative research is associated with deductive approach and positivism philosophy.

In a mixed methods research design, researchers strategically employ both qualitative and quantitative data collection and analysis techniques within a single study (Creswell, 1999). This methodological triangulation fosters a comprehensive understanding of complex phenomena. Qualitative data allows for in-depth exploration of the phenomenon, capturing rich contextual

details and participant perspectives. Conversely, quantitative data enables researchers to quantify the phenomenon, providing numerical representations suitable for statistical analysis and visualization through charts and graphs. This combined approach strengthens the research by offering a multifaceted perspective, enriching the understanding of the phenomenon under investigation (Creswell, 1999).

Mixed methods research combines qualitative and quantitative approaches to provide a more comprehensive and nuanced understanding, as well as to strengthen the validation of findings (Creswell & Creswell, 2017). The two research methods offer distinct perspectives, each with inherent limitations. Qualitative research, which focuses on in-depth study of a small number of individuals, sacrifices the ability to generalize results to a broader population. In contrast, quantitative research, which examines a large number of individuals, often compromises the depth of understanding of any single individual (Creswell & Creswell, 2017). Peterson et al. (2013) outlined the three phases of their five-year research and emphasized the importance of a multiphase translational research approach. They highlighted that integrating qualitative and quantitative methods and findings into the study design allows researchers to gain deeper insights into participants' perspectives, explore complex social phenomena, and effectively tailor intervention approaches. Hence, in order to avoid inadequate data sources and the limited angle in investigating a problem, the researcher decided to study the application of network resources in the context of logistics outsourcing using both qualitative data (e.g. interviews) and quantitative data (e.g. surveys) (See Figure 8).

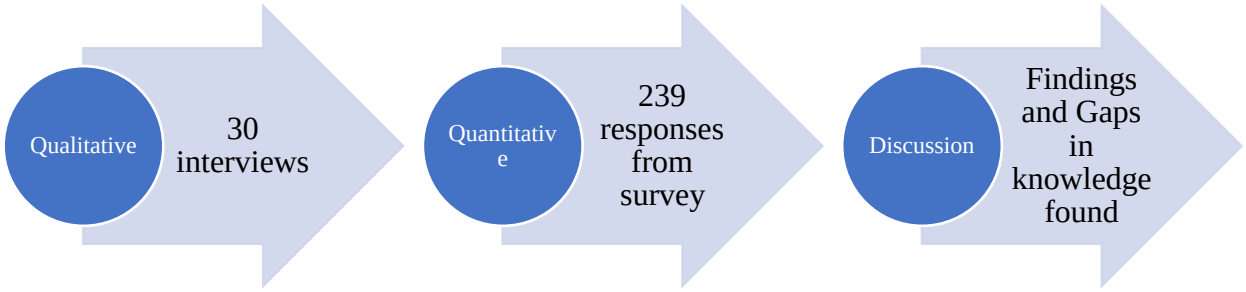

Figure 8: 3-stage process of mixed methodology conducted by Peterson et al. (2013) and applied for the thesis.

In this thesis, a qualitative research approach will first be employed to explore the complexity of drivers, barriers, methods, and outcomes related to the achievement of network resources, as addressed in RQ2. Following this, quantitative research will be conducted to examine the mediating role of network resources on supply chain performance, as investigated in RQ3. After that, quantitative research will be used to measure the mediating factor of network resources in logistics outsourcing in RQ3. While qualitative interviews provide rich, detailed insights into the drivers, barriers, and outcomes surrounding network resources in logistics outsourcing, their findings are often context-specific and lack generalizability due to small sample sizes. A quantitative approach, such as a survey-based study, would allow the researcher to test the relationships identified in the qualitative phase across a larger sample. This helps to validate the qualitative findings and ensures that the insights derived are not restricted to the small group of interviewees (e.g. 30 interviews), making the results more representative of a broader population. Additionally, qualitative data is rich in depth but does not allow for the precise measurement of

relationships between variables. For example, while interviews might explain that network resources can improve supply chain performance, they might fail shortly to quantify this effect or test the statistical significance of these connections. Through techniques such as structural equation modeling (SEM), the mediating influence of network resources on the supply chain performance can be rigorously tested, providing empirical evidence for or against the hypothesized relationships. Hence, under the positivism perspective, mixed methods research employs multiple data sources and methods, thereby increasing the validity and reliability of the findings.

1.6.4.1 Data collection in this thesis

In this research, data collection targets logistics service users (LSUs). This approach aligns with the research objective of understanding the extracted benefits from the clients' perspective.

1.6.4.1.1 Structured Literature Review (SLR) methodology

The following subsection outlines the method employed for conducting a SLR, a response to recent calls for enhanced rigor in reviews within management science (Marasco, 2008; Agrawal et al., 2015). An SLR methodically reveals and uncovers patterns and the conceptual landscape of the field (Denyer and Tranfield, 2009). Müller-Seitz (2012) emphasizes the significance of a structured approach to literature selection. To achieve this transparency, the process of selecting relevant journal articles focusing on logistics outsourcing is detailed. The subsequent sections delineate the rigorous search method employed to select pertinent literature and discuss how it addresses research question 1 by examining the focus and contributions of the journal articles to logistics outsourcing. The structured literature review (SLR) is employed to methodically evaluate the existing literature and identify gaps within the context of logistics outsourcing. Based on the identified gaps, the author can subsequently establish a well-informed direction for the mixed methodology approach.

According to Seuring & Müller (2008), a literature review is an organised, transparent, and reproducible method for examining existing research fields. As a methodology for analyzing data, identifying gaps, and proposing future research directions, this SLR scrutinizes the current literature to highlight knowledge gaps. Our review was guided by the four principles outlined by Denyer & Tranfield (2009) for evaluating management and organizational studies: transparency, inclusiveness, explanatory, and heuristic. Adhering to the transparency principle, the review's methodology and procedures have been clearly and explicitly detailed (Denyer & Tranfield, 2009). We ensured clarity by comprehensively describing all aspects of the review process and analysis, allowing readers to accurately assess the study's scope and limitations. To adhere to the inclusiveness principle, we established selection criteria and utilized a five-step strategy (Akbari, 2018) for selecting and analyzing journals. This principle mandates that the selected articles align with the study's objectives. The explanatory principle required us to extend beyond mere descriptive reporting (Denyer & Tranfield, 2009). To fulfill this, we conducted a descriptive analysis of the selected articles, synthesized their findings and limitations, and developed theories on the evolution of logistics outsourcing over the past three decades. Finally, the heuristic principle dictated that the review should offer future directions and guidance to enhance the academic contribution to the logistics outsourcing field. This study utilizes Akbari's (2018) five-step categorization technique for systematic literature evaluation, as illustrated in Figure 9. The review spans 31 years, from 1992 to February 2023, beginning with seminal works on logistics outsourcing, such as Lieb (1992). Articles were sourced from seven major databases: Science Direct, Emerald, Taylor and Francis, Wiley, Springer, Sage, and ProQuest. Supplementary searches on Google Scholar and Scopus were conducted to ensure comprehensive data coverage. In the third step, keyword searches were performed in the titles and/or abstracts of the articles

within the databases. Unlike Akbari (2018), who used broad terms like "logistics" and "outsourcing," this study employed more specific search terms such as "logistics outsourcing," "logistics services," “logistics providers” and "third-party logistics" for greater precision. At this step, the search generated a total of 6476 documents with clear exclusion and inclusion criteria applied to select pertinent papers. The fourth step involved gathering, categorizing, and analyzing all selected articles in a software called Microsoft Excel to establish a database and understand the evolution of logistics outsourcing in the past 31 years. This comprehensive list of research documents was screened by first reviewing the article titles and abstracts. Documents written in languages other than English were excluded. Articles that are books and conference papers are also eliminated. When faced with uncertainty during literature screening, the reviewer leaned towards inclusion (Lim et al., 2015), resulting in a final selection of 207 reviewed papers (See Figure 9).

Finally, the fifth step was used to identify theoretical gaps, significant findings, and future research directions, contributing theoretically to the field of logistics outsourcing. Chapter 2 will provide a comprehensive analysis of the findings from the structured literature review to address RQ1. It will also clearly identify and justify the existing knowledge gaps concerning network resources within the logistics outsourcing literature.

1.6.4.1.2 Data collection for qualitative methods

In order to investigate a research question or hypothesis, the researcher undertakes a sampling process that encompasses identifying the research setting, selecting participants who will contribute data, determining the method for participant selection, and ascertaining the necessary sample size to effectively address the research questions (Creswell & Creswell, 2017). Due to the geographical restrictions and the outbreak of COVID-19 pandemic, the scope of this paper’s data

collection is limited in Vietnam and France. These steps in data collection are pertinent to both qualitative and quantitative research methodologies, and yet they are significantly different in terms of how sampling approaches and sample sizes are conventionally addressed.

Interviews are commonly recognized as the most suitable method for exploratory research, as they allow researchers to explore the "what," "how," and "why" of social phenomena (Saunders et al., 2019). This method offers the flexibility and depth required to gain a comprehensive understanding of complex social dynamics, making it particularly valuable for uncovering the underlying factors and processes at play in various social contexts. Saunders et al. (2019) argue that interviews are the most effective method for gathering reliable insights from companies. The flexibility of interviews allows researchers to deeply understand the context and complexities of organizational operations (Vrontis et al., 2022). Similarly, semi-structured interviews are particularly effective for intensive case studies, as they provide higher quality data in larger quantities at a lower cost (Sathappan et al., 2016).

Saunders et al. (2019) categorize interviews into three types:

- Structured interviews
- Semi-structured interviews
- Unstructured interviews

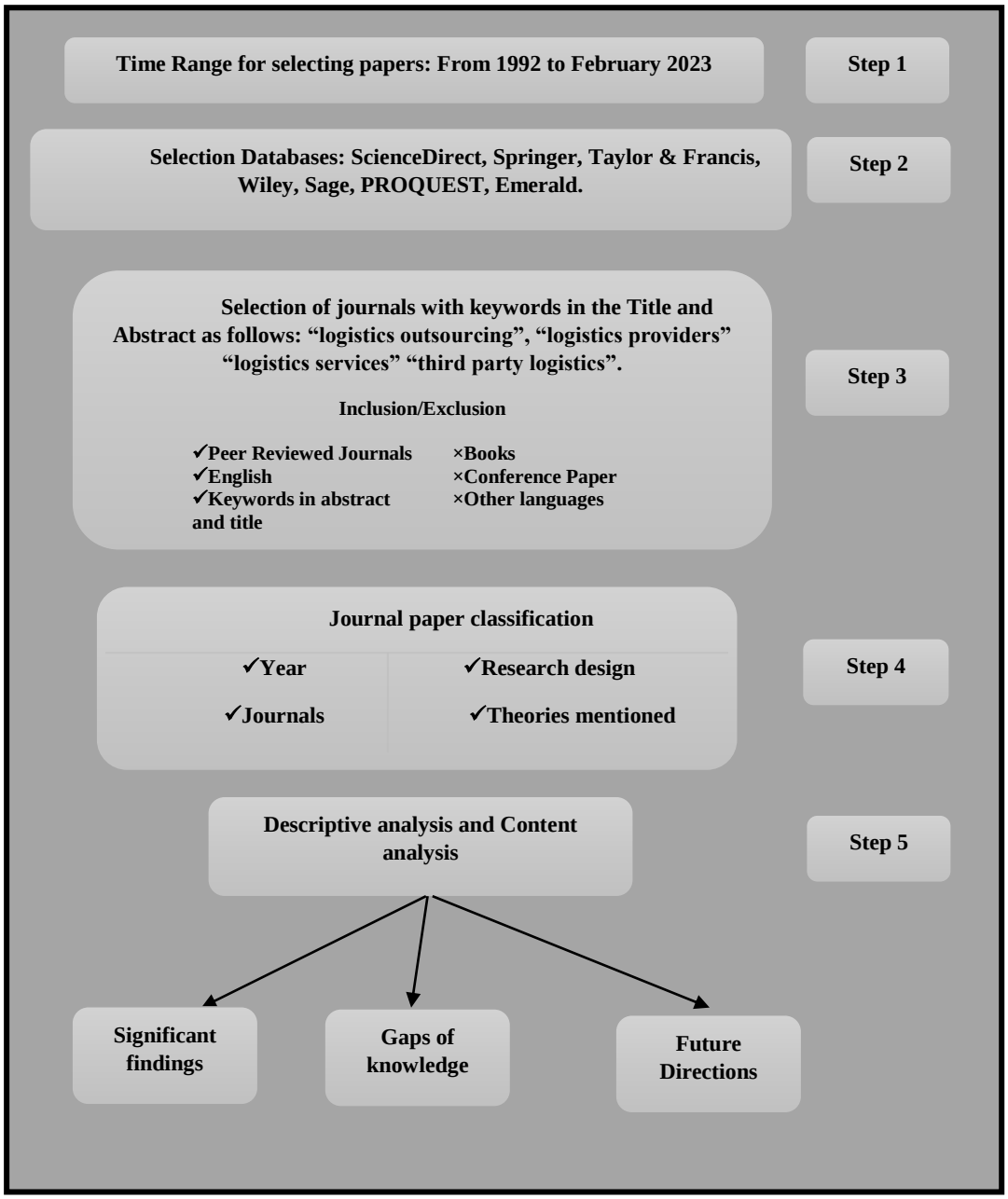

Figure 9: 5-step structured literature review applied for Paper 1.

An unstructured interview, known for its informal structure, allows interviewees to freely express their feelings (Saunders et al., 2019). However, this approach can be biased due to interviewer influence, potentially compromising the reliability of the insights. Consequently, unstructured interviews are deemed inappropriate for this research paper.

Structured interviews consist of a series of pre-prepared questions with pre-coded responses, while semi-structured interviews are organized around different themes, with follow-up questions designed to expand the researchers' understanding (Saunders et al., 2019). The use of structured and semi-structured interviews minimizes bias and clarifies research questions, reducing the likelihood of misunderstandings by the interviewees. In order to explore more about the RQ2, this paper will use semi-structured interviews. Therefore, this study will employ a combination of structured and semi-structured interviews. The structured interview will explore the outsourcing processes of companies, and the semi-structured interview will delve into the selection criteria used in practice and the methods companies employ.

In qualitative research, the researcher used a combination of techniques called purposive sampling and snowballing sampling technique to collect information regarding a central phenomenon. Saunders et al. (2019) defined purposive sampling as deliberately selecting or recruiting participants based on their prior experience with the key phenomenon. A commonly used strategy within the purposive sampling technique is maximal variation sampling, where individuals from diverse backgrounds are chosen to capture a wide range of perspectives on the central topic. Consequently, this study employs this strategy to gather information from individuals across various industries regarding their previous experiences with outsourcing logistics activities. Snowballing is a non-probability sampling method that leverages participants' social networks to progressively expand the sample size by recruiting additional respondents who meet the study's eligibility criteria (Sharma, 2017). In this study, the researcher utilized the snowball sampling technique to identify additional potential participants for qualitative data collection. Initially, purposive sampling was employed to select participants from the researcher's network based on

specific criteria for a series of interviews. The participants were selected according to the following criteria:

1. Holding a management position in the company and being directly involved in logistics outsourcing projects.
2. Having more than seven years of experience in logistics outsourcing projects.
3. Representing a variety of industries, departments, and positions involved in logistics outsourcing projects.

To address the research question concerning the number of interviews required in a qualitative empirical study, Galvin (2015) indicated that researchers can obtain rich information after conducting approximately 30 interviews. Furthermore, "saturated information" is typically achieved after completing 30 interviews (Galvin, 2015). Therefore, to achieve the desired number (30) of valid interviews, the snowball sampling technique was subsequently implemented. This approach aimed to recruit additional participants who met the specified criteria established by the researcher.

This research collected a series of interviews from 30 enterprises, including both international and local companies based in Vietnam, which currently use outsourcing services from logistics providers. The interviews last approximately 50 to 70 minutes and will be supported by a series of questions prepared by the researcher. Due to COVID-19 restrictions limiting face-to-face interactions and travel, and the geographical distances between the researcher and interviewees, the interviews will be conducted via Zoom, allowing for the conversations to be recorded for data analysis purposes. This research necessitates respondents' willingness to participate in interviews. Before conducting the interviews, the researcher made several phone calls to 45 selected companies to introduce themselves and the study. Thirty out of forty-five participants in

management positions agreed to be interviewed via email. Subsequent emails were sent to arrange appointments and clarify details such as the dates, times, and locations for the interviews.

Due to ethical considerations, the researcher introduced themselves and explained the importance of confidentiality and informed consent. Logistics managers were comprehensively briefed on the research objectives and the relevance of their knowledge and experiences concerning resources to the study.

1.6.4.1.3 Data collection for quantitative methodology

Creswell & Creswell (2017) asserted that the predominant method for collecting quantitative data in business and management research is the utilization of questionnaires administered through surveys. Saunders et al. (2019) defined self-administered questionnaires as those typically completed by respondents independently. The data for this study was collected exclusively through an online survey administered via Google Forms. To ensure the credibility of respondents' profiles and the relevance of the sample, participant profiles were reviewed before survey distribution. The survey was then disseminated through professional networking platforms, including LinkedIn, Facebook, and Zalo.

A survey research is an extended process that requires the foundation of an established theoretical model or conceptual framework. It encompasses 6 interrelated stages, including the translation of theoretical concepts into measurable empirical variables, the design and pilot testing of the survey instrument, followed by data collection aimed at testing the theory. The subsequent steps involve data analysis and interpretation of the findings. Ultimately, the process culminates in the preparation and reporting of the research outcomes.

To execute this research, the researcher will begin by establishing the theoretical foundation of the E-RBV in the context of logistics outsourcing, identifying relevant constructs and formulating

hypotheses regarding the impact of network resources on supply chain performance. Subsequently, a measurement and structural model will be developed to design the questionnaire, targeting participants with the expertise necessary to complete the survey. During the pilot testing phase, the collected data will be reviewed to assess whether adjustments to the questionnaire are required. The next step involves cleaning the collected data and performing data analysis using the selected method, such as Structural Equation Modeling (SEM) with Partial Least Squares (PLS), to generate meaningful implications (See Figure 10).

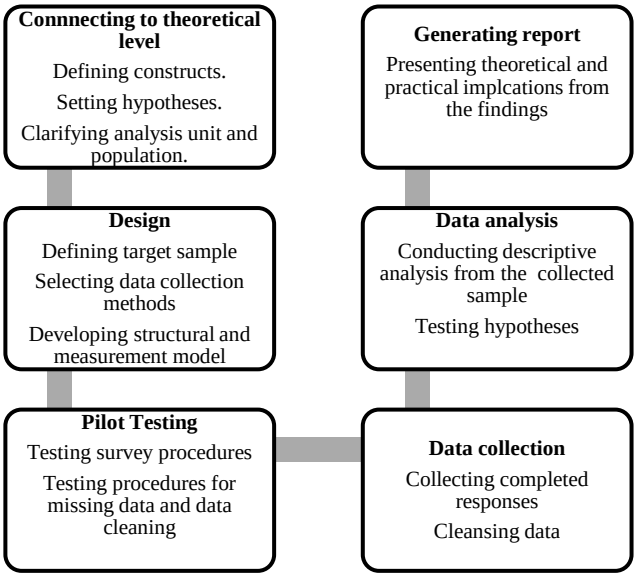

Figure 10: Quantitative data collection and data analysis process.

The full digitization of information effectively eliminates the intermediary step between paper-based data collection and analysis software, streamlining the process. This not only results in significant reductions in time and financial expenditure, such as the elimination of recurring costs related to copying and mailing, but also reduces the likelihood of data entry errors (Cobanoglu et al., 2001). Moreover, the ability to track survey responses in real-time enables researchers to intervene proactively, for instance by issuing additional motivational communications if response rates fall below anticipated levels. As a result, the questionnaires will be distributed electronically

using Internet-mediated surveys. Given the advantages of web-based surveys, the researcher utilized the Google Forms platform to collect data from 239 respondents, aiming to explore the mediating role of network resources in supply chain performance.

In most management and business research, data collected through questionnaires are used for explanatory purposes (Saunders et al., 2019). Explanatory research requires data to test one or more theories, necessitating the researcher to define the theories as relationships between variables before designing the questionnaire. This involves developing a conceptual framework that specifies the relationships between the variables. (Slattery et al., 2011). Hence, the questionnaire is relevant for investigating whether network resources have direct and indirect effects on other variables of the conceptual framework. Specifically, the quantitative investigation will study the influence of network resources on outsourcing drivers, contract management and supply chain performance of focal company.

Similar to the non-probability technique used in qualitative data collection stage, purposive sampling technique will be used to select potential participants who have experience and knowledge in logistics outsourcing activities. Hox & Maas (2001) conducted a simulation to examine the accuracy of model tests and standard errors and determined that a group-level sample size of 239 is necessary to achieve sufficient accuracy for the model test and confidence intervals (CIs) for the parameters. Even with a larger sample size, significance tests are only approximate, with an operating alpha level around 8%, rather than the nominal alpha of 5% (Hox et al., 2010).

In the design of a survey for quantitative research focused on logistics outsourcing initiatives in Vietnam, specific criteria are important in the selection of participants. The primary criteria is that respondents must possess over five years of experience in coordinating and managing logistics outsourcing initiatives. This ensures that participants have a significant depth of industry

knowledge and expertise, enhancing the reliability and validity of the collected data. The second criteria involves selecting individuals employed by either local or international companies in Vietnam. By incorporating participants from both local and international contexts, the survey captures a diverse array of perspectives and practices.

1.6.4.2 Data analysis in mixed methodology

1.6.4.2.1 Content analysis in Literature Review

For a comprehensive analysis of the literature review, the content analysis method will be employed to investigate various trends in logistics outsourcing. Hsieh & Shannon (2005) categorized content analysis as a qualitative research method, that involves the systematic interpretation of text data by coding and identifying themes and patterns. The aim of employing content analysis as a research technique is to generate novel insights, enhance understanding of a particular phenomenon, and obtain a more comprehensive and concise description of the phenomenon, in addition to characterizing and quantifying it (Elo & Kyngäs, 2008). The advantages of content analysis include its ability to analyze large volumes of text data, as well as its potential to uncover patterns and themes within the data (Piepenbrink & Gaur, 2017). According to Kondracki et al. (2002), content components can encompass a range of elements, including words, phrases, theories, topics, concepts, and other characteristics. Content analysis enables researchers to develop constructs or theories based on their knowledge and the evidence gathered from their study. This systematic and comprehensive evaluation allows for the drawing of conclusions about various factors, such as the presence or absence of specific ideas, theories, or biases; the degree of coverage of certain topics; contradictions; or myths, among other applications. Hence, the author employs content analysis to identify gaps and future directions in the reviewed papers. For instance, theoretical gaps, such as the least and the most studied topics in the context of logistics outsourcing, can be identified to uncover missing elements in the previous literature. Moreover, it is crucial for researchers to establish the validity of their work by rigorously

testing and verifying that the variables under investigation effectively address the research questions at hand (Kondracki et al., 2002). In this thesis, the author must ensure that the variables identified through content analysis are valid and appropriate for answering Research Question 1, which focuses on the evolution of logistics outsourcing. As a result, the content of reviewed papers was categorized into different common topics such as advanced logistics technology, the disruption era, outsourcing strategy, relationship management, and sustainability.

1.6.4.2.2 Data analysis for qualitative methodology

A useful typology for understanding the range of qualitative data categorizes them into three basic types: text, images, and sound. Most studies focus exclusively on text, the most common form of qualitative data analyzed in research (Bernard & Ryan, 1998). Given the complexity of the logistics outsourcing context, this study primarily focuses on the analysis of text transcribed from the aforementioned series of interviews to address research questions RQ2.

Bernard & Ryan (1998) introduced the hierarchy map of qualitative word-based analysis, which categorizes the analysis of words into two approaches: as objects or as experiences (see Figure 11). Guest et al. (2012) elaborates that analyzing text as an object is prevalent in linguistic analyses, where the focus is on the structure and the words' meanings. In contrast, analyzing text as a proxy for experience involves examining individuals' feelings, perceptions, knowledge and as conveyed in the text, often derived from interactions with research participants. This approach is more relevant to the research objectives, which aim to discover and explore logistics service users' perceptions and experiences in utilizing logistics services and extracting benefits to achieve competitive advantages.

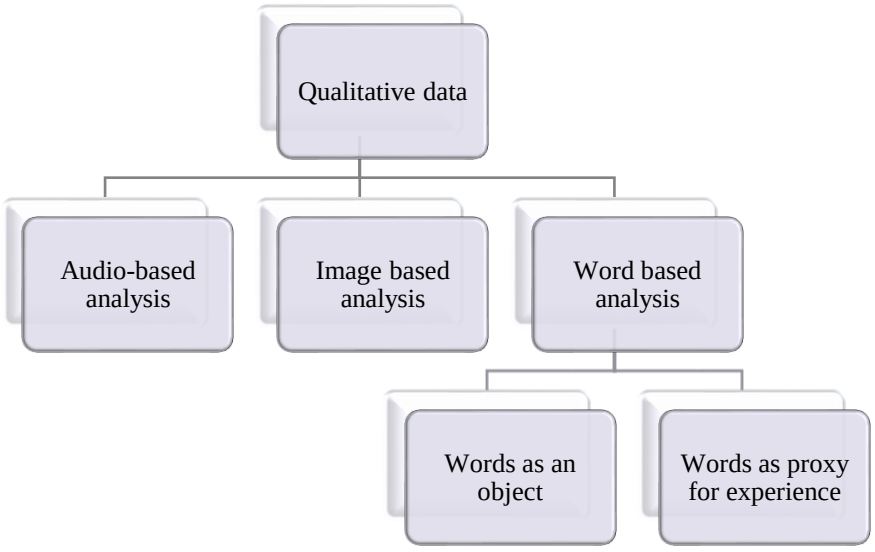

Figure 11: The hierarchy map of word-based qualitative analysis (Conducted from Bernard & Ryan, 1998)

Saunders et al. (2019) introduce different data analysis techniques including grounded theory, discourse analysis, narrative analysis, content analysis, and thematic analysis. Unlike thematic analysis, which focuses on identifying and interpreting patterns of meaning across data, narrative analysis allows researchers to study phenomena as complete stories. However, this approach is not suitable for this study as the researcher aims to focus on specific research questions exploring new insights into the outsourcing process, selection criteria, and methods of supplier selection.

Discourse analysis, defined as examining social phenomena through the lens of language usage and its impacts, and content analysis, which quantitatively analyzes qualitative data, are not appropriate for this study. The objective here is not to delve into discourse within institutional fields or to seek generalizability. Therefore, content analysis and discourse analysis are not utilized in the qualitative analysis section. While both grounded theory and thematic analysis involve coding processes, thematic analysis is considered more flexible. Grounded theory, known for its role in theory-building and involving a complex coding process, is time-consuming and not

suitable for this research, which aims to explore specific dimensions of the outsourcing process. Due to its concentration on logistics outsourcing drivers, barriers, outcome and network resources achievement methods, thematic analysis is chosen as the most appropriate method for analyzing qualitative data.

Thematic analysis is defined as an analytical technique to identify, classify and develop themes from collected qualitative data (Saunders et al., 2019). The same authors say that thematic analysis can support researchers to identify themes that match their research questions. In this research, the researcher will follow the six-phase process of thematic analysis used by Braun & Clarke (2006) (see Figure 12). In the beginning, getting familiar with data by transcribing and repeatedly reviewing data is important as it will prepare for the second step. Then, codes are made in the transcripts to identify the connection between interviews and the phenomenon. Saunders et al. (2019) state the coding process could also create more themes and sub-themes that could help to define the themes in later steps. In steps 3 and 4, the codes will be merged into relevant themes which match the research questions before being reviewed again to avoid confusion such as that repeated data in different themes could provide different meanings for the findings. It is addressed that in order to effectively review codes and themes, researchers should notice data repetition, similarities or same words but different meanings in different scenarios (Price et al., 2015). Finally, themes then will be defined and analysed before producing the final reports.

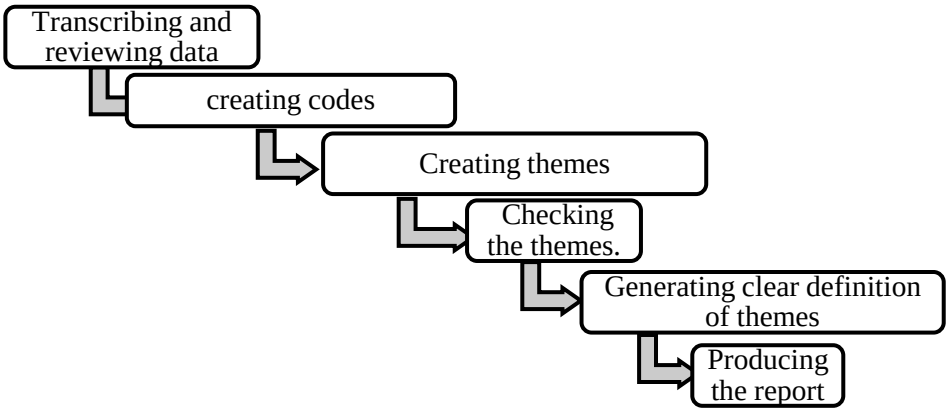

Figure 12:6-phase of thematic analysis (Conducted from Braun & Clarke, 2006)

In this case, with the supports of a computer-assisted qualitative data analysis software (CAQDAS) package, called NVIVO; themes and codes will be implemented on the software.

From the perspective of the Extended Resource-Based View theory (ERBV) and employing thematic analysis, this study identifies four primary themes: methods employed to acquire network resources, determinants influencing the achievement of network resources, resulting competitive advantages, and specific benefits gained. Specifically, it delves into twelve sub-themes and nine second-layer sub-themes, providing a thorough understanding of the dynamics of network resources in the realm of logistics outsourcing. Chapter 5 will present an in-depth analysis of the literature, methodology, findings, and discussions related to the qualitative methodology used to explore the utilization of network resources in logistics outsourcing.

1.6.4.2.3 Data analysis for quantitative methodology

The origins of Structural Equation Modeling (SEM) can be traced to Spearman's (1904) development of exploratory factor analysis, though it was Wright (1921, 1934) who later advanced the method by applying path analysis to examine causal effects in genetics. SEM's value lies in its capacity to test complex hypotheses that are challenging or impossible to assess with other analytical techniques. This is because SEM operates within a broad, flexible framework capable of integrating a variety of standard statistical methods. SEM can distinguish between observed and

latent variables, significantly expanding the range of models that can be analyzed. For example, abstract concepts such as "outsourcing drivers" or "selection criteria" can be represented as latent variables (or factors) within SEM, enabling the study of these intangible constructs in a structured manner. SEM, in contrast to traditional data analysis methods like ANOVA or linear regression, is a more advanced technique that enables the examination of intricate relationships between independent and dependent variables within a unified, systematic, and comprehensive framework (Bagozzi & Fornell, 1982; Gefen et al., 2000). The author uses Partial Least Squares Structural Equation Modeling (PLS-SEM) as the analytical technique to examine the research hypotheses. Kern et al. (2012) asserted several key justifications for selecting PLS-SEM, including its appropriateness for smaller sample sizes, predictive applications, and capacity for theory development. Given the research objectives and the complexity of the structural model, which aimed to measure both direct and indirect effects of network resources in the theoretical model, the use of PLS-SEM was particularly well-suited for this study context.

Hair et al. (2014) introduced a comprehensive seven-step procedure for the application of PLS-SEM, organized into three distinct phases: model development, model measurement, and SEM testing. This structured approach provides a systematic framework for effectively applying PLS-SEM in empirical research. The first step encompasses defining the structural model, which involves specifying the relationships between variables. Specifically, with the mediation of network resources, the direct and indirect relationships between outsourcing drivers, selection criteria, contract category, and supply chain performances will be presented. The second step requires delineating the measurement models, where the associations between the latent variables and their corresponding indicators are described.

The third step focuses on data collection and examination, ensuring the gathered data is suitable for SEM analysis and meets necessary quality standards. In the fourth step, PLS path model estimation is carried out, which involves computing the path coefficients and the loadings of the indicators on their respective latent variables.

The fifth step centers on evaluating the PLS-SEM results of the measurement models to verify their validity and reliability. Subsequently, the sixth step involves analyzing the PLS-SEM results of the structural model to assess the hypothesized relationships between the latent variables. Lastly, the seventh step entails interpreting the findings and drawing conclusions based on the results, providing insights and implications for the research. Figure 13 summarizes the data analysis process conducted from Hair et al. (2014).

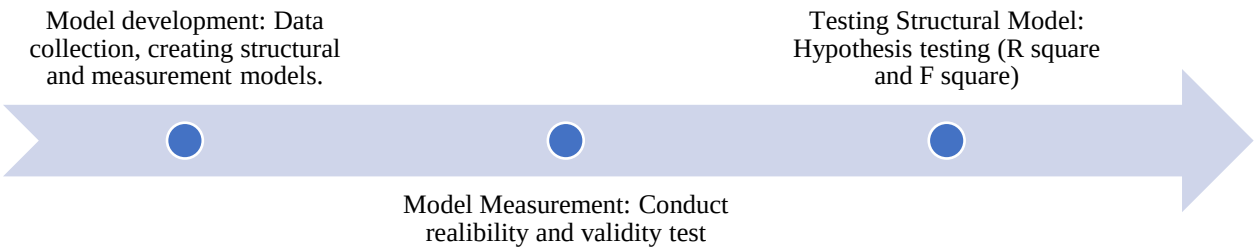

Figure 13:Data analysis process adapted from Hair et al. (2014)

1.7 Conclusion of Chapter 1

In this chapter, I introduced the foundational elements of our research on the application of network resources in the context of logistics outsourcing. The theoretical model was presented, emphasizing the role of extended resource-based view theory to explain how organizations leverage external partnerships and interconnected resources for competitive advantage. The research focused three key abovementioned research questions to fully understand the application of network resources in logistics outsourcing context. To address these questions comprehensively,

a mixed-methods research will be used, integrating qualitative and quantitative methodologies. This chapter laid the groundwork for the subsequent chapters, providing a structured progression toward addressing the research questions.

1.8 References list of Chapter 1

1. Abraham, J., Sick, B., Anderson, J., Berg, A., Dehmer, C., & Tufano, A. (2011). Selecting a provider: What factors influence patients' decision making? Journal of Healthcare Management, 56(2), 99-116.

2. Agrawal, S., Singh, R. K., & Murtaza, Q. (2015). A literature review and perspectives in reverse logistics. Resources, Conservation and Recycling, 97, 76-92.

3. Aguezzoul, A. (2014). Third-party logistics selection problem: A literature review on criteria and methods. Omega, 49, 69-78.

4. Akbari, M. (2018). Logistics outsourcing: a structured literature review. Benchmarking: An International Journal, 25(5), 1548-1580.

5 Akbari, M. (2024). Navigating the Spectrum from 1 to 6PL in the Age of Technology and Innovation. In The Road to Outsourcing 4.0: Next-Generation Supply Chain (pp. 147-167). Singapore: Springer Nature Singapore.

6. Aktas, E., Agaran, B., Ulengin, F., & Onsel, S. (2011). The use of outsourcing logistics activities: The case of Turkey. Transportation Research Part C: Emerging Technologies, 19(5), 833-852.

7. Alkhatib, S. F., Darlington, R., & Nguyen, T. T. (2015). Logistics Service Providers (LSPs) evaluation and selection: Literature review and framework development. Strategic Outsourcing: An International Journal, 8(1), 102-134.

8. Alkhatib, S. F., Darlington, R., Yang, Z., & Nguyen, T. T. (2015). A novel technique for evaluating and selecting logistics service providers based on the logistics resource view. Expert Systems with Applications, 42(20), 6976-6989.

9. Alshawi, S. (2001). Logistics in the Internet age: towards a holistic information and processes picture. Logistics Information Management, 14(4), 235-242.

10. Amit, R., & Schoemaker, P. (1993). Strategic assets and organizational rent. Strategic Management Journal, 14, 33–46.

11. Anand, N., & Grover, N. (2015). Measuring retail supply chain performance: Theoretical model using key performance indicators (KPIs). Benchmarking: An International Journal, 22(1), 135-166.

12. Andreas, G., Laugen, B., Arkader, R., & Fleury, A. (2013). Differences in outsourcing strategies between firms in emerging and in developed markets. International Journal of

Operations and Production Management, 33, 296-321. https://doi.org/10.1108/01443571311300791.

13. Andreas, G., Laugen, B., Arkader, R., & Fleury, A. (2013). Differences in outsourcing strategies between firms in emerging and in developed markets. International Journal of Operations and Production Management, 33, 296-321. https://doi.org/10.1108/01443571311300791.

14. Ansari, A., & Modarress, B. (2010). Challenges of outsourcing logistics to third-party providers. International Journal of Logistics Systems and Management, 7(2), 198-218.

15. Aubert, B. A., Rivard, S., & Patry, M. (2004). A transaction cost model of IT outsourcing. Information & Management, 41(7), 921-932.

16. Azevedo, S. G., Govindan, K., Carvalho, H., & Cruz-Machado, V. (2013). Ecosilient index to assess the greenness and resilience of the upstream automotive supply chain. Journal of Cleaner Production, 56, 131–146.

17 Bagozzi, R. P., & Fornell, C. (1982). Theoretical concepts, measurement, and meaning. In: Fornell, C. (Ed.), A Second Generation of Multivariate Analysis. New York: Praeger.

18. Barney, J. B. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99–120.

19. Barney, J. B. (1991). Resource Based View (RBV) theory. Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99-120.

20. Barney, J. B., & Hesterly, W. S. (2006). Organizational economics: Understanding the relationship between organizations and economic analysis. In S. R. Clegg, C. Hardy, T. B. Lawrence, & W. R. Nord (Eds.), The SAGE Handbook of Organization Studies (pp. 111-148). SAGE Publications Ltd.

21. Bask, A. H. (2001). Relationships among TPL providers and members of supply chains - A strategic perspective. Journal of Business & Industrial Marketing, 16(6), 470-486.

22. Bates, K. A., & Flynn, E. J. (1995, August). Innovation History and Competitive Advantage: A Resource-Based View Analysis of Manufacturing Technology Innovations. In Academy of Management Proceedings (Vol. 1995, No. 1, pp. 235-239). Briarcliff Manor, NY 10510: Academy of Management.

23. Beikkhakhian, Y., Javanmardi, M., Karbasian, M., & Khayambashi, B. (2015). The application of ISM model in evaluating agile suppliers selection criteria and ranking suppliers using fuzzy TOPSIS-AHP methods. Expert Systems with Applications, 42(15-16), 6224-6236.

24. Benyoucef, L., Ding, H., & Xie, X. (2003). Supplier selection problem: Selection criteria and methods. Institut National De Recherche En Informatique Et Automatique (INRIA) Lorraine.

25. Berglund, M., Laarhoven, P. V., & Peters, M. (2000). Third-party logistics in Europe – five years later. International Journal of Physical Distribution & Logistics Management, 30(5), 425-442.

26. Berglund, M., Laarhoven, P. V., Sharman, G., & Wandel, S. (1999). Third-party logistics: Is there a future? The International Journal of Logistics Management, 10(1), 59-70.

27. Bernard, H. R., & Ryan, G. (1998). Text analysis: Qualitative and quantitative methods. In Edited by: H. R. Bernard (Ed.), Handbook of methods in cultural anthropology (pp. 595–645). Walnut Creek, CA: AltaMira Press.

28. Bolumole, Y. A., Frankel, R., & Naslund, D. (2007). Developing a theoretical framework for logistics outsourcing. Transportation Journal, 46(2), 35-54.

29. Bottani, E., & Rizzi, A. (2006). A fuzzy TOPSIS methodology to support outsourcing of logistics services. Supply Chain Management: An International Journal, 11(4), 294-308.

30. Bowersox, D. J., Closs, D., & Cooper, B. (2012). Supply Chain Logistics Management (4th ed.). McGraw-Hill Education.

31. Büyüközkan, G., Feyzioğlu, O., & Nebol, E. (2008). Selection of the strategic alliance partner in logistics value chain. International Journal of Production Economics, 113(1), 148-158.

32. Cardak, B. A., & Wilkins, R. (2009). The determinants of household risky asset holdings: Australian evidence on background risk and other factors. Journal of banking & Finance, 33(5), 850-860.

33. Castanias, R. P., & Helfat, C. E. (1991). Managerial resources and rents. Journal of Management, 17(1), 155-171.

34. Chen, Y. M., Goan, M. J., & Huang, P. N. (2011). Selection process in logistics outsourcing–a view from third-party logistics provider. Production Planning & Control, 22(3), 308-324.

35. Chopra, S., & Sodhi, M. (2012). Managing risk to avoid supply-chain breakdown. MIT Sloan Management Review (Fall 2004), 46(1), 53-61.

36. Chu, Z., & Wang, Q. (2012). Drivers of relationship quality in logistics outsourcing in China. Journal of Supply Chain Management, 48(3), 78-96.

37. Cobanoglu, C., Warde, B., & Moreo, P. J. (2001). A comparison of mail, fax and web-based survey methods. International Journal of Market Research, 43(4), 441-452.

38. Conner, K. R. (1991). A historical comparison of resource-based theory and five schools of thought within industrial organization economics: Do we have a new theory of the firm? Journal of Management, 17(1), 121-154.

39. Creswell, J. W., & Creswell, J. D. (2017). Research design: Qualitative, quantitative, and mixed methods approaches. Sage Publications.

40. Curado, C., & Bontis, N. (2006). The knowledge-based view of the firm and its theoretical precursor. International Journal of Learning and Intellectual Capital, 3(4), 367-381.

41. Daim, T. U., Udbye, A., & Balasubramanian, A. (2013). Use of analytic hierarchy process (AHP) for selection of 3PL providers. Journal of Manufacturing Technology Management, 24(1), 28-51.

42. David-West, O., Iheanachor, N., & Kelikume, I. (2018). A resource-based view of digital financial services (DFS): An exploratory study of Nigerian providers. Journal of Business Research, 88, 513-526.

43. Deepen, J. M. (2007). Antecedents and effects of logistics outsourcing performance. Logistics Outsourcing Relationships: Measurement, Antecedents, and Effects of Logistics Outsourcing Performance, 83-143.

44. Dussauge, P., Garrette, B., & Mitchell, W. (2000). Learning from competing partners: Outcomes and durations of scale and link alliances in Europe, North America, and Asia. Strategic Management Journal, 21(2), 99-126.

45. Dyer, J. H., & Singh, H. (1998). The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage. The Academy of Management Review, 23(4), 660-679.

46. Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. Journal of Advanced Nursing, 62(1), 107-115.

47. Erturgut, R., & Alanur, H. (2015). Freight forwarding and military logistics as a strategic outsourcing form: An empirical analysis on military freight forwarding firms in the US. Eng. Sci. Technol, 2(9), 2382-2390.

48. Erturgut, R. (2012). The future of supply chain and logistics management in the strategic organizations: Contractor companies and new generation suppliers. Procedia-Social and Behavioral Sciences, 46, 4221-4225. https://doi.org/10.1016/j.sbspro.2012.06.230

49. Espino-Rodríguez, T. F., & Gil-Padilla, A. M. (2005). Determinants of information systems outsourcing in hotels from the resource-based view: An empirical study. International Journal of Tourism Research, 7(1), 35-47.

50. Espino-Rodríguez, T. F., & Padrón-Robaina, V. (2006). A review of outsourcing from the resource-based view of the firm. International Journal of Management Reviews, 8(1), 49-70.

51. Farahani, R., Rezapour, S., & Kardar, L. (Eds.). (2011). Logistics operations and management: Concepts and models. Elsevier.

52. Falsini, D., Fondi, F., & Schiraldi, M. M. (2012). A logistics provider evaluation and selection methodology based on AHP, DEA, and linear programming integration. International Journal of Production Research, 50(17), 4822-4829.

53. Fawcett, S. E., & Smith, S. R. (1995). Logistics measurement and performance for United States-Mexican operations under NAFTA. Transportation Journal, 34(3), 25–34.

54. Feldman, M. S. (2004). Resources in emerging structures and processes of change. Organization Science, 15, 295–309. https://doi.org/10.1287/orsc.1040.0073

55. Feldman, M. S., & Orlikowski, W. J. (2011). Theorizing practice and practicing theory. Organization Science, 22, 1240–1253. https://doi.org/10.1287/orsc.1100.0612

56. Fernandes, A. C., Sampaio, P., Sameiro, M., & Truong, H. Q. (2017). Supply chain management and quality management integration: A conceptual model proposal. International Journal of Quality & Reliability Management, 34(1), 53-67.

57. Fiol, C. M. (1991). Managing culture as a competitive resource: An identity-based view of sustainable competitive advantage. Journal of Management, 17(1), 191-211.

58. Galvin, R. (2015). How many interviews are enough? Do qualitative interviews in building energy consumption research produce reliable knowledge? Journal of Building Engineering, 1, 2-12.

59. Govindan, K., Khodaverdi, R., & Vafadarnikjoo, A. (2016). A grey DEMATEL approach to develop third-party logistics provider selection criteria. Industrial Management & Data Systems, 116(4), 690-722.

60. Grant, R. M. (1996). Toward a knowledge-based theory of the firm. Strategic Management Journal, 17(S2), 109-122.

61. Guest, G., MacQueen, K. M., & Namey, E. E. (2012). Applied thematic analysis. Sage.

62. Gulati, R. (1995a). Does familiarity breed trust? The implications of repeated ties for contractual choices. Academy of Management Journal, 35(4), 85–112.

63. Gulati, R. (1999). Network location and learning: The influence of network resources and firm capabilities on alliance formation. Strategic Management Journal, 20(5), 397-420.

64. Gulati, R., Lavie, D., & Madhavan, R. R. (2011). How do networks matter? The performance effects of interorganizational networks. Research in Organizational Behavior, 31, 207-224.

65. Gulati, R., & Sytch, M. (2007). Dependence asymmetry and joint dependence in interorganizational relationships: Effects of embeddedness on a manufacturer's performance in procurement relationships. Administrative Science Quarterly, 52(1), 32-69.

66. Gupta, A., Singh, R. K., & Mangla, S. K. (2022). Evaluation of logistics providers for sustainable service quality: Analytics-based decision-making framework. Annals of Operations Research, 315(2), 1617-1664.

67. Gürcan, Ö. F., Yazıcı, İ., Beyca, Ö. F., Arslan, Ç. Y., & Eldemir, F. (2016). Third-party logistics (3PL) provider selection with AHP application. Procedia-Social and Behavioral Sciences, 235, 226-234.

68. Gürcan, R., Ganesh, K., & Pugazhendhi, S. (2013). Drivers for logistics outsourcing and factor analysis for selection of 3PL provider. International Journal of Business Excellence, 6(1), 37-58.

69. Haifa, J., Abdessalem, J., & Hatem, B. (2024, May). Logistics Service Provider: Literature review, perspectives, and opportunities. In 2024 IEEE 15th International Colloquium on Logistics and Supply Chain Management (LOGISTIQUA) (pp. 1-7). IEEE.

70. Hair Jr, F., Sarstedt, M., Hopkins, L., & Kuppelwieser, G. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. European business review, 26(2), 106-121.

71. Harland, C., Knight, L., Lamming, R., & Walker, H. (2005). Outsourcing: assessing the risks and benefits for organisations, sectors and nations. International Journal of Operations & Production Management, 25(9), 831-850.

72. Harrison, J. S., Hitt, M. A., Hoskisson, R. E., & Ireland, R. D. (1991). Synergies and post-acquisition performance: Differences versus similarities in resource allocations. Journal of Management, 17(1), 173-190.

73. Hitt, M. A., Xu, K., & Carnes, C. M. (2016). Resource-based theory in operations management research. Journal of Operations Management, 41, 77-94.

74. Hofmann, E., & Osterwalder, F. (2017). Third-party logistics providers in the digital age: Towards a new competitive arena? Logistics, 1(2), 9.

75. Hofenk, D., Schipper, R., Semeijn, J., & Gelderman, C. (2011). The influence of contractual and relational factors on the effectiveness of third-party logistics relationships. Journal of Purchasing and Supply Management, 17(3), 167-175.

76. Hosie, P., Sundarakani, B., Tan, A. W. K., & Koźlak, A. (2012). Determinants of fifth party logistics (5PL): Service providers for supply chain management. International Journal of Logistics Systems and Management, 13(3), 287-316.

77. Hox, J. J., & Maas, C. J. (2001). The accuracy of multilevel structural equation modeling with pseudobalanced groups and small samples. Structural equation modeling, 8(2), 157-174.

78. Hox, J. J., Maas, C. J., & Brinkhuis, M. J. (2010). The effect of estimation method and sample size in multilevel structural equation modeling. Statistica neerlandica, 64(2), 157-170.

79. Hoyer, C., Gunawan, I., & Reaiche, C. H. (2021). Implementing industry 4.0—The need for a holistic approach. In A. Dingli, F. Haddod & C. Klüver (Eds.), Artificial intelligence in industry 4.0. Studies in Computational Intelligence, vol 928. Springer. https://doi.org/10.1007/978-3-030-61045-6_1

80. Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. Qualitative health research, 15(9), 1277-1288.

81. Hsu, C. C., Liou, J. J., & Chuang, Y. C. (2013). Integrating DANP and modified grey relation theory for the selection of an outsourcing provider. Expert Systems with Applications, 40(6), 2297-2304.

82. Hsu, C. H., Wang, F. K., & Tzeng, G. H. (2012). The best vendor selection for conducting the recycled material based on a hybrid MCDM model combining DANP with VIKOR. Resources, Conservation and Recycling Journal, 66, 95-111. doi:10.1016/j.resconrec.2012.02.009

83. Huang, S. M., Ou, C. S., Chen, C. M., & Lin, B. (2006). An empirical study of the relationship between IT investment and firm performance: A resource-based perspective. European Journal of Operational Research, 173(3), 984-999.

84. Huggins, R. (2010). Forms of network resource: knowledge access and the role of inter-firm networks. International Journal of Management Reviews, 12(3), 335-352.

85. Hung Lau, K., & Zhang, J. (2006). Drivers and obstacles of outsourcing practices in China. International Journal of Physical Distribution & Logistics Management, 36(10), 776-792.

86. Huo, B., Fu, D., Zhao, X., & Zhu, J. (2016). Curbing opportunism in logistics outsourcing relationships: The role of relational norms and contract. International Journal of Production Economics, 182, 293-303.

87. Hsiao, H. I., Kemp, R. G. M., Van der Vorst, J. G. A. J., & Omta, S. O. (2010). A classification of logistic outsourcing levels and their impact on service performance: Evidence from the food processing industry. International Journal of Production Economics, 124(1), 75-86.

88. Jaafar, H. S., & Rafiq, M. (2005). Customers' Perceptions of Service Quality by TPL Service Providers in the United Kingdom—A Confirmatory Factor Analysis. In Research Methodologies in Supply Chain Management: In Collaboration with Magnus Westhaus (pp. 187-202).

89. Jharkharia, S., & Shankar, R. (2007). Selection of logistics service provider: An analytic network process (ANP) approach. Omega, 35(3), 274-289.

90. Jiang, Z., Henneberg, S. C., & Naudé, P. (2011). Supplier relationship management in the construction industry: The effects of trust and dependence. Journal of Business & Industrial Marketing, 27(1), 3-15. https://doi.org/10.1108/08858621211188920

91. Jiang, B., Belohlav, J. A., & Young, S. T. (2007). Outsourcing impact on manufacturing firms' value: Evidence from Japan. Journal of Operations Management, 25(4), 885-900.

92. Kanda, A., & Deshmukh, S. (2008). Supply chain coordination: Perspectives, empirical studies and research directions. International Journal of Production Economics, 115(2), 316-335.

93. Kannan, D., Garg, K., Jha, P. C., & Diabat, A. (2017). Integrating disassembly line balancing in the planning of a reverse logistics network from the perspective of a third party provider. Annals of Operations Research, 253, 353-376.

94. Karia, N., & Wong, C. Y. (2013). The impact of logistics resources on the performance of Malaysian logistics service providers. Production Planning & Control, 24(7), 589-606.

95. Karia, N. (2018). Knowledge resources, technology resources and competitive advantage of logistics service providers. Knowledge Management Research & Practice, 16(4), 451-463.

96. Kasperek, M. (2013). Operating model of a 4PL provider. Journal of Economics and Management, 12, 23-44.

97. Kayikci, Y., & Stix, V. (2014). Causal mechanism in transport collaboration. Expert Systems with Applications, 41(4), 1561-1575.

98. Kern, D., Moser, R., Hartmann, E., & Moder, M. (2012). Supply risk management: model development and empirical analysis. International Journal of Physical Distribution and Logistics Management, 42(1), 60-82.

99. Knemeyer, A. M., & Murphy, P. R. (2004). Evaluating the performance of third-party logistics arrangements: a relationship marketing perspective. Journal of Supply Chain Management, 40(4), 35-51.

100. Kondracki, N. L., Wellman, N. S., & Amundson, D. R. (2002). Content analysis: Review of methods and their applications in nutrition education. Journal of Nutrition Education and Behavior, 34(4), 224-230.

101. König, A., & Spinler, S. (2016). The effect of logistics outsourcing on the supply chain vulnerability of shippers: Development of a conceptual risk management framework. The International Journal of Logistics Management, 27(1), 122-141.

102. Krakovics, F., Eugenio Leal, J., Mendes, P., & Lorenzo Santos, R. (2008). Defining and calibrating performance indicators of a 4PL in the chemical industry in Brazil. International Journal of Production Economics, 115(2), 502-514. doi:10.1016/j.ijpe.2008.05.016

103. Kremic, T., Icmeli Tukel, O., & Rom, W. O. (2006). Outsourcing decision support: a survey of benefits, risks, and decision factors. Supply Chain Management: an international journal, 11(6), 467-482.

104. Lai, F., Chu, Z., Wang, Q., & Fan, C. (2013). Managing dependence in logistics outsourcing relationships: Evidence from China. International Journal of Production Research, 51(10), 3037-3054.

105. Lai, F., Li, D., Wang, Q., & Zhao, X. (2008). The information technology capability of third-party logistics providers: a resource-based view and empirical evidence from China. Journal of Supply Chain Management, 44(3), 22-38.

106. Langley, J., & Capgemini. (2007). The state of logistics outsourcing: 2007 third-party logistics. In 12th Annual Study of Third Party. Third Party Logistics.

107. Langley, J., & Capgemini. (2015). 2015 Third-Party Logistics Study - Annual Study on the State of Logistics Outsourcing. Results and Findings of the 19th Annual Study.

108. Laarhoven, P. V., Berglund, M., & Peters, M. (2000). Third-party logistics in Europe – five years later. International Journal of Physical Distribution & Logistics Management, 30(5), 425-442.

109. Lavie, D. (2006). Interconnected firms and the value of network resources. In Advances in Mergers and Acquisitions (pp. 127-141). Emerald Group Publishing Limited.

110. Lavie, D. (2007). Alliance portfolios and firm performance: A study of value creation and appropriation in the US software industry. Strategic Management Journal, 28(12), 1187-1212.

111. Lee, Y., & Cavusgil, S. T. (2006). Enhancing alliance performance: The effects of contractual-based versus relational-based governance. Journal of Business Research, 59(8), 896-905.

112. Li, X., Liu, W., Lei, L., Zhao, Y., & Ren, S. (2003, October). The design and realization of four party logistics. In SMC'03 Conference Proceedings. 2003 IEEE International Conference on Systems, Man and Cybernetics. Conference Theme-System Security and Assurance (Cat. No. 03CH37483) (Vol. 1, pp. 838-842). IEEE.

113. Lieb, R. C., & Bentz, B. A. (2005). The use of third-party logistics services by large American manufacturers: The 2004 survey. Transportation Journal, 44(2), 5-15.

114. LIM, S. F. W. T., Xin, J., & Srai, J. (2015). Last-mile logistics models: A literature review and design guideline.

115. Liou, J. J., & Chuang, Y. T. (2010). Developing a hybrid multi-criteria model for selection of outsourcing providers. Expert Systems with Applications, 37(5), 3755-3761.

116. Liu, H. T., & Wang, W. K. (2009). An integrated fuzzy approach for provider evaluation and selection in third-party logistics. Expert Systems with Applications, 36(3), 4387-4398.

117. Logan, S. M. (2000). Predicting working alliance of substance-abusing clients and counselors. Texas Christian University.

118. Mahoney, J. T., & Pandian, J. R. (1992). The resource-based view within the conversation of strategic management. Strategic Management Journal, 13(5), 363-380.

119. Mai, C. (2023, July 3). Tăng cường kết nối đưa Việt Nam trở thành trung tâm logistics. Retrieved from https://dangcongsan.vn/kinh-te/tang-cuong-ket-noi-dua-viet-nam-tro-thanh-trung-tam-logistics-641063.html

120. Marasco, A. (2008). Third-party logistics: A literature review. International Journal of Production Economics, 113(1), 127-147.

121. Marchet, G., Melacini, M., Sassi, C., & Tappia, E. (2017). Assessing efficiency and innovation in the 3PL industry: an empirical analysis. International Journal of Logistics Research and Applications, 20(1), 53-72.

122. Marchet, G., Melacini, M., Perotti, S., Sassi, C., & Tappia, E. (2017). Value creation models in the 3PL industry: what 3PL providers do to cope with shipper requirements. International Journal of Physical Distribution & Logistics Management, 47(6), 472-494.

123. Matlack Leasing (2019). 3PL, 4PL or 5PL logistic services, what's the difference? www.matlackleasing.com/article/3pl-4pl-5pl-logistic-services-whats-difference/. Accessed 1 April 2023.

124. McLaren, P. G., & Durepos, G. (2019). A call to practice context in management and organization studies. Journal of Management Inquiry. https://doi.org/10.1177/1056492619837596

125. McIvor, R. (2009). How the transaction cost and resource-based theories of the firm inform outsourcing evaluation. Journal of Operations Management, 27(1), 45-63.

126. Mentzer, J. T., Min, S., & Michelle Bobbitt, L. (2004). Toward a unified theory of logistics. International Journal of Physical Distribution & Logistics Management, 34(8), 606-627.

127. Min, H. (2013). Examining logistics outsourcing practices in the United States: from the perspectives of third-party logistics service users. Logistics Research, 6, 133-144.

128. Ministry of Industry and Trade. (2023). BÁO CÁO XUẤT NHẬP KHẨU VIỆT NAM 2022. Retrieved from https://trungtamwto.vn/file/22356/bao-cao-xuat-nhap-khau-viet-nam-nam-2022.pdf

129. Mishra, A. R., Rani, P., & Pandey, K. (2022). Fermatean fuzzy CRITIC-EDAS approach for the selection of sustainable third-party reverse logistics providers using improved generalized score function. Journal of Ambient Intelligence and Humanized Computing, 1-17.

130. MOF (2021). Ngành Logistics Trước BƯỚC ngoặt Chuyển đổi SỐ. MOF. Retrieved from https://mof.gov.vn/webcenter/portal/vclvcstc/pages_r/l/chi-tiet-tin?dDocName=MOFUCM196273 (Accessed: 10 October 2024).

131. MOIT. (2020). Vietnam Logistics Report 2019. Retrieved February 20, 2020, from http://gosmartlog.com/wp-content/uploads/2019/12/Bao-cao-logistics-viet-nam-2019.pdf

132. Moeller, S., Fassnacht, M., & Klose, S. (2006). A framework for supplier relationship management (SRM). Journal of Business-to-Business Marketing, 13(4), 3-25.

133. Momme, J., & Hvolby, H. H. (2002). An outsourcing framework: action research in the heavy industry sector. European Journal of Purchasing & Supply Management, 8(4), 185-196.

134. Montgomery, C. A., & Collis, D. (1995). Competing on resources: strategy in the 1990s. Harvard Business Review, 73(4), 118-128.

135. Müller-Seitz, G. (2012). Leadership in Interorganizational Networks: A Literature Review and Suggestions for Future Research. International Journal of Management Reviews, 14(4), 428-443.

136. Murphy, P. R., & Poist, R. F. (2000). Third-party logistics: some user versus provider perspectives. Journal of Business Logistics, 21(1), 121.

137. Musiolik, J., Markard, J., & Hekkert, M. (2012). Networks and network resources in technological innovation systems: Towards a conceptual framework for system building. Technological Forecasting and Social Change, 79(6), 1032-1048.

138. Narkhede, B. E., Raut, R., Gardas, B., Luong, H. T., & Jha, M. (2017). Selection and evaluation of third-party logistics service provider (3PLSP) by using an interpretive ranking process (IRP). Benchmarking: An International Journal, 24(6), 1597-1648.

139. Neeraja, B., Mehta, M., & Chandani, A. (2014). Supply chain and logistics for the present day business. Procedia Economics and Finance, 11, 665-675.

140. Neto, G. C. O., Leite, R. R., Shibao, F. Y., & Lucato, W. C. (2017). Framework to overcome barriers in the implementation of cleaner production in small and medium-sized enterprises: Multiple case studies in Brazil. Journal of Cleaner Production, 142, 50-62.

141. Ngonela, W., Mwaniki, C., & Namusonge, G. (2014). Drivers of logistics outsourcing practices in tea processing firms in Bomet County. IOSR Journal of Economics and Finance, 4(1), 47-57.

142. Niu, B., Zhang, J., & Mu, Z. (2022). IoT-enabled delivery time guarantee in logistics outsourcing and efficiency improvement. International Journal of Production Research, 1–22. https://doi.org/10.1080/00207543.2022.2117868

143. Park, J., Shin, K., Chang, T. W., & Park, J. (2010). An integrative framework for supplier relationship management. Industrial Management & Data Systems, 110(4), 495-515.

144. Penrose, E. (1959). Contributions to the resource-based view of strategic management. Journal of Management Studies, 41(1), 183-191.

145. Pereira, V., & Bamel, U. (2021). Extending the resource and knowledge-based view: A critical analysis into its theoretical evolution and future research directions. Journal of Business Research, 132, 557-570.

146. Peteraf, M. A., & Barney, J. B. (2003). Unraveling the resource-based tangle. Managerial and Decision Economics, 24(4), 309-323.

147. Peterson, J. C., Czajkowski, S., Charlson, M. E., Link, A. R., Wells, M. T., Isen, A. M., ... & Jobe, J. B. (2013). Translating basic behavioral and social science research to clinical application: The EVOLVE mixed methods approach. Journal of Consulting and Clinical Psychology, 81(2), 217.

148. Pham, H. N. (2020). Vietnam's merchandise export in the period from 2011 to 2019 and some recommendations. Financial Magazine. Retrieved March 15, 2020, from http://tapchitaichinh.vn/tai-chinh-kinh-doanh/hoat-dong-xuat-khauhang-hoa-cua-viet-nam-giai-doan-20112019-va-mot-so-dexuat-317341.htm

149. Piepenbrink, A., & Gaur, A. S. (2017). Topic models as a novel approach to identify themes in content analysis. In Academy of Management Proceedings (Vol. 2017, No. 1, p. 11335). Briarcliff Manor, NY 10510: Academy of Management.

150. Prahalad, C. K., & Hamel, G. (1990). The Core Competence of the Corporation. Harvard Business Review, 68(3), 79-91.

151. Prakash, C., & Barua, M. K. (2016). A combined MCDM approach for evaluation and selection of third-party reverse logistics partner for Indian electronics industry. Sustainable Production and Consumption, 7, 66-78.

152. Qureshi, M. N., Kumar, D., & Kumar, P. (2007, December). Selection of potential 3PL services providers using TOPSIS with interval data. In 2007 IEEE International Conference on Industrial Engineering and Engineering Management (pp. 1512-1516). IEEE.

153. Qureshi, M. N., Kumar, D., & Kumar, P. (2008). An integrated model to identify and classify the key criteria and their role in the assessment of 3PL services providers. Asia Pacific Journal of Marketing and Logistics, 20(2), 227-249.

154. Quang, H. T., Sampaio, P., Carvalho, M. S., Fernandes, A. C., An, D. T. B., & Vilhenac, E. (2016). An extensive structural model of supply chain quality management and firm performance. International Journal of Quality & Reliability Management, 33(4), 444-464.

155. Rajesh, R., Ganesh, K., & Pugazhendhi, S. (2013). Drivers for logistics outsourcing and factor analysis for selection of 3PL provider. International Journal of Business Excellence, 6(1), 37-58.

156. Rahman, S., & Jim Wu, Y. C. (2011). Logistics outsourcing in China: the manufacturer-cum-supplier perspective. Supply Chain Management: An International Journal, 16(6), 462-473.

157. Rajesh, R., Pugazhendhi, S., Ganesh, K., Yves, D., Lenny Koh, S. C., & Muralidharan, C. (2011). Perceptions of service providers and customers of key success factors of third-party logistics relationships–an empirical study. International Journal of Logistics Research and Applications, 14(4), 221-250.

158. Roy, J., Pamučar, D., & Kar, S. (2020). Evaluation and selection of third-party logistics provider under sustainability perspectives: An interval-valued fuzzy-rough approach. Annals of Operations Research, 293, 669-714.

159. Rubin, P. H. (1973). The expansion of firms. Journal of Political Economy, 81(4), 936-949.

160. Ryoo, S. Y., & Kim, K. K. (2015). The impact of knowledge complementarities on supply chain performance through knowledge exchange. Expert Systems with Applications, 42(6), 3029-3040.

161. Sahay, B. S., & Mohan, R. (2006). 3PL practices: an Indian perspective. International Journal of Physical Distribution & Logistics Management, 36(9), 666-689.

162. Saunders, M. N. K., Lewis, P., & Thornhill, A. (2019). Research Methods for Business Students. Pearson Higher Ed.

163. Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. Journal of Cleaner Production, 16(15), 1699-1710.

164. Selviaridis, K., & Spring, M. (2007). Third-party logistics: A literature review and research agenda. The International Journal of Logistics Management.

165. Selviaridis, K., & Spring, M. (2010). The dynamics of business service exchanges: Insights from logistics outsourcing. Journal of Purchasing and Supply Management, 16(3), 171-184.

166. Shakeel, R., Sajjad, H., & Ramish, A. (2018). Towards a third-party logistics (3PL) based sustainable supplier relationship management framework. Journal of Quality and Technology Management, 15(2), 1-36.

167. Sharma, G. (2017). Pros and cons of different sampling techniques. International Journal of Applied Research, 3(7), 749-752.

168. Shi, M., & Yu, W. (2013). Supply chain management and financial performance: Literature review and future directions. International Journal of Operations & Production Management, 33(10), 1283-1317.

169. Shou, Y., Shao, J., & Chen, A. (2017). Relational resources and performance of Chinese third-party logistics providers: the mediating role of innovation capability. International Journal of Physical Distribution & Logistics Management, 47(9), 864-883.

170. Sink, H. L., Langley Jr, C. J., & Gibson, B. J. (1996). Buyer observations of the US third-party logistics market. International Journal of Physical Distribution & Logistics Management, 26(3), 38-46.

171. Slattery, E. L., Voelker, C. C., Nussenbaum, B., Rich, J. T., Paniello, R. C., & Neely, J. G. (2011). A practical guide to surveys and questionnaires. Otolaryngology--Head and Neck Surgery, 144(6), 831-837.

172. Spearman, C. (1904). The Proof and Measurement of Association between Two Things. American Journal of Psychology, 15, 72-101.

173. Stefansson, G. (2006). Collaborative logistics management and the role of third-party service providers. International Journal of Physical Distribution & Logistics Management, 36(2), 76-92.

174. Su, Shong-Iee Ivan. (2007). The Emerging Global Direct Distribution Business Model: Industry and Research Opportunities. Transportation Journal, 46(4), 58–65.

175. Suddaby, R. (2006). From the editors: What grounded theory is not. Academy of Management Journal, 49(4), 633-642.

176. Thakkar, J., Deshmukh, S. G., Gupta, A. D., & Shankar, R. (2005, January). Selection of third-party logistics (3PL): a hybrid approach using interpretive structural modeling (ISM) and analytic network process (ANP). In Supply Chain Forum: An International Journal (Vol. 6, No. 1, pp. 32-46). Taylor & Francis.

177. Thi Vien, T. (2022). Opportunities, Challenges and Solutions for Logistics 4.0 Development in Vietnam. In Research Inventy: International Journal of Engineering and Science. Retrieved from https://www.researchinventy.com/papers/v12i6/C12062530.pdf

178. Thuy Duong. (2018, May 25). Chỉ có số ít doanh nghiệp logistics Việt đạt cấp độ 3PL. Tạp Chí Tài Chính. Retrieved from https://tapchitaichinh.vn/chi-co-so-it-doanh-nghiep-logistics-viet-dat-cap-do-3pl.html

179. Tsai, M. C., Liao, C. H., & Han, C. S. (2008). Risk perception on logistics outsourcing of retail chains: model development and empirical verification in Taiwan. Supply Chain Management: An International Journal, 13(6), 415-424.

180. UmaDevi, K., Elango, C., & Rajesh, R. (2012). Vendor selection using AHP. Procedia Engineering, 38, 1946-1949.

181. Valkila, J., Haaparanta, P., & Niemi, N. (2010). Empowering coffee traders? The coffee value chain from Nicaraguan fair trade farmers to Finnish consumers. Journal of Business Ethics, 97(2), 257-270.

182. Vinay, V. P., Kannan, G., & Sasikumar, P. (2009). Conceptual study on 3PL/4PL/new trends for service industry. International Journal of Services Technology and Management, 12(1), 3-22.

183. VIRAC. (2020, July 23). Vietnam Logistics 2019: Challenges and potential of prospective growth. VIRAC. Retrieved from https://viracresearch.com/vietnam-logistics-2019-challenges-and-potential-of-prospective-growth/

184. Vlachos, I. P. (2014). A hierarchical model of the impact of RFID practices on retail supply chain performance. Expert Systems with Applications, 41(1), 5-15.

185. Wan, Q., Yuan, Y., & Lai, F. (2019). Disentangling the driving factors of logistics outsourcing: A configurational perspective. Journal of Enterprise Information Management, 32(6), 964-992.

186. Wang, C. N., Nguyen, N. A. T., Dang, T. T., & Lu, C. M. (2021). A compromised decision-making approach to third-party logistics selection in sustainable supply chain using fuzzy AHP and fuzzy VIKOR methods. Mathematics, 9(8), 886.

187. Wang, Y., & Li-Ying, J. (2015). Licensing foreign technology and the moderating role of local R&D collaboration: Extending the relational view. Journal of Product Innovation Management, 32(6), 997–1013.

188. Wassmer, U., & Dussauge, P. (2011). Value creation in alliance portfolios: The benefits and costs of network resource interdependencies. European Management Review, 8(1), 47-64.

189. Weber, C. A., Current, J. R., & Benton, W. C. (1991). Vendor selection criteria and methods. European Journal of Operational Research, 50(1), 2-18.

190. Wernerfelt, B. (1984). A resource-based view of the firm. Strategic Management Journal, 5(2), 171–180.

191. Wernerfelt, B. (1989). From critical resources to corporate strategy. Journal of General Management, 14(3), 4-12.

192. Wong, C. Y., & Karia, N. (2010). Explaining the competitive advantage of logistics service providers: A resource-based view approach. International Journal of Production Economics, 128(1), 51-67.

193. Wright, S. (1921). Correlation and causation. Journal of Agriculture Research, 20, 557-585.

194. Wright, S. (1934). The method of path coefficients. Annals of Mathematical Statistics, 5, 161-215.

195. Wu, F., Li, H. Z., Chu, L. K., & Sculli, D. (2013). Supplier selection for outsourcing from the perspective of protecting crucial product knowledge. International Journal of Production Research, 51(5), 1508-1519.

196. Yang, C. S., & Lirn, T. C. (2017). Revisiting the resource-based view on logistics performance in the shipping industry. International Journal of Physical Distribution & Logistics Management, 47(9), 884-905.

197. Yayla, A. Y., Oztekin, A., Gumus, A. T., & Gunasekaran, A. (2015). A hybrid data analytic methodology for 3PL transportation provider evaluation using fuzzy multi-criteria decision making. International Journal of Production Research, 53(20), 6097-6113.

198. Yeung, H. W. C., Liu, W., & Dicken, P. (2006). Transnational corporations and network effects of a local manufacturing cluster in mobile telecommunications equipment in China. World Development, 34(3), 520-540.

199. Yeung, K., Zhou, H., Yeung, A. C., & Cheng, T. C. E. (2012). The impact of third-party logistics providers' capabilities on exporters' performance. International Journal of Production Economics, 135(2), 741-753.

200. Yuandi, W., & Jason, L. Y. (2015). Licensing foreign technology and the moderating role of local R&D collaboration. Journal of Product Innovation Management, 32(6), 997–1013.

201. Yusuf, Y. Y., Gunasekaran, A., Musa, A., Dauda, M., El-Berishy, N. M., & Cang, S. (2014). A relational study of supply chain agility, competitiveness, and business performance in the oil and gas industry. International Journal of Production Economics, 147, 531–543.

202. Zailani, S., Shaharudin, M. R., Razmi, K., & Iranmanesh, M. (2017). Influential factors and performance of logistics outsourcing practices: An evidence of Malaysian companies. Review of Managerial Science, 11, 53-93.

203. Zarbakhshnia, N., Govindan, K., Kannan, D., & Goh, M. (2023). Outsourcing logistics operations in circular economy towards sustainable development goals. Business Strategy and the Environment, 32(1), 134-162.

204. Zhu, L., & Cheung, S. O. (2017). Harvesting competitiveness through building organizational innovation capacity. Journal of Management in Engineering, 33(5), 04017020.

205. Zhu, W., Ng, S. C., Wang, Z., & Zhao, X. (2017). The role of outsourcing management process in improving the effectiveness of logistics outsourcing. International Journal of Production Economics, 188, 29–40.

Chapter 2: A structured literature review of logistics outsourcing.

2.1 Abstract

Purpose: The manuscript aims to conduct a structured literature review (SLR) on logistics outsourcing research. It identifies knowledge gaps and suggests future research directions in this field

Design/Methodology: This paper offers a thorough analysis of logistics outsourcing literature, evaluating research timelines, research designs, research journals, and referenced theories. We conducted an extensive search in online databases from 1992 to February 2023 using keywords like "logistics outsourcing," "logistics services," and "logistics providers" in titles and abstracts. After applying specific criteria, we selected 207 articles for analysis. A content analysis was then performed to gain insights into the development of the logistics outsourcing literature.

Findings: There has been a growing interest by scholars over the past 30 years studying about logistics outsourcing. This analysis revealed although scholars employed different theoretical approaches to explore different aspects of logistics outsourcing, the Resource-Based View (RBV) was the theory most frequently used. Nevertheless, it was discovered that only 40% of the articles relied on a theoretical framework. The articles were categorized into five themes: outsourcing strategy, tech in logistics, relationship development, disruption era, and sustainable logistics, with outsourcing strategy as the most frequently studied topics.

Limitations/Implication: The scope of this paper is restricted to an examination of academic articles available in six widely-used databases, which utilize the terms "logistics outsourcing," "logistics services," and "logistics providers" in their titles and/or abstracts. It is important to note that not all academic journal papers were incorporated into this review, and only those published in high-quality, peer-reviewed journals were considered. Furthermore, this study excludes other sources, such as books and conference papers.

Keywords: structured literature review, logistics outsourcing, content analysis

2.2 Introduction

Outsourcing has evolved into a crucial supply chain management strategy in recent decades, offering businesses with significant competitive advantages (Yuan *et al*., 2020). As companies aim to achieve optimal supply chain processes, the importance of logistics providers has grown as they strategically assist businesses through logistical services (Jothimani & Sarmah, 2014). The imperative for competitiveness in the face of intense global competition, escalating customer demands, and ever-expanding supply chains has compelled businesses to outsource their logistics operations to logistics providers (Hsiao *et al*., 2010; Yeung *et al*., 2012). Outsourcing has emerged as a pivotal strategy in modern supply chain management, affording businesses significant competitive advantages (Yuan *et al*., 2020).

Hence, logistics providers have grown greater importance as they strategically support companies in optimizing their supply chain processes (Jothimani & Sarmah, 2014). Driven by fierce global competition, soaring customer demands, and expanding supply chains, companies have turned increasingly to logistics outsourcing (Hsiao *et al*., 2010; Yeung *et al*., 2012). Statistics support this trend, with over 50% of transportation costs and more than 35% of warehouse expenses incurred by shippers tied to outsourcing (Langley and Capgemini, 2015).

Literature on logistics outsourcing, as identified by Marasco (2008) and Selviaridis and Spring (2007), reveals that many companies have adopted third-party logistics (3PL) as a strategy to gain competitive advantage, and this has garnered attention from both practitioners and researchers. Razzaque and Sheng (1998) conducted a comprehensive review of the literature on logistics outsourcing, synthesizing key research findings from academic journals and other sources. Similarly, Skjoett-Larsen *et al*. (2003) provided an overview of 3PL research with a focus on

identifying the distinctive characteristics of the "Nordic School of 3PL" in terms of research methodology, theoretical approaches, or empirical findings. In contrast, Maloni and Carter (2006) conducted a survey-based review of only 45 publications in the 3PL academic literature to evaluate its progress, which does not cover all the existing articles on the subject. Marasco (2008) completed a literature review of 152 papers published in 33 reputable academic journals between 1989 and 2006 and explained the research methods utilized by various scholars. In his study, Akbari (2018) performed a structured literature review of 263 papers and provided a comprehensive descriptive analysis to elucidate the potential future direction of the topic under investigation. Nevertheless, similarly to previous literature reviews by Maloni and Carter (2006) and Marasco (2008), Akbari's analysis was deficient in terms of content analysis with respect to the themes and topics featured in the examined papers. Despite the growing body of literature, there has been limited effort to synthesize the literature's content and identify future trends. To address the need for a more comprehensive understanding of the subject, this article provides a thorough review of the relevant literature and significant research findings on logistics outsourcing. To this end, an exhaustive search of academic journals from 1992 to February 2023 was conducted, resulting in a total of 207 articles being identified and analyzed.

This structured literature review examines logistics outsourcing by synthesizing relevant information including research designs and methodologies, data analysis approaches, different regions, and industry contributions. In addition, information on publishing year, publishers, academic institutions, and content classification is analyzed. This study examines a variety of databases including the terms "logistics outsourcing," "logistics services," and "logistics providers" in their titles and/or abstracts from 1992 to February 2023 and provides a comprehensive overview of logistics outsourcing journal articles. Full bibliographic information

for the 207 reviewed papers is presented in the Appendix 2A to illustrate the research's openness and to provide a comprehensive, impartial evaluation. These published publications were classified and organized according to their respective research approaches. In addition, the papers were analyzed further within a Microsoft Excel database.

Our research aims at answering the following research questions:

1. What is the demography of logistics outsourcing management?
2. How have logistics outsourcing topics evolved over time?
3. What are the potential research directions in the logistics outsourcing context?

The responses to the abovementioned questions will facilitate the formation of a thorough exploration of existing literature and provide direction for future research in this field. In order to accomplish this, the researcher conducted an analysis about the literature on logistics outsourcing, prior to outlining the research methodology and content findings.

2.3 Research Methodology

2.3.1 Prelude to structured literature review.

This structured literature review (SLR) aims to uncover the 'knowns' and 'unknowns' in logistics outsourcing literature. Research necessitates a literature review to address questions, aiding informed decisions (Rousseau *et al*., 2008; Tranfield *et al*., 2003). Fink (1998) and Seuring and Müller (2008) define a literature review as an organized, clear, and reproducible method for studying existing research fields. However, the transformation of literature-based knowledge is often complex due to the evolving world (Nutley & Davies, 2002). As a methodology for analyzing data, identifying gaps, and suggesting future research directions, the structured literature review examines the current literature, revealing gaps in knowledge.

The four principles proposed by Denyer and Tranfield (2009) for evaluating management and organizational studies guided our structured literature review: transparency, inclusiveness, explanatory, and heuristic. In adherence to the transparency principle, the methodology and procedures of the review have been explicitly and transparently outlined (Denyer and Tranfield, 2009). We ensured clarity by articulating all aspects of the review process and analysis, allowing readers to accurately assess the study's scope and limitations.

To fulfill the inclusiveness principle, we established selection criteria and employed a five-step strategy (Akbari, 2018; Ha *et al*., 2022) for journal selection and analysis. This principle demands that the chosen articles align with the study's objectives.

The explanatory principle required us to go beyond mere descriptive reporting (Denyer and Tranfield, 2009), necessitating creative, interpretive, and explanatory syntheses and generalizations, rather than a mere reproducible explanation (Pawson, 2006). To achieve this, we conducted a descriptive analysis of the identified articles, synthesized their findings and limitations, and formulated theories regarding the transformation of logistics outsourcing over the past three decades.

Lastly, the heuristic principle dictated that the review should offer future directions and guidance to enhance the academic contribution to the logistics outsourcing context. We aimed to accomplish this by providing a comprehensive discussion of the key findings and suggesting areas for further research.

2.3.2 Research process

This study employs Akbari's (2018) five-step categorization technique (illustrated in Figure 2.1) for structured literature evaluation. Firstly, it covers a 31-year span from 1992 to February 2023, starting with seminal works about logistics outsourcing like Lieb (1992). Secondly, articles were

sourced from seven major databases: Science Direct, Emerald, Taylor and Francis, Wiley, Springer, Sage, and ProQuest. Supplementary searches on Google Scholar and Scopus ensured data comprehensiveness. Inclusion and exclusion criteria were rigorously applied to select pertinent papers. The inclusion and exclusion criteria play a crucial role in defining the review's scope by identifying studies relevant to the research question. Established criteria enhance transparency, support reproducibility, and streamline the literature selection process (Meline, 2006). This method not only conserves time and resources but also mitigates the risk of overlooking significant studies. At this stage of the selection procedure, the primary objective is to eliminate studies that unambiguously satisfy the exclusion criteria. This is achieved through a systematic review of titles and abstracts, allowing for the efficient removal of sources that are clearly misaligned with the research focus. For instance, studies addressing marketing outsourcing are excluded, as the scope of the present research is confined to logistics outsourcing. The third step entailed keyword searches in titles and/or abstracts of the databases. Differing from Akbari (2018), who used broad terms "logistics" and "outsourcing," we adopted specific search terms like "logistics outsourcing," "logistics services," and "third-party logistics" for precision. In the fourth step, all chosen articles were gathered, categorized, and analyzed in Microsoft Excel to establish a reference database and comprehend the evolution of logistics outsourcing over 31 years. Finally, the fifth step identified research gaps, noteworthy findings, and future directions, providing a theoretical contribution for the field of logistics outsourcing.

2.4 Theoretical background of logistics outsourcing in supply chain

A supply chain is defined as a synchronized system that integrates all business processes from purchasing raw materials from suppliers; to moving through manufacturers, distributors, and retailers then to deliver the finished products to final customers (Mentzer, 2001; Min, 2015).

While the majority of enterprises have already been globalized (Cohen and Russel, 2013), outsourcing is attracting attention as a solution for businesses to handle complex customer satisfaction and competitive advantage concerns (Aktas *et al*., 2011; Konig and Spinler, 2016; Zhu *et al*., 2017). The terms "logistics outsourcing," "logistics providers," and "logistics services" are used interchangeably to describe outsourcing activities ranging from outsourcing single logistics activities, such as transportation, warehouse, or packaging services, to outsourcing an integrated and complex logistics process (Konig and Spinler, 2016). In particular, logistics outsourcing is described as a process that converts business logistics operations to external logistics providers (Govindan *et al*., 2016). Due to the increasing level of worldwide competition and the growing complexity and resilience of supply chains, the significance and benefits of delegating logistics responsibilities to third-party logistics providers (3PLs) are becoming increasingly noteworthy for companies (Aktas *et al*., 2011; Konig and Spinler, 2016). By utilizing logistics service providers (LSPs) (also known as third parties), logistics outsourcing enables host firms to focus on their main business, decrease logistical costs, enhance service standards, and raise customer satisfaction (Baker *et al*. 2021). Due to the efficacy of LSPs, logistics outsourcing may help businesses enhance their operations, hence enhancing shippers' competitiveness (Sinkovics *et al*. 2018). Nowadays, the most frequent non-core company activity that is outsourced is logistics since it liberates up resources and allows businesses to concentrate more on their core strengths (Konig and Spinler, 2016). However, logistics services are resource-intensive in terms of the capital expenditure necessary for the equipment, supporting information technologies, and the development and management of relevant skills, a hardship for many businesses whose primary industry is not logistics-centred.

2.5 Review and discussion

2.5.1 Descriptive analysis

According to our review methodology and format for this article, the review summary is included in this section. To validate and authenticate the sources for the following analysis, the review's findings are displayed in the figures and tables below.

2.5.1.1 Classification by journals

Appendix 2A presents 74 different journal publications about logistics outsourcing studies. Moreover, this Appendix 2A also represents the descending trend of the number of published papers by journals. The journal *International Journal of Physical Distribution and Logistics Management* contributes the highest number of research papers (22). This is followed by *International Journal of Production Economics (16), Transportation Research Part E: Logistics and Transportation Review (11), Benchmarking: An International Journal (9), The International Journal of Logistics Management (9), Journal of Business Logistics (8), Supply Chain Management: An International Journal (8), Expert Systems with Applications (7), Industrial Management & Data Systems (6), International Journal of Logistics Research and Applications (6) and International Journal of Production Research (5).*

2.5.1.2 Classification by year

An examination of the 207 reviewed papers illustrates an upward trend in logistics outsourcing publications (See Figure 2.2). Notably, there was a significant increase with 151 publications within the 2007-2013 period, indicating growing interest among researchers. This heightened interest can be attributed to the expanding role of the internet in service provision (Malviya and Kant, 2015) and the rising demand for outsourcing services by 3PL providers driven by the growth of e-commerce (Wang *et al*., 2012).

Conversely, interest has dropped since 2020, coinciding with a shift in focus towards examining the COVID-19 pandemic's impact on healthcare and food supply chains (Ali *et al*., 2021; Smith, 2020). While the significance of 3PL services remains highlighted in the literature, this decrease in interest suggests a temporary shift of research attention.

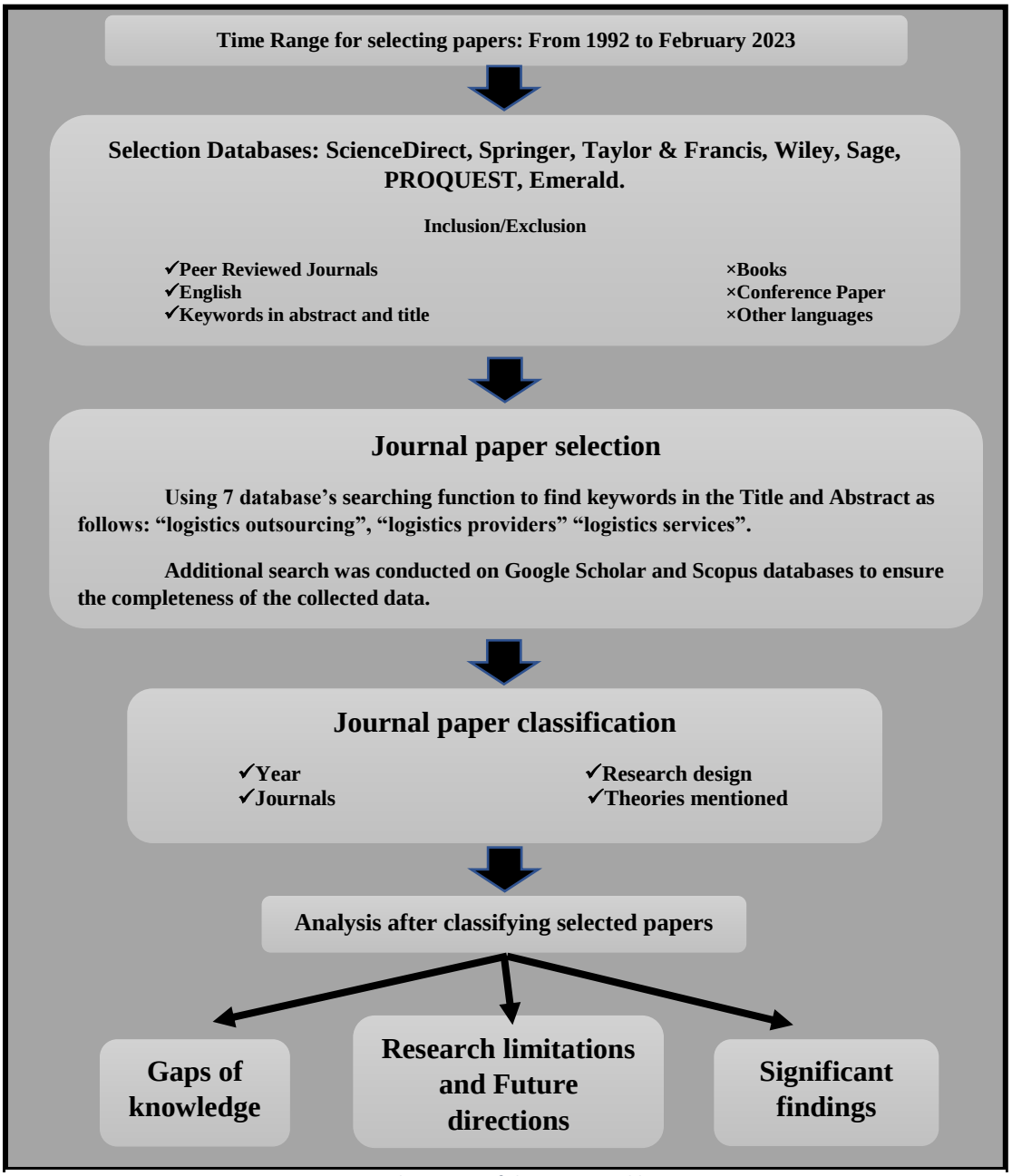

Figure 2.1: Research process of the structured literature review

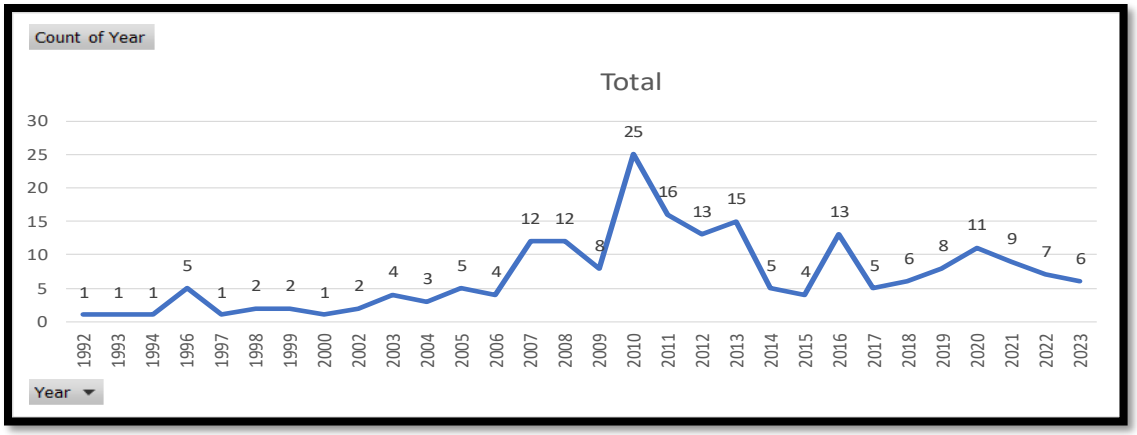

Figure 2.2: Classification of papers by year

2.5.1.3 Classification by theories mentioned in articles

In the total of 207 reviewed papers, there were 24 theories applied in the research including Resource Based view related theory (RBV), Transaction cost economics theory (TCE), Social exchange theory (SET), Resource Dependent theory (RDT), Agency theory (AT), Network theory (NT), and more (See Figure 2.3 and Appendix 2B). Figure 2.3 shows the frequency of each theory used in reviewed papers. The majority of academic papers (27) on the topic of logistics outsourcing have utilized the resource-based view (RBV) theory, followed by transaction cost economics (TCE) and Social Exchange Theory (SET) with 23 and 10 papers, respectively. Meanwhile, Fuzzy Set Theory (FST) and Network Theory (NT) were discussed in seven and six published papers respectively. The remaining theories were utilized infrequently, with their occurrence ranging from one to four papers (See Figure 2.3A).

Some studies have focused on RBV as the primary theory for their empirical research (Hwang and Kim, 2019; Lai *et al*., 2008; Shang, 2009; Liu *et al*., 2011). Figure 2.3B shows the evolution of theories used in the total selected papers, encompassing both single-theory applications and multiple-theory applications in research.

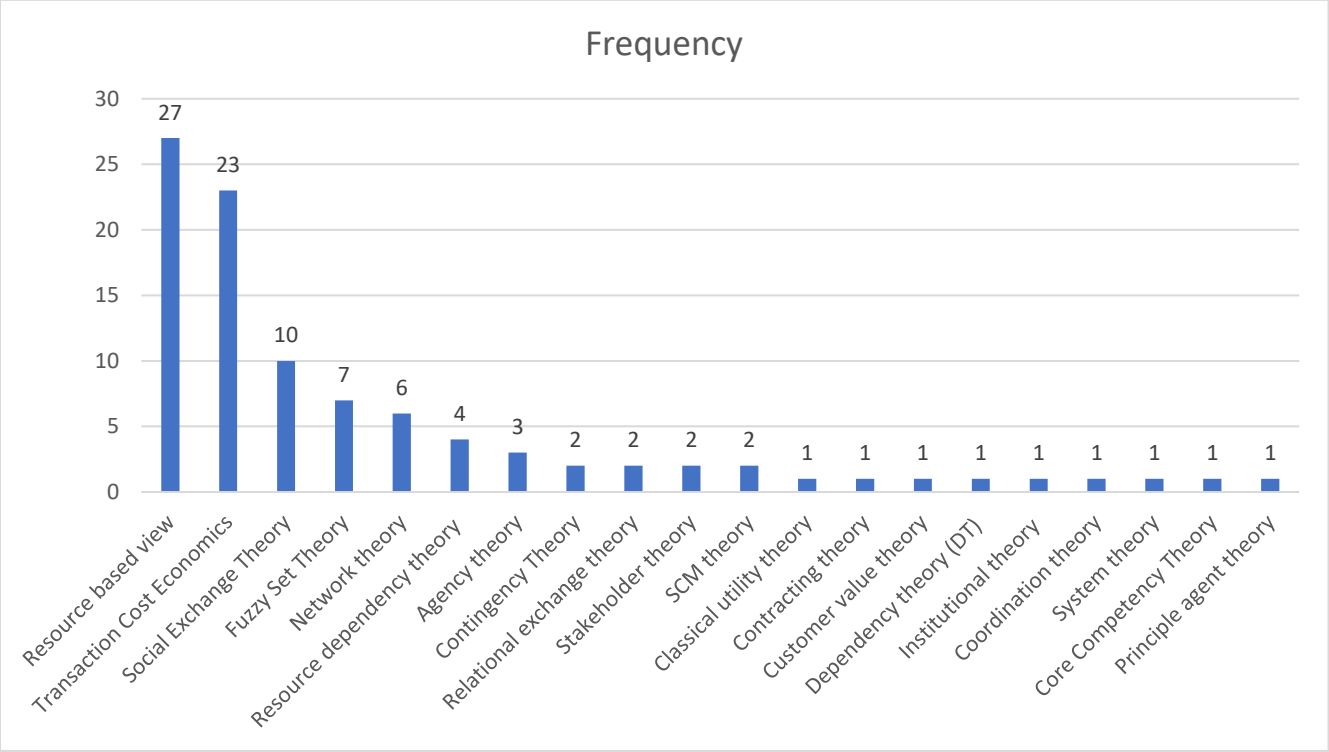

Figure 2.3: Classification of papers by theories (Source: Author's own work)

Count of Theoretical Framework	Column Labels																				
Row Labels	1998	2003	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Grand Total
Agency theory	1																		1		2
Agency Theory, Network theory																				1	1
Classical utility theory				1																	1
Contingency Theory							2												1		3
Contracting theory							1														1
Customer value theory							1														1
Dependency theory (DT) and Network Theory														1							1
Expectancy-disconfirmation (E/D) theory							1														1
Fuzzy Set Theory						2			1				1		1			1	1		7
Institutional theory and Transaction Cost Economics																1					1
Network theory							1			1			1								3
Organizational information processing theory (OIPT)												1									1
Relational exchange theory								1					1								2
Resource based view		1	1		1	1	5	2	1	2			1	1	2	1					19
Resource based view and coordination theory																		1			1
Resource based view and System theory																		1			1
Resource based view and Transaction Cost Economics																		1			1
Resource based view, Core comptency, Principle agent theory													1								1
Resource dependency theory										1		1					1				3
Social Exchange Theory						2	2	1	1				1				1				8
Social exchange theory and Transaction Cost Economics, Resource based view														1							1
Stakeholder theory															1						1
Stakeholder theory, cumulative prospect theory (CPT)																			1		1
Transaction Cost Economics							1	1	2		1		1	1		1		1		1	10
Transaction Cost Economics and social exchange theory					1																1
Transaction Cost Economics and Resource based view					1		1			1	1										4
Transaction cost economics and resource dependence theory									1												1
Transaction Cost Economics, Network theory										1											1
Transaction Cost Economics, Resource based view and SCM theory								1													1
Transaction Cost Economics, SCM theory, Resource based view																1					1
Transaction cost, resource-based and supply chain management theory							1														1
Western-derived theory					1																1
Grand Total	1	1	1	1	4	5	16	6	6	6	2	2	7	4	4	4	2	5	4	2	83

Figure 2.4: Classification of papers by theories from 1998 to 2023 (Source: Author's own work)

2.5.1.4 Classification by research design

The reviewed papers were classified into five research designs including (1) desk qualitative (e.g. conceptual modellings, developing theories), (2) empirical qualitative (e.g. case study, interviews, focus group, etc.), (3) desk quantitative (e.g. mathematical modellings, descriptive analysis), (4) empirical quantitative (e.g. surveys) and (5) empirical triangulation research (e.g. mixed). Figure 2.4 shows that most reviewed papers are empirical quantitative research, with 124 papers (60%); followed by desk quantitative research (33, 16%), empirical qualitative research (25, 12%), desk qualitative (22, 11%) and empirical triangulation research (3, 1%). Appendix 2C and Figure 2.4 shows the distribution of papers by research design in the studying period.

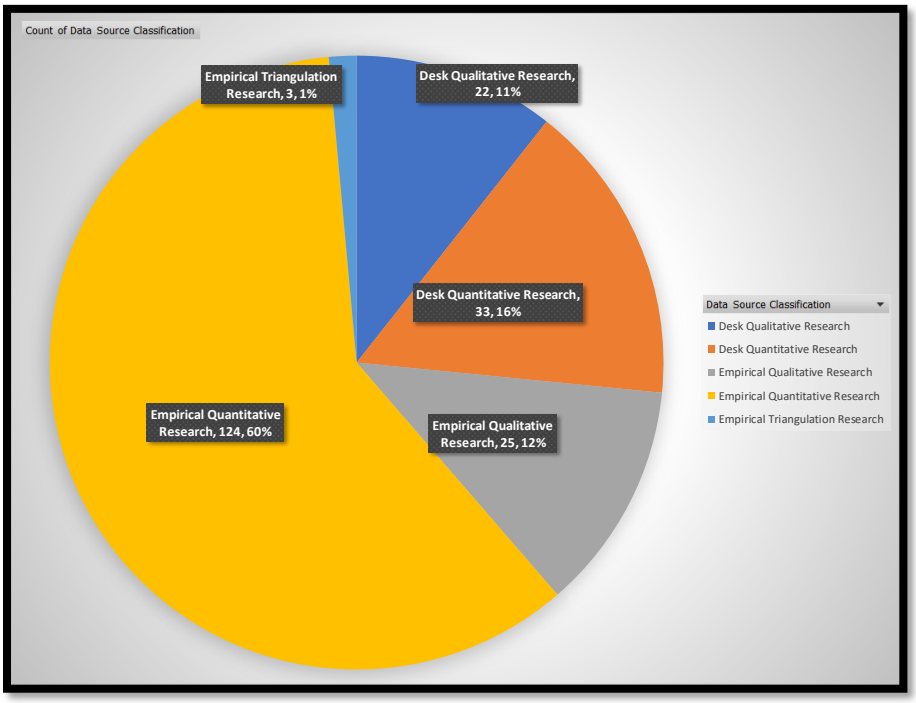

Figure 2.5: Classification of papers by research design (Source: Author's own work)

2.5.2 Content classification scheme

To provide a thorough analysis within the literature review, the content in reviewed papers was categorized by logistics outsourcing topics, including advanced logistics technology, disruption

era, outsourcing strategy, relationship management and sustainability. Classification by logistics outsourcing's topics

Following a content analysis of 207 papers that were evaluated within the context of logistics outsourcing, six topics were discovered and grouped into distinct categories: outsourcing strategy, management of relationships, utilization of advanced technology in logistics outsourcing, sustainable logistics outsourcing, and logistics outsourcing during times of disruption (See Table 2.1).

Table 2.1:Reviewed paper classification by topics

Count of Topic	Column Labels																																
Row Labels	1992	1993	1994	1996	1997	1998	1999	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Grand
Advanced Logistics Technology														1						1							1		2	2	7
Disruption era																												2	1		3
Outsourcing Strategy	1	1	1	4	1	1	2		2	4	2	5	4	12	10	6	20	8	10	12	4	2	10	5	6	5	6	4		3	151
Relationship Management				1		1		1			1	1	1	1	2	2	5	8	3	3	1	2	3			2	1	1	1	1	42
Sustainability														1		1	2	2					2		1	1	3	2	3	1	19
Grand Total	**1**	**1**	**1**	**5**	**1**	**2**	**2**	**1**	**2**	**4**	**3**	**6**	**5**	**15**	**12**	**9**	**27**	**18**	**13**	**16**	**5**	**4**	**15**	**5**	**7**	**8**	**11**	**9**	**7**	**7**	**222**

2.5.2.1 Outsourcing Strategy

A total of 144 research papers were identified in the area of outsourcing strategy, becoming the most popular topic in the total reviewed papers. The main sub-topics covered in the literature include the benefits of logistics outsourcing, the utilization of multiple-criteria decision-making (MCDM) analysis for selection and evaluation, challenges associated with outsourcing, and performance enhancement (See Figure 2.6).

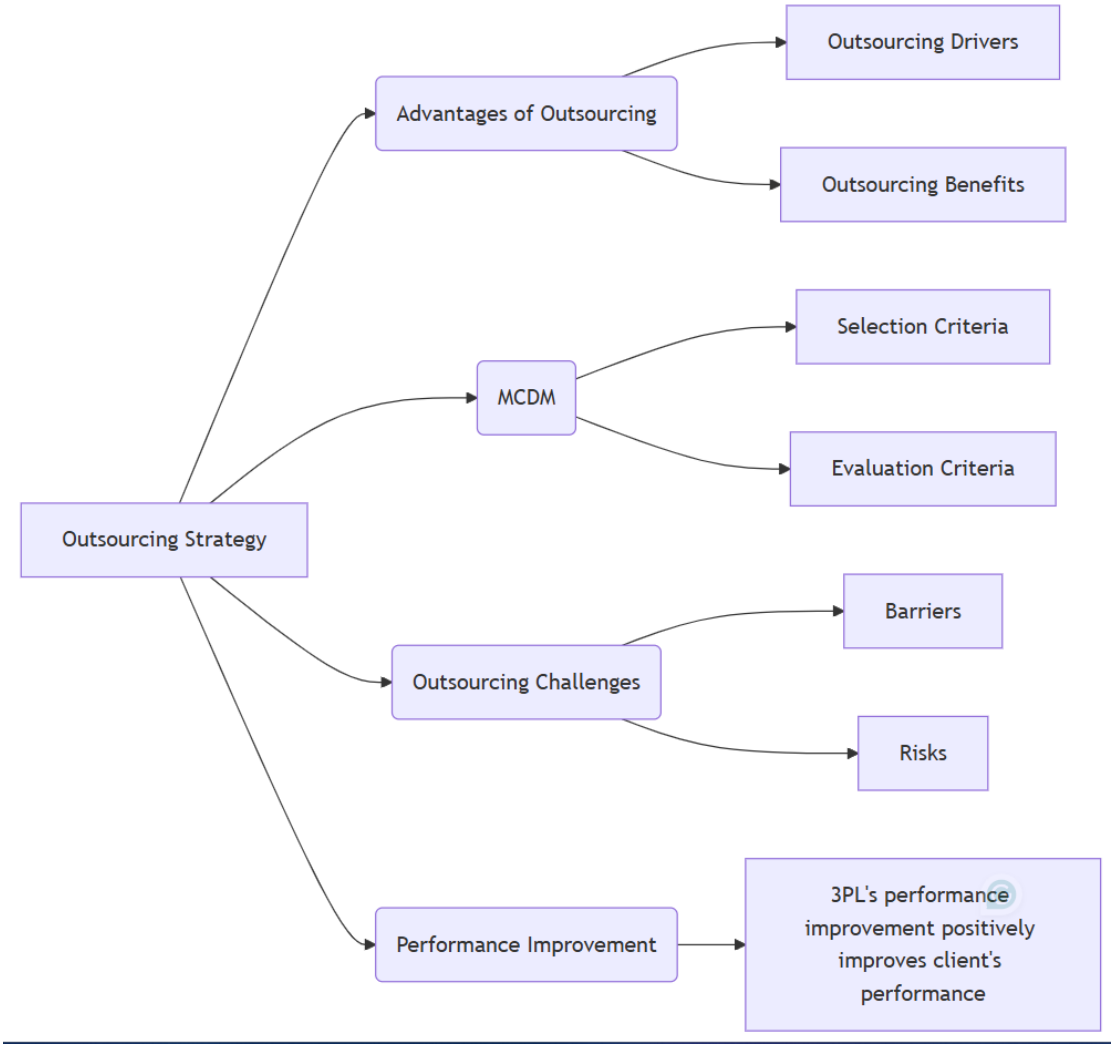

Figure 2.6: A content analysis of the topic regarding outsourcing strategy. Source: Author's own work

In terms of the benefits of outsourcing, Solakivi *et al.*'s (2013) survey of 299 Finnish manufacturing and trading firms examined logistics outsourcing benefits. Their study highlighted cost savings, flexibility, and customer service as primary drivers. Additionally, a correlation between outsourcing and lower logistics costs was identified, showing reduced costs for companies with higher outsourcing levels (Solakivi *et al.*, 2013). Liu et al. (2015) posited that network-related resources derived from logistics outsourcing facilitate firms in accruing advantages such as enhanced information sharing and improved process coordination.

Regarding outsourcing challenges, Diabat *et al*. (2013) used interpretive structural modeling (ISM) to analyze barriers in implementing 3PL in manufacturing. They identified five barrier levels: 1) ineffective management, 2) issues like limited access to specialized storage facilities and complex tax frameworks, 3) congested transportation networks and ports, 4) limited use of advanced IT, and 5) shortage of skilled 3PL personnel and internal staff resistance (Diabat *et al*., 2013).

Meanwhile, performance management in outsourcing is primarily studied from the logistics providers' perspective. Shang (2009) investigated performance management in logistics service users, analyzing 1011 forwarder-based third-party logistics providers in Taiwan. SEM was used to explore relationships between integration capability, organizational learning capability, service performance, and financial performance, revealing positive correlations. Additionally, Lai *et al*. (2008) employed the Resource-Based View (RBV) framework to investigate IT capability in 3PL providers' performance. The findings highlighted that IT capability significantly enhances competitive advantages in cost reduction, innovative services, and service excellence for both 3PL providers and their clients

2.5.2.2 Relationship Management

In relationship development, 39 academic papers were selected, ranking as the second most prevalent topic. The primary sub-topics addressed within this body of work encompass information sharing, trust, and loyalty and commitment. The content analysis reveals an interrelation between these three sub-topics, coalescing to examine the establishment of sustainable relationships in the realm of logistics outsourcing. (See Figure 2.7).

Chu and Wang (2012) employed Transaction Cost Economics (TCE) and Resource Dependence Theory (RDT) to explore relationship quality determinants and its impact on Chinese firms' operational efficacy. Findings showed a positive effectiveness between relationship quality,

logistics performance, and information sharing. Also, a positive connection was noted with relationship duration and contractual agreements. Relationship quality positively impacted on financial performance (Chu and Wang, 2012). Additionally, Liu et al. (2015) asserted that integrative mechanisms (e.g. process integration) foster partnerships, which subsequently generate network-related resources capable of delivering long-term benefits to both parties involved.

In contrast, Wallenburg *et al*. (2010) found the relationship between logistics performance and loyalty behavior in the US and Germany that surpassing goals by logistics providers influenced loyalty aspects including retention, referrals, and extension. This revealed that cultures with high uncertainty avoidance, like Germany, favor regulations and formalizing procedures. In contrast, cultures with low uncertainty avoidance, such as the US, place less importance on rules (Wallenburg *et al*., 2010).

2.5.2.3 Utilization of advanced technology

Within the topic of advanced technology adoption, a total of seven scholarly works was uncovered. The major sub-topics explored in these publications revolve around various technological tools deployed in logistics outsourcing, such as artificial intelligence (AI), big data, blockchain, and information and communication technology (ICT) (See Figure 2.8).

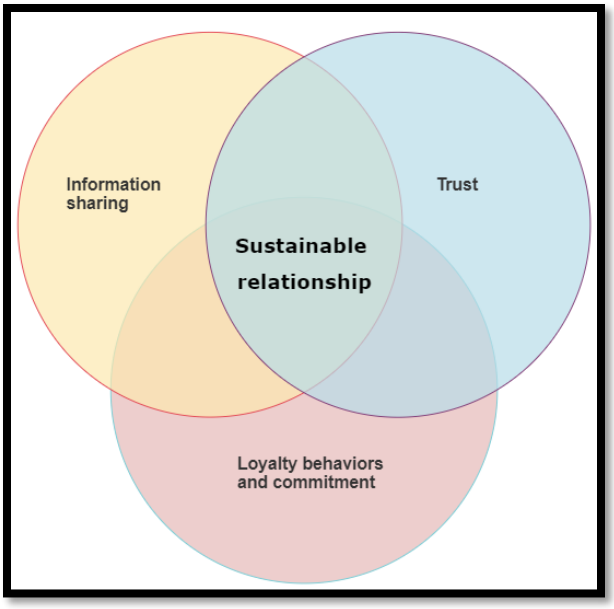

Figure 2.7: A content analysis of the topic regarding relationship development. Source: Author's own work

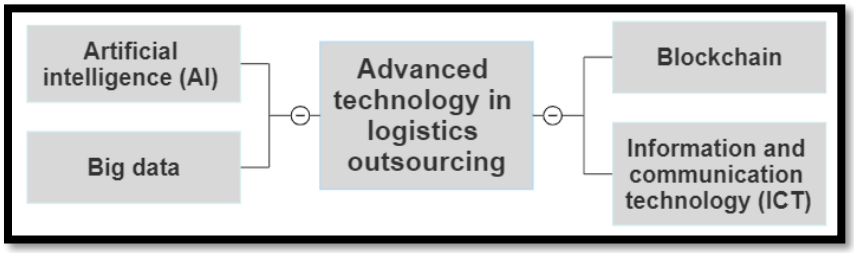

Figure 2.8: A content analysis of the topic utilization of advanced technology in logistics outsourcing. Source: Author's own work

Tiwari *et al*. (2023) examined hurdles in 3PL and the potential of Blockchain technology (BCT) for enhancing supply chain transparency. They emphasized how BCT can address cybersecurity and data quality issues, especially in cross-border transactions within 3PL's global supply chain network. On the contrary, Evangelista *et al.* (2013) identified challenges faced by small and medium-sized 3PLs when adopting information and communication technology (ICT) due to workforce technology skill gaps.

Sun and Shi (2022) discussed the utilization of data mining technology for precise management expense projections with big data. Ren *et al.* (2020) explored the role of artificial intelligence in

forwarding logistics operations for cross-border e-commerce, highlighting deep learning's advantages in inventory optimization and demand forecasting (Tiwari *et al.*, 2023; Evangelista *et al*., 2013; Sun and Shi, 2022; Ren *et al*., 2020).

2.5.2.4 Sustainable logistics outsourcing

Regarding sustainable logistics outsourcing, a notable fraction of the literature examined comprises 24 scholarly works. These publications primarily focus on selecting and evaluating reverse logistics providers.

Prakash *et al*. (2016) identified the primary selection criteria used for third-party reverse logistics partners in the Indian electronics industry. These criteria were determined to be reverse logistics operation, service delivery, and resource capacity. Laguir *et al*. (2021) implemented a study on 232 French third-party logistics (3PL) companies to examine the influence of proactive environmental initiatives on environmental performance. The study findings indicate that eco-efficiency and eco-branding orientations are positively effective with environmental performance through the three critical environmental activities: distribution and transport, warehousing and ecological buildings, and reverse logistics. Unlike the majority of literature related to the impact of the environment on the process of supplier selection in companies, Wolf *et al*. (2010) conducted research that considered the viewpoints of both logistics service users and providers. As a result, the authors found that environmental concerns do not significantly impact purchasing decisions, which are still primarily based on price, quality, and timely delivery criteria.

2.5.2.5 Logistics outsourcing during times of disruption

Within the topic of logistics outsourcing during times of disruption, three studies were uncovered from the reviewed literature. The focused topics of these publications revolve around the negative impacts of Covid-19 on logistics providers and the company’s procedures in selecting 3PL during the pandemic.

Gultekin *et al*. (2022) empirically investigated the COVID-19 pandemic's impact on logistics service providers. They combined thematic analysis and the fuzzy Decision-Making Trial and Evaluation Laboratory (DEMATEL) to uncover risks and uncertainties. Interviews with logistics service providers revealed critical uncertainties like COVID-19 indicators, employee welfare, fluctuating demand, and government regulations. Risks included COVID-19 hazards, delivery delays, supply chain disruptions, financial failure, and product return rates. The fuzzy DEMATEL identified staff well-being as the most affected element, emphasizing human factors as the primary threat to logistics providers. This study suggested that supply chain disruptions and demand shifts, both stemming from the pandemic, influenced financial instability and forecast variability.

Herold *et al*. (2021) globally studied how LSP manage supply chain resilience during the pandemic. They identified five key themes: creating additional revenue streams, enhancing transportation flexibility, strengthening digitalization and data management, optimizing logistics infrastructure, and improving personnel capacity. These themes formed the basis of LSP resilience, enabling supply chains to endure high-impact, low-probability external shocks such as the COVID-19 outbreak (Gultekin *et al*., 2022; Herold *et al*., 2021).

2.6 Discussion, research gaps and future directions.

The most employed methodology was empirical quantitative, used in 124 papers, constituting 60% of the total. Despite its popularity for establishing clear relationships in logistics outsourcing, there are rooms for more qualitative research to explore "how and why" questions, especially related to emerging Industry 4.0 technologies, and the influence of macro-level factors like the Covid-19 pandemic or the Ukraine-Russia conflict on the logistics industry.

The findings further indicate the prevalent application of RBV theory across outsourcing strategy, relationship management, and sustainability topics. While an alternate form of RBV, such as the

Extended Resource-Based View (ERBV), is occasionally referenced, there is a notable lack of discussion on the application of network resources within ERBV, particularly concerning inter-firm alliances in logistics outsourcing. Only one study, by Yuan et al. (2019), explored the influence of transaction factors on logistics performance using a multi-theoretical approach, incorporating RBV, ERBV, and Transaction Cost Theory (TCT). However, this work leaves unclear the role of network resources and their influence on supply chain performance within the interactions between LSPs and LSUs. Hence, studying the influence of network resources on supply chain performance from an ERBV perspective is particularly intriguing, as it could uncover how these various shapes of network resources drive competitive advantage within the collaborative dynamics between LSPs and LSUs, an area still insufficiently explored. Network resources, introduced by Lavie (2006), highlight the importance of tangible and intangible resources in partnerships, offering potential benefits from resource sharing. Although network resources were indirectly addressed in several studies (Chu & Wang, 2012; Lai et al., 2013; Liu et al., 2015), the questions "How do network resources improve supply chain performance?" and "How do companies acquire network resources?" remain underexplored. This gap provides a future direction to explore inter-firm dynamics, including logistics users and providers or among logistics providers themselves, in the context of logistics outsourcing. Such investigations can enlighten the complexities of resource interactions and provide valuable insights for both academia and the industry.

Regarding content classification, there are rooms exists for further research in logistics outsourcing. To provide a thorough analysis within the literature review, the content in reviewed papers was categorized by logistics outsourcing topics, including advanced logistics technology, the disruption era, outsourcing strategy, relationship management, and sustainability. Figure 2.9

shows that although there is a decreasing trend after reaching its peak in 2010, outsourcing strategy is the most popular topic and is frequently studied in the period. Following that are the topics of relationship management and sustainability. The studies of advanced logistics technology start in 2013, reflecting the onset of Industry 4.0 in late 2012 (Rojiko, 2017). Meanwhile, the delayed start of studies regarding disruptive events in 2021 reflects the impact of COVID-19 on logistics outsourcing. In addition to the prominent focus on 'outsourcing strategy,' it is crucial to explore the remaining four topics in alignment with the aforementioned need for a qualitative methodology.Regarding outsourcing strategy, which is also known as the most popular topic in logistics outsourcing, there is room for future research to explore. While many studies discuss logistics outsourcing activities, they do not study into the extent of logistics services in different scenarios, such as specific logistics services for e-commerce or omni-channel operations. Therefore, future studies can investigate the differences in logistics service usage and the competitive advantages gained between an omni-channel and a brick-and-mortar model.

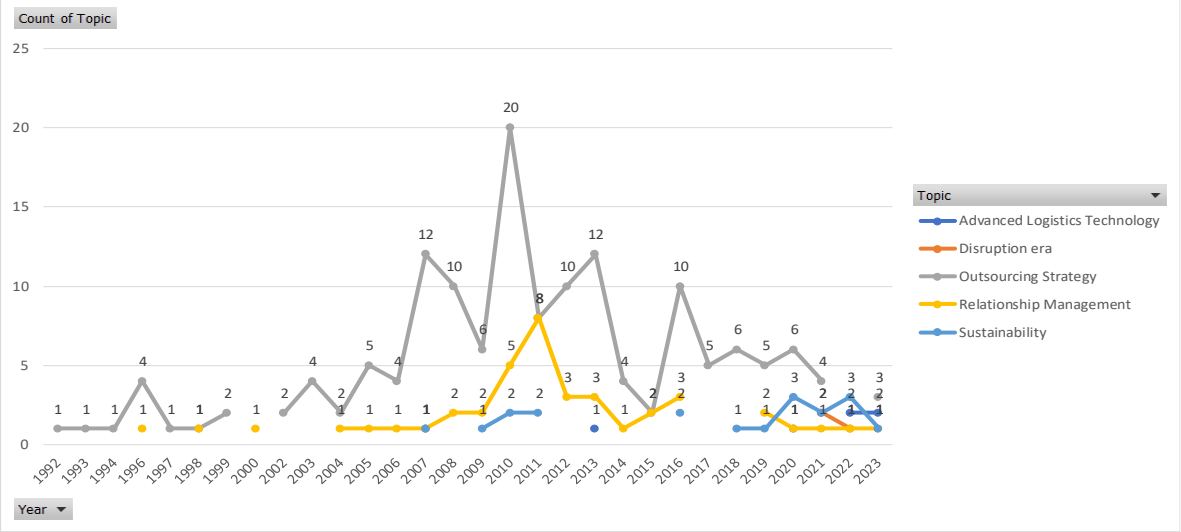

Figure 2.9: The evolution of topics by year

Although the logistics research community has long focused on disruptive events like supply chain turbulence, recent unforeseen global incidents extend beyond COVID-19, such as the Russian

invasion, prompting researchers to broaden their scopes. Recent studies (Gultekin *et al*., 2022) suggest that logistics outsourcing research should study various forms of turbulence affecting services. With such disruptive events, logistics scholars increasingly aim to understand their implications and develop strategies to mitigate them (See Fig 2.8).

Furthermore, while some papers compare logistics outsourcing between countries (Millli *et al*., 1997; Arroyo *et al*., 2006, Hilletofth *et al*., 2010, Wallenburg *et al*., 2010), most research scopes remain focused nationally rather than internationally. One example is the conflict between Russia and Ukraine, which has impacted crucial rail links from Vietnam to Europe, passing through China. Concerns about border disruptions have caused several businesses to suspend rail freight to Europe via China and Russia. Additionally, maritime transportation now necessitates the redirection of supplies away from Russia and Belarus, but alternative routes are already experiencing significant delays, according to a report from Vietnam Briefing (2022). Logistics providers' susceptibility to disruptive incidents, especially when outsourcing decisions affect supply chain performance, remains a concern. Research on frameworks to flexibly adopt new outsourcing procedures and to conduct client selection criteria, can enhance agility and resilience during turbulent events like the Ukraine invasion, COVID-19, or the US-China trade war. Future studies can explore how such events influence selection and evaluation criteria in logistics outsourcing and company supply chain performance.

In the last 30 years, scholarly discussions have primarily revolved around Industry 4.0, emphasizing advanced technologies like blockchain, AI, IoT, and big data. However, there's a noticeable gap in scholarly discourse concerning the implementation of other Industry 4.0 technologies within logistics outsourcing. In contrast to Akbari's earlier review (2018), this paper introduces fresh insights into the advancement and adoption of Industry 4.0 technologies by clients

and logistics service providers. Our study reveals that discussions around logistics outsourcing mainly center on information communication technology (Evangelista et al., 2013), blockchain (Tiwari et al., 2023; Dong et al., 2023; Zhang et al., 2023), big data (Sun et al., 2022), and AI (Ren et al., 2020). As a result, future scholars should explore the key factors research gap concerning the application of emerging Industry 4.0 technologies within the context of logistics outsourcing. Further investigation is warranted to explore the potential benefits and challenges associated with their implementation. Future research could examine how these technologies (e.g. AI, Blockchain, etc.) are adopted in practice by both logistics service users and providers, with a particular focus on their role in achieving competitive advantage.

2.7 Conclusion, limitations and Implications

This paper contributes to the current literature by summarizing research on logistics outsourcing services from 1991 to February 2023. Our analysis of 207 papers from six databases provides insights into the research demographics. Notably, the International Journal of Physical Distribution & Logistics Management was a preferred journal for previous authors. Empirical quantitative methods, surveys, and SEM were frequently employed research design, data collection, and analysis techniques, respectively. Geographically, China, the US, Taiwan, and India featured prominently as studied regions. Although various theories have been employed, with RBV being the most common, only 40% (83 papers) of the articles employed a theoretical framework. To explain, from 1991 to 2008, only eight published papers on logistics outsourcing incorporated foundational theories, indicating that the inclusion of such theories was not a crucial requirement for publication during this period. Additionally, some papers utilizing descriptive analysis did not use foundational theories in their research, implying that these theories were not considered essential for their findings.

The content analysis was presented to address our second and third research questions by examining 207 papers. We identified five distinct topics: outsourcing strategy, advanced technology in logistics outsourcing, relationship development, the disruption era, and sustainable logistics outsourcing, each with its respective sub-topics. While outsourcing and relationship development have gained popularity, other topics received limited attention in the last 30 years, with only 30 papers addressing them. Contrary to previous recommendations by Akbari (2018) and Aguezzeoul (2014) regarding the popularity of the use of AI in logistics outsourcing, this study reveals a research gap in other Industry 4.0 technologies like IoT, Blockchain, and Big Data. Scholars should explore these tools' potential in logistics outsourcing. As a result, future scholars should explore the key factors influencing the adoption of IoT, Blockchain, and Big Data in logistics outsourcing. This includes examining technological, organizational, and environmental challenges within the logistics outsourcing context to identify barriers and enablers of successful implementation. This finding contributes to a deeper understanding of the diverse characteristics of network resources, particularly in relation to technological resources, which will be further examined in Chapters 3 and 4 of the thesis.

Grey (2020) discussed the impact of Covid-19-induced container shortages on transportation. However, there's a lack of research on the effects of disruptive events on logistics outsourcing, especially in transportation services. Future studies must focus on assessing the influence of tumultuous events (e.g., Covid-19, the Ukraine invasion, China-USA conflicts) in logistics outsourcing.

2.7.1 Theoretical implication

Regarding theoretical contributions, this paper presents the evolution of the logistics outsourcing industry and identifies potential research gaps that require further exploration. It expands upon the findings of previous authors, who primarily focused on the perspective of LSPs (Skjoett-Larsen *et*

al., 2003; Selviaridis and Spring, 2007; Marasco, 2008), or omitted the content analysis of logistics outsourcing (Reza, 2018). Additionally, this research updates the literature on logistics outsourcing in the new age of Industry 4.0 and the disruptive era of tumultuous events, such as the COVID-19 outbreak and the invasion of Ukraine.

2.7.2 Managerial implications

In terms of practical implications, the objective of this paper is to facilitate productive discourse among logistics professionals, experts, and managers. The paper aims to explore how logistics services can be revolutionized by a range of factors, such as Industry 4.0 technology, the complexities of triadic relationships in E-commerce, and the influence of disruptive events, such as the COVID-19 pandemic, in order to enhance work quality. Moreover, this inquiry provides a comprehensive understanding of the existing research on technology in logistics outsourcing literature. Hence, it has the potential to make significant contributions to the advancement of scientific research in this field.

2.7.3 Limitations

Similar to any other study, our research also has certain limitations that warrant further investigation in future in-depth studies. For instance, relying solely on six popular databases, and not all academic journal papers were included. Therefore, a more comprehensive analysis could be conducted on individual and holistic databases, such as IEEE, and Web of Science, with a particular emphasis on logistics outsourcing. Furthermore, using general search terms such as "logistics outsourcing" OR "logistics services" AND "logistics providers" may have omitted interesting studies from our analysis. Despite analyzing 207 peer-reviewed scientific papers, our study did not incorporate viewpoints from other relevant knowledge sources such as conference proceedings papers, which could provide valuable insights for future researchers.

2.8 References of reviewed papers

1. Afum, E., Agyabeng-Mensah, Y., Acquah, I. S. K., Baah, C., Dacosta, E., Owusu, C. S., & Amponsah Owusu, J. (2021). Examining the links between logistics outsourcing, company competitiveness and selected performances: the evidence from an emerging country. International Journal of Logistics Management, 32(3). https://doi.org/10.1108/IJLM-05-2020-0205

2. Aghazadeh, S. M. (2003). How to choose an effective third party logistics provider. Management Research News, 26(7). https://doi.org/10.1108/01409170310783583

3. Agrawal, S., & Singh, R. K. (2020). Outsourcing and reverse supply chain performance: a triple bottom line approach. Benchmarking, 28(4). https://doi.org/10.1108/BIJ-09-2020-0498

4. Aguezzoul, A. (2014). Third-party logistics selection problem: A literature review on criteria and methods. In Omega (United Kingdom) (Vol. 49). https://doi.org/10.1016/j.omega.2014.05.009

5. Ahn, W. C., Ishii, S., & Ahn, S. B. (2013). A comparative study of Korean and Japanese logistics industries' market structures: Focusing on subsidiary and third-party logistics companies. Asian Journal of Shipping and Logistics, 29(3). https://doi.org/10.1016/j.ajsl.2013.12.004

6. Aktas, E., & Ulengin, F. (2005). Outsourcing logistics activities in Turkey. Journal of Enterprise Information Management, 18(3). https://doi.org/10.1108/17410390510591996

7. Akter, N., Chhetri, P., & Rahman, S. (2019). Understanding the usage patterns, practices and decision process of third party logistics outsourcing in Bangladesh. Journal of Global Operations and Strategic Sourcing, 12(3). https://doi.org/10.1108/JGOSS-08-2018-0027

8. Ali, A., Cao, M., Allen, J., Liu, Q., Ling, Y., & Cheng, L. (2023). Investigation of the drivers of logistics outsourcing in the United Kingdom's pharmaceutical manufacturing industry. Multimodal Transportation, 2(1), 100064.

9. Alkhatib, S. F. (2017). Strategic logistics outsourcing: upstream-downstream supply chain comparison. Journal of Global Operations and Strategic Sourcing, 10(3). https://doi.org/10.1108/JGOSS-08-2016-0024

10. Ameknassi, L., Aït-Kadi, D., & Rezg, N. (2016). Integration of logistics outsourcing decisions in a green supply chain design: A stochastic multi-objective multi-period multi-product programming model. International Journal of Production Economics, 182. https://doi.org/10.1016/j.ijpe.2016.08.031

11. Arroyo, P., Gaytan, J., & De Boer, L. (2006). A survey of third party logistics in Mexico and a comparison with reports on Europe and USA. International Journal of Operations and Production Management, 26(6). https://doi.org/10.1108/01443570610666984

12. Arun, K., & Yildirim Ozmutlu, S. (2022). Narratives of environmental munificence of 3PL firms on the relationship between dynamic capabilities, strategic management and organizational performance. Journal of Strategy and Management, 15(1). https://doi.org/10.1108/JSMA-01-2021-0019

13. Azadi, M., & Saen, R. F. (2011). A new chance-constrained data envelopment analysis for selecting third-party reverse logistics providers in the existence of dual-role factors. Expert Systems with Applications, 38(10). https://doi.org/10.1016/j.eswa.2011.04.001

14. Azzi, A., Persona, A., Sgarbossa, F., & Bonin, M. (2013). Drug inventory management and distribution: outsourcing logistics to third‐party providers. Strategic Outsourcing: An International Journal, 6(1). https://doi.org/10.1108/17538291311316063

15. Bajec, P. (2013). The possibility of developing intelligent logistics outsourcing in Slovenia. Transport, 28(3). https://doi.org/10.3846/16484142.2013.829520

16. Banomyong, R., & Supatn, N. (2011). Selecting logistics providers in Thailand: A shippers' perspective. European Journal of Marketing, 45(3). https://doi.org/10.1108/03090561111107258

17. Berglund, M., Van Laarhoven, P., Sharman, G., & Wandel, S. (1999). Third-Party Logistics: Is There a Future? The International Journal of Logistics Management, 10(1). https://doi.org/10.1108/09574099910805932

18. Bhatnagar, R., Sohal, A. S., & Millen, R. (1999). Third party logistics services: A Singapore perspective. International Journal of Physical Distribution & Logistics Management, 29(9). https://doi.org/10.1108/09600039910287529

19. Bhatnagar, R., & Viswanathan, S. (2000). Re-engineering global supply chains: Alliances between manufacturing firms and global logistics services providers. International Journal of Physical Distribution & Logistics Management, 30(1). https://doi.org/10.1108/09600030010307966

20. Bottani, E., & Rizzi, A. (2006). A fuzzy TOPSIS methodology to support outsourcing of logistics services. Supply Chain Management, 11(4). https://doi.org/10.1108/13598540610671743

21. Briggs, E., Landry, T. D., & Daugherty, P. J. (2010). Investigating the influence of velocity performance on satisfaction with third party logistics service. Industrial Marketing Management, 39(4). https://doi.org/10.1016/j.indmarman.2009.06.004

22. Buldeo Rai, H., Verlinde, S., Macharis, C., Schoutteet, P., & Vanhaverbeke, L. (2019). Logistics outsourcing in omnichannel retail: State of practice and service recommendations. International Journal of Physical Distribution and Logistics Management, 49(3). https://doi.org/10.1108/IJPDLM-02-2018-0092

23. Cai, X., Chen, J., Xiao, Y., Xu, X., & Yu, G. (2013). Fresh-product supply chain management with logistics outsourcing. Omega (United Kingdom), 41(4). https://doi.org/10.1016/j.omega.2012.09.004

24. Chen, L., Duan, D., Mishra, A. R., & Alrasheedi, M. (2022). Sustainable third-party reverse logistics provider selection to promote circular economy using new uncertain interval-valued intuitionistic fuzzy-projection model. Journal of Enterprise Information Management, 35(4–5). https://doi.org/10.1108/JEIM-02-2021-0066

25. Chen, Y. M., Goan, M. J., & Huang, P. N. (2011). Selection process in logistics outsourcing - A view from third party logistics provider. Production Planning and Control, 22(3). https://doi.org/10.1080/09537287.2010.498611

26. Chen, H., Tian, Y., Ellinger, A. E., & Daugherty, P. J. (2010). MANAGING LOGISTICS OUTSOURCING RELATIONSHIPS: AN EMPIRICAL INVESTIGATION IN CHINA. Journal of Business Logistics, 31(2). https://doi.org/10.1002/j.2158-1592.2010.tb00152.x

27. Chen, C. T., Pai, P. F., & Hung, W. Z. (2010). An integrated methodology using linguistic promethee and maximum deviation method for third-party logistics supplier selection. International Journal of Computational Intelligence Systems, 3(4). https://doi.org/10.1080/18756891.2010.9727712

28. Cheng, Y. H., & Lee, F. (2010). Outsourcing reverse logistics of high-tech manufacturing firms by using a systematic decision-making approach: TFT-LCD sector in Taiwan. Industrial Marketing Management, 39(7). https://doi.org/10.1016/j.indmarman.2009.10.004

29. Chiu, Y., Lin, P. C., & Hsu, H. H. (2011). Considering third-party logistics providers in reverse logistics. In Journal of the Chinese Institute of Industrial Engineers (Vol. 28, Issue 7). https://doi.org/10.1080/10170669.2011.636384

30. Chiu, Y., Lin, P. C., & Hsu, H. H. (2011). Considering third-party logistics providers in reverse logistics. In Journal of the Chinese Institute of Industrial Engineers (Vol. 28, Issue 7). https://doi.org/10.1080/10170669.2011.636384

31. Choy, K. L., Chow, H. K. H., Tan, K. H., Chan, C. K., Mok, E. C. M., & Wang, Q. (2008). Leveraging the supply chain flexibility of third party logistics - Hybrid knowledge-based system approach. Expert Systems with Applications, 35(4). https://doi.org/10.1016/j.eswa.2007.08.084

32. Chu, Z., Feng, B., & Lai, F. (2018). Logistics service innovation by third party logistics providers in China: Aligning guanxi and organizational structure. Transportation Research Part E: Logistics and Transportation Review, 118. https://doi.org/10.1016/j.tre.2018.08.007

33. Chu, Z., & Wang, Q. (2012). Drivers of Relationship Quality in Logistics Outsourcing in China. Journal of Supply Chain Management, 48(3). https://doi.org/10.1111/j.1745-493X.2011.03259.x

34. Cooper, O., Tadikamalla, P., & Shang, J. (2012). Selection of a Third-Party Logistics Provider: Capturing the Interaction and Influence of Performance Metrics with the Analytical Network Process. Journal of Multi-Criteria Decision Analysis, 19(3–4). https://doi.org/10.1002/mcda.489

35. Daim, T. U., Udbye, A., & Balasubramanian, A. (2013). Use of analytic hierarchy process (AHP) for selection of 3PL providers. Journal of Manufacturing Technology Management, 24(1). https://doi.org/10.1108/17410381311287472

36. Dapiran, P., Lieb, R., Millen, R., & Sohal, A. (1996). Third party logistics services usage by large Australian firms. International Journal of Physical Distribution & Logistics Management, 26(10). https://doi.org/10.1108/09600039610150442

37. Datta, S., Samantra, C., Mahapatra, S. S., Mandal, G., & Majumdar, G. (2013). Appraisement and selection of third party logistics service providers in fuzzy environment. Benchmarking, 20(4). https://doi.org/10.1108/BIJ-11-2011-0087

38. Daugherty, P. J., Stank, T. P., & Rogers, D. S. (1996). Third-Party Logistics Service Providers: Purchasers' Perceptions. International Journal of Purchasing and Materials Management, 32(1). https://doi.org/10.1111/j.1745-493x.1996.tb00222.x

39. Deepen, J. M., Goldsby, T. J., Knemeyer, A. M., & Wallenburg, C. M. (2008). BEYOND EXPECTATIONS: AN EXAMINATION OF LOGISTICS OUTSOURCING GOAL ACHIEVEMENT AND GOAL EXCEEDANCE. Journal of Business Logistics, 29(2). https://doi.org/10.1002/j.2158-1592.2008.tb00088.x

40. Dong, C., Huang, Q., Pan, Y., Ng, C. T., & Liu, R. (2023). Logistics outsourcing: Effects of greenwashing and blockchain technology. Transportation Research Part E: Logistics and Transportation Review, 170, 103015.

41. Ekeskär, A., & Rudberg, M. (2016). Third-party logistics in construction: the case of a large hospital project. Construction Management and Economics, 34(3). https://doi.org/10.1080/01446193.2016.1186809

42. Elock Son, C., Müller, J., & Djuatio, E. (2019). Logistic outsourcing risks management and performance under the mediation of customer service in agribusiness. Supply Chain Forum, 20(4). https://doi.org/10.1080/16258312.2019.1652545

43. Etokudoh, E. P., Boolaky, M., & Gungaphul, M. (2017). Third party logistics outsourcing: An exploratory study of the oil and gas industry in Nigeria. SAGE Open, 7(4). https://doi.org/10.1177/2158244017735566

44. Evangelista, P., McKinnon, A., & Sweeney, E. (2013). Technology adoption in small and medium-sized logistics providers. Industrial Management and Data Systems, 113(7). https://doi.org/10.1108/IMDS-10-2012-0374

45. Eydi, A., & Rastgar, S. (2022). A DEA model with dual-role factors and fuzzy data for selecting third-party reverse logistics provider, case study: Hospital waste collection. Ain Shams Engineering Journal, 13(2). https://doi.org/10.1016/j.asej.2021.07.011

46. Falsini, D., Fondi, F., & Schiraldi, M. M. (2012). A logistics provider evaluation and selection methodology based on AHP, DEA and linear programming integration. International Journal of Production Research, 50(17). https://doi.org/10.1080/00207543.2012.657969

47. Gadde, L. E., & Hulthén, K. (2009). Improving logistics outsourcing through increasing buyer-provider interaction. Industrial Marketing Management, 38(6). https://doi.org/10.1016/j.indmarman.2009.05.010

48. Gl, H., & Catay, B. (2007). Third-party logistics provider selection: Insights from a Turkish automotive company. Supply Chain Management: An International Journal, 12(6). https://doi.org/10.1108/13598540710826290

49. Goker, N. (2021). A novel integrated intuitionistic fuzzy decision aid for agile outsourcing provider selection: a COVID-19 pandemic-based scenario analysis. Soft Computing, 25(21). https://doi.org/10.1007/s00500-021-06037-0

50. Gotzamani, K. D., Longinidis, P., & Vouzas, F. (2010). The logistics services outsourcing dilemma: Quality management and financial performance perspectives. Supply Chain Management, 15(6). https://doi.org/10.1108/13598541011080428

51. Govindan, K., & Chaudhuri, A. (2016). Interrelationships of risks faced by third party logistics service providers: A DEMATEL based approach. Transportation Research Part E: Logistics and Transportation Review, 90. https://doi.org/10.1016/j.tre.2015.11.010

52. Govindan, K., Khodaverdi, R., & Vafadarnikjoo, A. (2016). A grey DEMATEL approach to develop third-party logistics provider selection criteria. Industrial Management and Data Systems, 116(4). https://doi.org/10.1108/IMDS-05-2015-0180

53. Gultekin, B., Demir, S., Gunduz, M. A., Cura, F., & Ozer, L. (2022). The logistics service providers during the COVID-19 pandemic: The prominence and the cause-effect structure of uncertainties and risks. Computers and Industrial Engineering, 165. https://doi.org/10.1016/j.cie.2022.107950

54. Gunasekaran, A., Ngai, E. W. T., & Cheng, T. C. E. (2007). Developing an e-logistics system: a case study. International Journal of Logistics Research and Applications, 10(4). https://doi.org/10.1080/13675560701195307

55. Gupta, A., Singh, R. K., & Mangla, S. K. (2022). Evaluation of logistics providers for sustainable service quality: Analytics based decision making framework. Annals of Operations Research, 315(2). https://doi.org/10.1007/s10479-020-03913-0

56. Hartmann, E., & De Grahl, A. (2011). The flexibility of logistics service providers and its impact on customer loyalty: An empirical study. Journal of Supply Chain Management, 47(3). https://doi.org/10.1111/j.1745-493X.2011.03228.x

57. Herold, D. M., Nowicka, K., Pluta-Zaremba, A., & Kummer, S. (2021). COVID-19 and the pursuit of supply chain resilience: reactions and "lessons learned" from logistics service providers (LSPs). Supply Chain Management, 26(6). https://doi.org/10.1108/SCM-09-2020-0439

58. Hilletofth, P., & Hilmola, O. P. (2010). Role of logistics outsourcing on supply chain strategy and management: Survey findings from Northern Europe. Strategic Outsourcing: An International Journal, 3(1). https://doi.org/10.1108/17538291011023070

59. Hingley, M., Lindgreen, A., Grant, D. B., & Kane, C. (2011). Using fourth-party logistics management to improve horizontal collaboration among grocery retailers. Supply Chain Management, 16(5). https://doi.org/10.1108/13598541111155839

60. Ho, W., He, T., Lee, C. K. M., & Emrouznejad, A. (2012). Strategic logistics outsourcing: An integrated QFD and fuzzy AHP approach. Expert Systems with Applications, 39(12). https://doi.org/10.1016/j.eswa.2012.03.009

61. Hofer, A. R., Knemeyer, A. M., & Murphy, P. R. (2012). The roles of procedural and distributive justice in logistics outsourcing relationships. Journal of Business Logistics, 33(3). https://doi.org/10.1111/j.2158-1592.2012.01052.x

62. Hofer, A. R., Jin, Y. H., & Knemeyer, A. M. (2021). Environmental uncertainty and cross-buying in logistics outsourcing arrangements: a resource dependence perspective. International Journal of Physical Distribution and Logistics Management, 51(3). https://doi.org/10.1108/IJPDLM-04-2019-0121

63. Hofer, A. R., Knemeyer, A. M., & Dresner, M. E. (2009). ANTECEDENTS AND DIMENSIONS OF CUSTOMER PARTNERING BEHAVIOR IN LOGISTICS OUTSOURCING RELATIONSHIPS. Journal of Business Logistics, 30(2). https://doi.org/10.1002/j.2158-1592.2009.tb00116.x

64. Hong, J., Chin, A. T. h., & Liu, B. (2004). Firm-specific characteristics and logistics outsourcing by Chinese manufacturers. Asia Pacific Journal of Marketing and Logistics, 16(3). https://doi.org/10.1108/13555850410765212

65. Hong, E., Son, B. G., & Menachof, D. (2010). Exploring the link between IT systems and the outsourcing of logistics activities: A transaction cost perspective. International Journal of Logistics Research and Applications, 13(1). https://doi.org/10.1080/13675560903233682

66. Hsiao, H. I., Kemp, R. G. M., van der Vorst, J. G. A. J., & Omta, S. W. F. (2011). Logistics outsourcing by Taiwanese and Dutch food processing industries. British Food Journal, 113(4). https://doi.org/10.1108/00070701111124014

67. Hsiao, H. I., van der Vorst, J. G. A. J., Kemp, R. G. M., & Omta, S. W. F. O. (2010). Developing a decision-making framework for levels of logistics outsourcing in food supply chain networks. International Journal of Physical Distribution and Logistics Management, 40(5). https://doi.org/10.1108/09600031011052840

68. Hsiao, H. I., Kemp, R. G. M., van der Vorst, J. G. A. J., & (Onno) Omta, S. W. F. (2010). A classification of logistic outsourcing levels and their impact on service performance: Evidence from the food processing industry. International Journal of Production Economics, 124(1). https://doi.org/10.1016/j.ijpe.2009.09.010

69. Huang, M., Tu, J., Chao, X., & Jin, D. (2019). Quality risk in logistics outsourcing: A fourth party logistics perspective. European Journal of Operational Research, 276(3). https://doi.org/10.1016/j.ejor.2019.01.049

70. Huo, B., Liu, C., Kang, M., & Zhao, X. (2015). The impact of dependence and relationship commitment on logistics outsourcing: Empirical evidence from Greater China. International Journal of Physical Distribution and Logistics Management, 45(9–10). https://doi.org/10.1108/IJPDLM-04-2015-0109

71. Huo, B., Fu, D., Zhao, X., & Zhu, J. (2016). Curbing opportunism in logistics outsourcing relationships: The role of relational norms and contract. International Journal of Production Economics, 182. https://doi.org/10.1016/j.ijpe.2016.07.005

72. Huo, B., Fu, D., Zhao, X., & Zhu, J. (2016). Curbing opportunism in logistics outsourcing relationships: The role of relational norms and contract. International Journal of Production Economics, 182. https://doi.org/10.1016/j.ijpe.2016.07.005

73. Hwang, T., & Kim, S. T. (2019). Balancing in-house and outsourced logistics services: effects on supply chain agility and firm performance. Service Business, 13(3). https://doi.org/10.1007/s11628-018-00394-x

74. Işiklar, G., Alptekin, E., & Büyüközkan, G. (2007). Application of a hybrid intelligent decision support model in logistics outsourcing. Computers and Operations Research, 34(12). https://doi.org/10.1016/j.cor.2006.01.011

75. Jari, J., Jouni, J., & Grant, D. B. (2010). Service quality and its relation to satisfaction and loyalty in logistics outsourcing relationships. Managing Service Quality: An International Journal, 20(6). https://doi.org/10.1108/09604521011092857

76. Jayaram, J., & Tan, K. C. (2010). Supply chain integration with third-party logistics providers. International Journal of Production Economics, 125(2). https://doi.org/10.1016/j.ijpe.2010.02.014

77. Jharkharia, S., & Shankar, R. (2007). Selection of logistics service provider: An analytic network process (ANP) approach. Omega, 35(3). https://doi.org/10.1016/j.omega.2005.06.005

78. Jiang, L., Wang, Y., & Liu, D. (2016). Logistics cost sharing in supply chains involving a third-party logistics provider. Central European Journal of Operations Research, 24(1). https://doi.org/10.1007/s10100-014-0348-5

79. Jiang, L., Wang, Y., & Yan, X. (2014). Decision and coordination in a competing retail channel involving a third-party logistics provider. Computers and Industrial Engineering, 76(1). https://doi.org/10.1016/j.cie.2014.07.026

80. Joong-Kun Cho, J., Ozment, J., & Sink, H. (2008). Logistics capability, logistics outsourcing and firm performance in an e-commerce market. International Journal of Physical Distribution & Logistics Management, 38(5). https://doi.org/10.1108/09600030810882825

81. Jothimani, D., & Sarmah, S. P. (2014). Supply chain performance measurement for third party logistics. Benchmarking, 21(6). https://doi.org/10.1108/BIJ-09-2012-0064

82. Kaipia, R., & Tanskanen, K. (2003). Vendor managed category management - An outsourcing solution in retailing. Journal of Purchasing and Supply Management, 9(4). https://doi.org/10.1016/S1478-4092(03)00009-8

83. Karia, N., & Wong, C. Y. (2013). The impact of logistics resources on the performance of Malaysian logistics service providers. Production Planning and Control, 24(7). https://doi.org/10.1080/09537287.2012.659871

84. Kumar, P., & Singh, R. K. (2012). A fuzzy AHP and TOPSIS methodology to evaluate 3PL in a supply chain. Journal of Modelling in Management, 7(3). https://doi.org/10.1108/17465661211283287

85. Laguir, I., Stekelorum, R., & El Baz, J. (2021). Going green? Investigating the relationships between proactive environmental strategy, GSCM practices and performances of third-party logistics providers (TPLs). Production Planning and Control, 32(13). https://doi.org/10.1080/09537287.2020.1784483

86. Lai, F., Li, D., Wang, Q., & Zhao, X. (2008). The information technology capability of third-party logistics providers: A resource-based view and empirical evidence from China. Journal of Supply Chain Management, 44(3). https://doi.org/10.1111/j.1745-493X.2008.00064.x

87. Lai, F., Tian, Y., & Huo, B. (2012). Relational governance and opportunism in logistics outsourcing relationships: Empirical evidence from China. International Journal of Production Research, 50(9). https://doi.org/10.1080/00207543.2011.581011

88. Lai, F., Chu, Z., Wang, Q., & Fan, C. (2013). Managing dependence in logistics outsourcing relationships: Evidence from China. International Journal of Production Research, 51(10). https://doi.org/10.1080/00207543.2012.752591

89. Lasch, R., Schultmann, F., Hartmann, E., & de Grahl, A. (2012). Logistics outsourcing interfaces: The role of customer partnering behavior. International Journal of Physical Distribution & Logistics Management, 42(6). https://doi.org/10.1108/09600031211250578

90. Lau, K. H., & Zhang, J. (2006). Drivers and obstacles of outsourcing practices in China. International Journal of Physical Distribution and Logistics Management, 36(10). https://doi.org/10.1108/09600030610714599

91. Leung, L. C., Wong, W. H., Hui, Y. Van, & Wan, Y. (2013). Managing third-party logistics under uncertainty: A decision scheme and managerial implications. International Journal of Production Economics, 145(2). https://doi.org/10.1016/j.ijpe.2013.05.017

92. Leuschner, R., Carter, C. R., Goldsby, T. J., & Rogers, Z. S. (2014). Third-party logistics: A meta-analytic review and investigation of its impact on performance. Journal of Supply Chain Management, 50(1). https://doi.org/10.1111/jscm.12046

93. Li, L. (2011). Assessing the relational benefits of logistics services perceived by manufacturers in supply chain. International Journal of Production Economics, 132(1). https://doi.org/10.1016/j.ijpe.2011.03.006

94. Li-jun, Z. (2012). Research on Analysis and Control of Enterprise Logistics Outsourcing Risks. Energy Procedia, 17. https://doi.org/10.1016/j.egypro.2012.02.237

95. Lieb, R. C. (1992). The Use of Third-Party Logistics Services by Large American. Journal of Business Logistics, 13(2).

96. Lieb, R., & Bentz, B. A. (2005). The North American third party logistics industry in 2004: The provider CEO perspective. In International Journal of Physical Distribution and Logistics Management (Vol. 35, Issue 8). https://doi.org/10.1108/09600030510623357

97. Lieb, K. J., & Lieb, R. C. (2010). Environmental sustainability in the third-party logistics (3PL); industry. International Journal of Physical Distribution & Logistics Management, 40(7). https://doi.org/10.1108/09600031011071984

98. Lieb, R. C., & Randall, H. L. (1996). A comparison of the use of third-party logistics services by large American manufacturers, 1991, 1994 and 1995. Journal of Business Logistics, 17(I).

99. Lieb, R. C., & Lieb, K. J. (2011, January). The North American Third Party Logistics Industry in 2010: The Provider Ceo Perspective. In Supply Chain Forum: An International Journal (Vol. 12, No. 3, pp. 44-52). Taylor & Francis.

100. Lin, C. (2007). Factors affecting innovation in logistics technologies for logistics service providers in China. Journal of Technology Management in China, 2(1). https://doi.org/10.1108/17468770710723604

101. Liu, Z., Xu, J., Li, Y., Wang, X., & Wu, J. (2012). Using system dynamics to study the logistics outsourcing cost of risk. Kybernetes, 41(9). https://doi.org/10.1108/03684921211275216

102. Liu, C. L., & Lee, M. Y. (2018). Integration, supply chain resilience, and service performance in third-party logistics providers. International Journal of Logistics Management, 29(1). https://doi.org/10.1108/IJLM-11-2016-0283

103. Liu, C. L., & Lai, P. Y. (2016). Impact of external integration capabilities of third-party logistics providers on their financial performance. International Journal of Logistics Management, 27(2). https://doi.org/10.1108/IJLM-09-2014-0155

104. Liu, C., Huo, B., Liu, S., & Zhao, X. (2015). Effect of information sharing and process coordination on logistics outsourcing. Industrial Management and Data Systems, 115(1). https://doi.org/10.1108/IMDS-08-2014-0233

105. Liu, H. T., & Wang, W. K. (2009). An integrated fuzzy approach for provider evaluation and selection in third-party logistics. Expert Systems with Applications, 36(3 PART 1). https://doi.org/10.1016/j.eswa.2008.05.030

106. Liu, X., Grant, D. B., McKinnon, A. C., & Feng, Y. (2010). An empirical examination of the contribution of capabilities to the competitiveness of logistics service providers: A perspective from China. International Journal of Physical Distribution and Logistics Management, 40(10). https://doi.org/10.1108/09600031011093232

107. Liu, C. L., & Lyons, A. C. (2011). An analysis of third-party logistics performance and service provision. Transportation Research Part E: Logistics and Transportation Review, 47(4). https://doi.org/10.1016/j.tre.2010.11.012

108. Lou, Y., Feng, L., He, S., He, Z., & Zhao, X. (2020). Logistics service outsourcing choices in a retailer-led supply chain. Transportation Research Part E: Logistics and Transportation Review, 141. https://doi.org/10.1016/j.tre.2020.101944

109. Mahmoudzadeh, M., Mansour, S., & Karimi, B. (2013). To develop a third-party reverse logistics network for end-of-life vehicles in Iran. Resources, Conservation and Recycling, 78. https://doi.org/10.1016/j.resconrec.2013.06.006

110. Maltz, A., Riley, L., & Boberg, K. (1993). Purchasing logistics services in a transborder situation: Logistics outsourcing in us-mexico co-production. International Journal of Physical Distribution & Logistics Management, 23(8). https://doi.org/10.1108/09600039310049835

111. Marasco, A. (2008). Third-party logistics: A literature review. International Journal of Production Economics, 113(1). https://doi.org/10.1016/j.ijpe.2007.05.017

112. Marcus Wallenburg, C., Knemeyer, A. M., Cahill, D. L., & Goldsby, T. J. (2010). Developing a scale for proactive improvement within logistics outsourcing relationships. The International Journal of Logistics Management, 21(1). https://doi.org/10.1108/09574091011042151

113. Meng, S. M., Liang, G. S., Lin, K., & Chen, S. Y. (2010). Criteria for services of air cargo logistics providers: How do they relate to client satisfaction? Journal of Air Transport Management, 16(5). https://doi.org/10.1016/j.jairtraman.2010.02.003

114. Millen, R., Sohal, A., Dapiran, P., Lieb, R., & Wassenhove, L. N. Van. (1997). Benchmarking Australian firms' usage of contract logistics services: A comparison with American and Western European practice. Benchmarking for Quality Management & Technology, 4(1).

115. Min, H. (2013). Examining logistics outsourcing practices in the United States: From the perspectives of third-party logistics service users. Logistics Research, 6(4). https://doi.org/10.1007/s12159-013-0110-8

116. Min, H., & Joo, S. J. (2009). Benchmarking third-party logistics providers using data envelopment analysis: An update. Benchmarking: An International Journal, 16(5). https://doi.org/10.1108/14635770910987814

117. Mishra, A. R., Rani, P., & Pandey, K. (2022). Fermatean fuzzy CRITIC-EDAS approach for the selection of sustainable third-party reverse logistics providers using improved generalized score function. Journal of Ambient Intelligence and Humanized Computing, 13(1). https://doi.org/10.1007/s12652-021-02902-w

118. Mohammadkhani, A., & Mousavi, S. M. (2023). A new last aggregation fuzzy compromise solution approach for evaluating sustainable third-party reverse logistics providers with an application to food industry. Expert Systems with Applications, 216, 119396.

119. Mortensen, O., & Lemoine, O. W. (2008). Integration between manufacturers and third party logistics providers? International Journal of Operations and Production Management, 28(4). https://doi.org/10.1108/01443570810861552

120. Mothilal, S., Gunasekaran, A., Nachiappan, S. P., & Jayaram, J. (2012). Key success factors and their performance implications in the Indian third-party logistics (3PL) industry. International Journal of Production Research, 50(9). https://doi.org/10.1080/00207543.2011.581004

121. Narkhede, B. E., Raut, R., Gardas, B., Luong, H. T., & Jha, M. (2017). Selection and evaluation of third party logistics service provider (3PLSP) by using an interpretive ranking process (IRP). Benchmarking, 24(6). https://doi.org/10.1108/BIJ-04-2016-0055

122. Niu, B., & Mu, Z. (2020). Sustainable efforts, procurement outsourcing, and channel co-opetition in emerging markets. Transportation Research Part E: Logistics and Transportation Review, 138. https://doi.org/10.1016/j.tre.2020.101960

123. Núñez-Carballosa, A., & Guitart-Tarrés, L. (2011). Third-party logistics providers in Spain. Industrial Management & Data Systems, 111(8). https://doi.org/10.1108/02635571111170749

124. Oeser, G. (2020). Segmenting logistics service users based on their provider selection criteria to succeed in outsourcing. International Journal of Retail and Distribution Management, 48(9). https://doi.org/10.1108/IJRDM-04-2019-0125

125. Ordoobadi, S. M. (2009). Outsourcing reverse logistics and remanufacturing functions: A conceptual strategic model. Management Research News, 32(9). https://doi.org/10.1108/01409170910980344

126. PETERS, M., COOPER, J., LIEB, R. C., & RANDALL, H. L. (1998). The Third-Party Logistics Industry in Europe: Provider Perspectives on the Industry's Current Status and Future Prospects. International Journal of Logistics Research and Applications, 1(1). https://doi.org/10.1080/13675569808962035

127. Paché, G. (1998). Logistics outsourcing in grocery distribution: a European perspective. Logistics Information Management, 11(5). https://doi.org/10.1108/09576059810234227

128. Panayides, P. M., & So, M. (2005). The impact of integrated logistics relationships on third-party logistics service quality and performance. Maritime Economics and Logistics, 7(1). https://doi.org/10.1057/palgrave.mel.9100123

129. Panayides, P. M. (2007). EFFECTS OF ORGANIZATIONAL LEARNING IN THIRD-PARTY LOGISTICS. Journal of Business Logistics, 28(2). https://doi.org/10.1002/j.2158-1592.2007.tb00061.x

130. Park, Y. H., & Jeong, Y. S. (2016). An empirical analysis on the performance of the third-party logistics in the Korean exporter. Journal of Korea Trade, 20(1). https://doi.org/10.1108/JKT-03-2016-006

131. Patterson, Z., Ewing, G. O., & Haider, M. (2010). How different is carrier choice for third party logistics companies? Transportation Research Part E: Logistics and Transportation Review, 46(5). https://doi.org/10.1016/j.tre.2010.01.005

132. Paula, I. C. de, Campos, E. A. R. de, Pagani, R. N., Guarnieri, P., & Kaviani, M. A. (2020). Are collaboration and trust sources for innovation in the reverse logistics? Insights from a systematic literature review. In Supply Chain Management (Vol. 25, Issue 2). https://doi.org/10.1108/SCM-03-2018-0129

133. Perçin, S. (2009). Evaluation of third-party logistics (3PL) providers by using a two-phase AHP and TOPSIS methodology. Benchmarking, 16(5). https://doi.org/10.1108/14635770910987823

134. Power, D., Sharafali, M., & Bhakoo, V. (2007). Adding value through outsourcing: Contribution of 3PL services to customer performance. Management Research News, 30(3). https://doi.org/10.1108/01409170710733296

135. Prakash, C., & Barua, M. K. (2016). A combined MCDM approach for evaluation and selection of third-party reverse logistics partner for Indian electronics industry. Sustainable Production and Consumption, 7. https://doi.org/10.1016/j.spc.2016.04.001

136. Premkumar, P., Gopinath, S., & Mateen, A. (2021). Trends in third party logistics–the past, the present & the future. International Journal of Logistics Research and Applications, 24(6). https://doi.org/10.1080/13675567.2020.1782863

137. Qureshi, M. N., Kumar, D., & Kumar, P. (2008). An integrated model to identify and classify the key criteria and their role in the assessment of 3PL services providers. Asia Pacific Journal of Marketing and Logistics, 20(2). https://doi.org/10.1108/13555850810864579

138. Quélin, B., & Duhamel, F. (2003). Bringing together strategic outsourcing and corporate strategy: Outsourcing motives and risks. European Management Journal, 21(5). https://doi.org/10.1016/S0263-2373(03)00113-0

139. Rajesh, R., Pugazhendhi, S., Ganesh, K., Yves, D., Lenny Koh, S. C., & Muralidharan, C. (2011). Perceptions of service providers and customers of key success factors of third-party logistics relationships - An empirical study. International Journal of Logistics Research and Applications, 14(4). https://doi.org/10.1080/13675567.2011.635640

140. Rajesh, R., Pugazhendhi, S., Ganesh, K., Ducq, Y., & Lenny Koh, S. C. (2012). Generic balanced scorecard framework for third party logistics service provider. International Journal of Production Economics, 140(1). https://doi.org/10.1016/j.ijpe.2012.01.040

141. Rao, K., & Young, R. R. (1994). Global Supply Chains: Factors Influencing Outsourcing of Logistics Functions. International Journal of Physical Distribution & Logistics Management, 24(6). https://doi.org/10.1108/09600039410066141

142. Raut, R., Kharat, M., Kamble, S., & Kumar, C. S. (2018). Sustainable evaluation and selection of potential third-party logistics (3PL) providers: An integrated MCDM approach. Benchmarking, 25(1). https://doi.org/10.1108/BIJ-05-2016-0065

143. Reeves, K. A., Caliskan, F., & Ozcan, O. (2010). Outsourcing distribution and logistics services within the automotive supplier industry. Transportation Research Part E: Logistics and Transportation Review, 46(3). https://doi.org/10.1016/j.tre.2009.10.001

144. Ren, S., Choi, T. M., Lee, K. M., & Lin, L. (2020). Intelligent service capacity allocation for cross-border-E-commerce related third-party-forwarding logistics operations: A deep learning approach. Transportation Research Part E: Logistics and Transportation Review, 134. https://doi.org/10.1016/j.tre.2019.101834

145. Reza, S., Mubarik, M. S., Naghavi, N., & Rub Nawaz, R. (2020). Relationship marketing and third-party logistics: evidence from hotel industry. Journal of Hospitality and Tourism Insights, 3(3). https://doi.org/10.1108/JHTI-07-2019-0095

146. Rintala, O., Solakivi, T., Laari, S., Töyli, J., & Ojala, L. (2021). Drivers of logistics outsourcing: examining transaction costs, core competences and planned behavior. International Journal of Physical Distribution and Logistics Management, 51(3). https://doi.org/10.1108/IJPDLM-08-2019-0244

147. Rollins, M., Pekkarinen, S., & Mehtälä, M. (2011). Inter-firm customer knowledge sharing in logistics services: An empirical study. International Journal of Physical Distribution and Logistics Management, 41(10). https://doi.org/10.1108/09600031111185239

148. Sahu, N. K., Sahu, A. K., & Sahu, A. K. (2015). Appraisement and benchmarking of third-party logistic service provider by exploration of risk-based approach. Cogent Business and Management, 2(1). https://doi.org/10.1080/23311975.2015.1121637

149. Selviaridis, K., & Spring, M. (2007). Third party logistics: A literature review and research agenda. In The International Journal of Logistics Management (Vol. 18, Issue 1). https://doi.org/10.1108/09574090710748207

150. Selviaridis, K., & Spring, M. (2010). The dynamics of business service exchanges: Insights from logistics outsourcing. Journal of Purchasing and Supply Management, 16(3). https://doi.org/10.1016/j.pursup.2009.12.007

151. Selviaridis, K., Spring, M., Profillidis, V., & Botzoris, G. (2008). Benefits, risks, selection criteria and success factors for third-party logistics services. Maritime Economics and Logistics, 10(4). https://doi.org/10.1057/mel.2008.12

152. Serrato, M. A., Ryan, S. M., & Gaytán, J. (2007). A Markov decision model to evaluate outsourcing in reverse logistics. International Journal of Production Research, 45(18–19). https://doi.org/10.1080/00207540701450161

153. Shang, K. C. (2009). Integration and organisational learning capabilities in third-party logistics providers. Service Industries Journal, 29(3). https://doi.org/10.1080/02642060701847794

154. Sharma, S. K., & Kumar, V. (2015). Optimal selection of third-party logistics service providers using quality function deployment and Taguchi loss function. Benchmarking, 22(7). https://doi.org/10.1108/BIJ-02-2014-0016

155. Sharma, S., & Choudhury, A. G. (2014). Industry insight: A qualitative study on evolution of relationships between third-party logistics providers and customers into strategic alliances. Strategic Outsourcing, 7(1). https://doi.org/10.1108/SO-08-2013-0015

156. Shi, Y., Zhang, A., Arthanari, T., Liu, Y., & Cheng, T. C. E. (2016). Third-party purchase: An empirical study of third-party logistics providers in China. International Journal of Production Economics, 171. https://doi.org/10.1016/j.ijpe.2015.08.028

157. Singh Bhatti, R., Kumar, P., & Kumar, D. (2010). Analytical modeling of third party service provider selection in lead logistics provider environments. Journal of Modelling in Management, 5(3). https://doi.org/10.1108/17465661011092641

158. Singh, R. K., Gunasekaran, A., & Kumar, P. (2018). Third party logistics (3PL) selection for cold chain management: a fuzzy AHP and fuzzy TOPSIS approach. Annals of Operations Research, 267(1–2). https://doi.org/10.1007/s10479-017-2591-3

159. Sinkovics, R. R., & Roath, A. S. (2004). STRATEGIC ORIENTATION, CAPABILITIES, AND PERFORMANCE IN MANUFACTURER — 3PL RELATIONSHIPS. Journal of Business Logistics, 25(2). https://doi.org/10.1002/j.2158-1592.2006.tb00220.x

160. Skipworth, H., Delbufalo, E., & Mena, C. (2020). Logistics and procurement outsourcing in the healthcare sector: A comparative analysis. European Management Journal, 38(3). https://doi.org/10.1016/j.emj.2020.04.002

161. Sohail, M. S., Anwar, S. A., Chowdhury, J., & Farhat, N. R. (2006). Logistics outsourcing in the United Arab Emirates: Evidence and managerial implications. Journal of Marketing Channels, 13(1). https://doi.org/10.1300/J049v13n01_03

162. Sohal, A. S., Millen, R., & Moss, S. (2002). A comparison of the use of third-party logistics services by Australian firms between 1995 and 1999. International Journal of Physical Distribution and Logistics Management, 32(1). https://doi.org/10.1108/09600030210415306

163. Solakivi, T., Töyli, J., & Ojala, L. (2013). Logistics outsourcing, its motives and the level of logistics costs in manufacturing and trading companies operating in Finland. Production Planning and Control, 24(4–5). https://doi.org/10.1080/09537287.2011.648490

164. Solakivi, T., Töyli, J., Engblom, J., & Ojala, L. (2011). Logistics outsourcing and company performance of SMEs: Evidence from 223 firms operating in Finland. Strategic Outsourcing: An International Journal, 4(2). https://doi.org/10.1108/17538291111147982

165. Stank, T. P., & Maltz, A. B. (1996). Some Propositions on Thrid Party Choice: Domestic vs. International Logistics Providers. Journal of Marketing Theory and Practice, 4(2). https://doi.org/10.1080/10696679.1996.11501722

166. Stekelorum, R., Laguir, I., Gupta, S., & Kumar, S. (2021). Green supply chain management practices and third-party logistics providers' performances: A fuzzy-set approach. International Journal of Production Economics, 235. https://doi.org/10.1016/j.ijpe.2021.108093

167. Sternberg, H., Mathauer, M., & Hofmann, E. (2022). Technology management in multi-tier chains: A case study of agency in logistics service outsourcing. Journal of Operations Management.

168. Sun, F., & Shi, G. (2022). Study on the application of big data techniques for the third-party logistics using novel support vector machine algorithm. Journal of Enterprise Information Management, 35(4/5), 1168-1184.

169. Tavana, M., Zareinejad, M., & Santos-Arteaga, F. J. (2018). An intuitionistic fuzzy-grey superiority and inferiority ranking method for third-party reverse logistics provider selection. International Journal of Systems Science: Operations and Logistics, 5(2). https://doi.org/10.1080/23302674.2016.1256448

170. Thai, V. Van, Rahman, S., & Tran, D. M. (2022). Revisiting critical factors of logistics outsourcing relationship: a multiple-case study approach. International Journal of Logistics Management, 33(1). https://doi.org/10.1108/IJLM-10-2020-0394

171. Tian, yu, Ellinger, A. E., & Chen, H. (2010). Third-party logistics provider customer orientation and customer firm logistics improvement in China. International Journal of Physical Distribution & Logistics Management, 40(5). https://doi.org/10.1108/09600031011052822

172. Tian, Y., Lai, F., & Daniel, F. (2008). An examination of the nature of trust in logistics outsourcing relationship: Empirical evidence from China. Industrial Management and Data Systems, 108(3). https://doi.org/10.1108/02635570810858769

173. Tiwari, S., Sharma, P., Choi, T. M., & Lim, A. (2023). Blockchain and third-party logistics for global supply chain operations: Stakeholders' perspectives and decision roadmap. Transportation Research Part E: Logistics and Transportation Review, 170, 103012.

174. Tsai, M. C., Liao, C. H., & Han, C. S. (2008). Risk perception on logistics outsourcing of retail chains: Model development and empirical verification in Taiwan. Supply Chain Management, 13(6). https://doi.org/10.1108/13598540810905679

175. Tsai, M. C., Wen, C. H., & Chen, C. S. (2007). Demand choices of high-tech industry for logistics service providers-an empirical case of an offshore science park in Taiwan. Industrial Marketing Management, 36(5). https://doi.org/10.1016/j.indmarman.2006.03.002

176. Tyan, J. C., Wang, F. K., & Du, T. (2003). Applying collaborative transportation management models in global third-party logistics. International Journal of Computer Integrated Manufacturing, 16(4–5). https://doi.org/10.1080/0951192031000089183

177. Van Damme, D. A., & Ploos Van Amstel, M. J. (1996). Outsourcing Logistics Management Activities. The International Journal of Logistics Management, 7(2). https://doi.org/10.1108/09574099610805548

178. Vasiliauskas, A. V., & Jakubauskas, G. (2007). Principle and benefits of third party logistics approach when managing logistics supply chain. Transport, 22(2). https://doi.org/10.1080/16484142.2007.9638101

179. Vazifehdan, M. N., & Darestani, S. A. (2019). Green Logistics Outsourcing Employing Multi Criteria Decision Making and Quality Function Deployment in the Petrochemical Industry. Asian Journal of Shipping and Logistics, 35(4). https://doi.org/10.1016/j.ajsl.2019.12.011

180. Vivaldini, M., & Pires, S. R. I. (2013). Applying a business cell approach to fourth-party logistics freight management in the food service industry. International Journal of Logistics Research and Applications, 16(4). https://doi.org/10.1080/13675567.2013.815157

181. Vlachos, I., & Polichronidou, V. (2023). Multi-demand supply chain triads and the role of Third-Party Logistics Providers. The International Journal of Logistics Management.

182. Wagner, S. M., & Sutter, R. (2012). A qualitative investigation of innovation between third-party logistics providers and customers. International Journal of Production Economics, 140(2). https://doi.org/10.1016/j.ijpe.2012.07.018

183. Wallenburg, C. M., & Lukassen, P. (2011). Proactive improvement of logistics service providers as driver of customer loyalty. European Journal of Marketing, 45(3). https://doi.org/10.1108/03090561111107267

184. Wallenburg, C. M., Cahill, D. L., Goldsby, T. J., & Knemeyer, A. M. (2010). Logistics outsourcing performance and loyalty behavior: Comparisons between Germany and the United States. International Journal of Physical Distribution and Logistics Management, 40(7). https://doi.org/10.1108/09600031011072019

185. Wallenburg, C. M. (2009). Innovation in logistics outsourcing relationships: Proactive improvement by logistics service providers as a driver of customer loyalty. Journal of Supply Chain Management, 45(2). https://doi.org/10.1111/j.1745-493X.2009.03164.x

186. Wan, Q., Yuan, Y., & Lai, F. (2019). Disentangling the driving factors of logistics outsourcing: a configurational perspective. Journal of Enterprise Information Management, 32(6). https://doi.org/10.1108/JEIM-10-2018-0236

187. Wang, Q., Huo, B., Lai, F., & Chu, Z. (2010). Understanding performance drivers of third-party logistics providers in mainland China: A replicated and comparative study. Industrial Management & Data Systems, 110(9). https://doi.org/10.1108/02635571011087392

188. Wang, Q., Lai, F., & Zhao, X. (2008). The impact of information technology on the financial performance of third-party logistics firms in China. Supply Chain Management, 13(2). https://doi.org/10.1108/13598540810860976

189. Wang, I. C. (2010). The application of third party logistics to implement the Just-In-Time system with minimum cost under a global environment. Expert Systems with Applications, 37(3). https://doi.org/10.1016/j.eswa.2009.07.030

190. Wang, J., Wang, J. qiang, & Zhang, H. yu. (2016). A likelihood-based TODIM approach based on multi-hesitant fuzzy linguistic information for evaluation in logistics outsourcing. Computers and Industrial Engineering, 99. https://doi.org/10.1016/j.cie.2016.07.023

191. Wanke, P., Arkader, R., & Hijjar, M. F. (2007). Logistics sophistication, manufacturing segments and the choice of logistics providers. International Journal of Operations and Production Management, 27(5). https://doi.org/10.1108/01443570710742401

192. Wilding, R., & Juriado, R. (2004). Customer perceptions on logistics outsourcing in the European consumer goods industry. International Journal of Physical Distribution and Logistics Management, 34(8). https://doi.org/10.1108/09600030410557767

193. Wolf, C., & Seuring, S. (2010). Environmental impacts as buying criteria for third party logistical services. International Journal of Physical Distribution and Logistics Management, 40(1–2). https://doi.org/10.1108/09600031011020377

194. Wong, C.Y. and Karia, N., 2010. Explaining the competitive advantage of logistics service providers: A resource-based view approach. International Journal of Production Economics, 128(1), pp.51-67.

195. Yang, Q., & Zhao, X. (2016). Are logistics outsourcing partners more integrated in a more volatile environment? International Journal of Production Economics, 171. https://doi.org/10.1016/j.ijpe.2015.09.036

196. Yang, Q., Wang, Q., & Zhao, X. (2019). A taxonomy of transaction-specific investments and its effects on cooperation in logistics outsourcing relationships. International Journal of Logistics Research and Applications, 22(6). https://doi.org/10.1080/13675567.2018.1552931

197. Yeung, K., Zhou, H., Yeung, A. C. L., & Cheng, T. C. E. (2012). The impact of third-party logistics providers capabilities on exporters performance. International Journal of Production Economics, 135(2). https://doi.org/10.1016/j.ijpe.2011.10.007

198. Yeung, A. C. L. (2006). The impact of third-party logistics performance on the logistics and export performance of users: An empirical study. Maritime Economics and Logistics, 8(2). https://doi.org/10.1057/palgrave.mel.9100155

199. Yuan, Y., Chu, Z., Lai, F., & Wu, H. (2020). The impact of transaction attributes on logistics outsourcing success: A moderated mediation model. International journal of production economics, 219, 54-65.

200. Yuan, Y., Chu, Z., Lai, F., & Wu, H. (2020). The impact of transaction attributes on logistics outsourcing success: A moderated mediation model. International Journal of Production Economics, 219. https://doi.org/10.1016/j.ijpe.2019.04.038

201. Zailani, S., Shaharudin, M. R., Razmi, K., & Iranmanesh, M. (2017). Influential factors and performance of logistics outsourcing practices: an evidence of malaysian

companies. Review of Managerial Science, 11(1). https://doi.org/10.1007/s11846-015-0180-x

202. Zarbakhshnia, N., Wu, Y., Govindan, K., & Soleimani, H. (2020). A novel hybrid multiple attribute decision-making approach for outsourcing sustainable reverse logistics. Journal of Cleaner Production, 242. https://doi.org/10.1016/j.jclepro.2019.118461

203. Zhang, X., Li, Z., & Li, G. (2023). Impacts of blockchain-based digital transition on cold supply chains with a third-party logistics service provider. Transportation Research Part E: Logistics and Transportation Review, 170, 103014.

204. Zhou, G., Min, H., xu, C., & Cao, Z. (2008). Evaluating the comparative efficiency of Chinese third-party logistics providers using data envelopment analysis. International Journal of Physical Distribution & Logistics Management, 38(4). https://doi.org/10.1108/09600030810875373

205. Zhu, J., Lean, H. S., & Ying, S. K. (2002). The third-party logistics services and globalization of manufacturing. International Planning Studies, 7(1). https://doi.org/10.1080/13563470220112616

206. Zhu, W., Ng, S. C. H., Wang, Z., & Zhao, X. (2017). The role of outsourcing management process in improving the effectiveness of logistics outsourcing. International Journal of Production Economics, 188. https://doi.org/10.1016/j.ijpe.2017.03.004

207. Zúñiga, R., & Martínez, C. (2016). A third-party logistics provider: To be or not to be a highly reliable organization. Journal of Business Research, 69(10). https://doi.org/10.1016/j.jbusres.2016.03.009

2.9 References List of chapter 2

Akbari, M. (2018). Logistics outsourcing: a structured literature review. *Benchmarking: An International Journal.*

Ali, M. H., Suleiman, N., Khalid, N., Tan, K. H., Tseng, M. L., & Kumar, M. (2021). Supply chain resilience reactive strategies for food SMEs in coping to COVID-19 crisis. *Trends in food science & technology*, 109, 94-102.

Barker, J. M., Gibson, A. R., Hofer, A. R., Hofer, C., Moussaoui, I., & Scott, M. A. (2021). A competitive dynamics perspective on the diversification of third-party logistics providers' service portfolios. *Transportation Research Part E*: Logistics and Transportation Review, 146, 102219.

Denyer, D., & Tranfield, D. (2009). Producing a systematic review.

Fink, A. (1998). Conducting Research Literature Reviews: From Paper to the Internet. Sage Publication Ltd.

Govindan, K., Khodaverdi, R., & Vafadarnikjoo, A. (2016). A literature review on the strategic role of third-party logistics providers (TPLs) in supply chain management. *The International Journal of Production Economics*, 183, 201-216.

Ha, N. T., Akbari, M., & Au, B. (2022). Last mile delivery in logistics and supply chain management: a bibliometric analysis and future directions. *Benchmarking: An International Journal*(ahead-of-print).

Hsiao, H. I., Kemp, R. G. M., Van der Vorst, J. G. A. J., & Omta, S. O. (2010). A classification of logistic outsourcing levels and their impact on service performance: Evidence from the food processing industry. *International journal of production economics*, 124(1), 75-86.

Jothimani, D., & Sarmah, S. P. (2014). Supply chain performance measurement for third party logistics. *Benchmarking: An International Journal*, 21(6), 944-963.

Konig, A. and Spinler, S. (2016), "The Effect of Logistics Outsourcing on the Supply Chain Vulnerability of Shippers", *The International Journal of Logistics Management*, Vol. 27 No. 1, pp. 122-141.

Langley, C.J., Capgemini, 2015. 2015 Third-party logistics study: The State of Logistics

Outsourcing, Available in ⟨www.3pl.com⟩ [Accessed].

Lavie, D. (2006). Interconnected firms and the value of network resources. In Advances in Mergers and Acquisitions (Vol. 5, pp. 127-141). Emerald Group Publishing Limited.

Lin, Y., Luo, J., Cai, S., Ma, S., & Rong, K. (2016). Exploring the service quality in the e-commerce context: a triadic view. Industrial Management & Data Systems.

Maloni, M. J., & Carter, C. R. (2006). Opportunities for research in third-party logistics. *Transportation journal*, 45(2), 23-38.

Malviya, R. K., & Kant, R. (2015). Green supply chain management (GSCM): a structured literature review and research implications. *Benchmarking: An international journal.*

Meline, T. (2006). Selecting studies for systemic review: Inclusion and exclusion criteria. *Contemporary issues in communication science and disorders*, 33(Spring), 21-27.

Nutley, S. M., & Davies, H. T. O. (2002). Evidence-based Policy& Practice: Moving from Rhetoric to Reality. *Research Unit for Research Utilisation*.

Pawson, R. (2006). Evidence-based policy: The promise of systematic review. Evidence-based policy: A realist perspective, 2-16.

Rojko, A. (2017). Industry 4.0 concept: Background and overview. *International journal of interactive mobile technologies*, 11(5).

Skjoett-Larsen, T., Halldorsson, A., Andersson, D., Dreyer, H., Virum, H., & Ojala, L. (2006). Third party logistics–a Nordic approach. *International Journal of Value Chain Management*, 1(2), 190-204.

Sinkovics, R. R., Kuivalainen, O., & Roath, A. S. (2018). Value co-creation in an outsourcing arrangement between manufacturers and third party logistics providers: resource commitment, innovation and collaboration. *Journal of Business & Industrial Marketing.*

Rousseau, D. M., Manning, J., & Denyer, D. (2008). 11 Evidence in management and organizational science: assembling the field's full weight of scientific knowledge through syntheses. *Academy of Management Annals*, 2(1), 475-515.

Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of cleaner production*, 16(15), 1699-1710.

Smith, C. (2020). The structural vulnerability of healthcare workers during COVID-19: Observations on the social context of risk and the equitable distribution of resources. *Social Science & Medicine*, 258, 113119.

Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British journal of management*, 14(3), 207-222.

Vietnam Briefing (2022, March 25). How the Russia-Ukraine Conflict is Affecting Businesses in Vietnam. Vietnam Briefing News. https://www.vietnam-briefing.com/news/how-russia-ukraine-conflict-is-affecting-businesses-in-vietnam.html/

Yeung, K., Zhou, H., Yeung, A. C., & Cheng, T. C. E. (2012). The impact of third-party logistics providers' capabilities on exporters' performance. *International Journal of Production Economics*, 135(2), 741-753.

2.10 Appendices

Appendix 2A: Journal articles classification.

Row Labels	Count of Journal
Ain Shams Engineering Journal	1
Annals of Operations Research	2
Asia Pacific Journal of Marketing and Logistics	2
Benchmarking for Quality Management & Technology	1
Benchmarking: An International Journal	9
British Food Journal	1
Central European Journal of Operations Research	1
Cogent Business & Management	2
Computers & Industrial Engineering	3
Computers & Operations Research	1
Construction management and economics	1
Energy Procedia	1
European journal of marketing	2
European Journal of Operational Research	1
European management journal	2
Expert Systems with Applications	7
Industrial Management & Data Systems	6
Industrial marketing management	4
International journal of computational intelligence systems	1
International Journal of Computer Integrated Manufacturing	1
International Journal of Logistics Research and Applications	6
International Journal of Logistics: Research and Applications	1
International Journal of Operations & Production Management	3
International Journal of Physical Distribution & Logistics Management	22
International Journal of Production Economics	16
International Journal of Production Research	5
International Journal of Purchasing and Materials Management	1
International Journal of Retail & Distribution Management	1
International Journal of Systems Science: Operations & Logistics	1
International Planning Studies	1
Journal of Air Transport Management	1
Journal of ambient intelligence and humanized computing	1
Journal of Business Logistics	8
Journal of Business Research	1
Journal of Cleaner Production	1
Journal of Enterprise Information Management	4
Journal of Global Operations and Strategic Sourcing	2
Journal of Hospitality and Tourism Insights	1
Journal of Korea Trade	1
Journal of Manufacturing Technology Management	1
Journal of Marketing Channels	1

Journal of Marketing Theory and Practice	1
Journal of Modelling in Management	2
Journal of Multi-Criteria Decision Analysis	1
Journal of Operations Management	1
Journal of Purchasing and Supply Management	2
Journal of Strategy and Management	1
Journal of Supply Chain Management	4
Journal of technology management in china	1
Journal of the Chinese Institute of Industrial Engineers	1
Kybernetes	1
Logistics Information Management	1
Logistics Research	1
Management research news	3
Managing Service Quality: An International Journal	1
Maritime Economics & Logistics	3
Multimodal Transportation	1
Omega	3
Production Planning & Control	4
Resources, Conservation and Recycling	1
Review of Managerial Science	1
Sage Open	1
Service Business	1
Soft Computing	1
Strategic Outsourcing: An International Journal	4
Success Factors in Logistics Outsourcing	2
Supply Chain Forum: An International Journal	2
Supply Chain Management: An International Journal	8
Sustainable Production and Consumption	1
The Asian Journal of Shipping and Logistics	2
The International Journal of Logistics Management	9
The Service Industries Journal	1
Transport	2
Transportation Research Part E: Logistics and Transportation Review	11
Grand Total	**207**

Appendix 2B: Distribution of theories used in the researching period.

Count of Theoretical Framework	Column Labels																				
Row Labels	1998	2003	2005	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Grand Total
Agency theory	1																		1		2
Agency Theory, Network theory																				1	1
Classical utility theory				1																	1
Contingency Theory							2												1		3
Contracting theory							1														1
Customer value theory							1														1
Dependency theory (DT) and Network Theory														1							1
Expectancy-disconfirmation (E/D) theory							1														1
Fuzzy Set Theory						2			1				1		1			1	1		7
Institutional theory and Transaction Cost Economics																1					1
Network theory							1			1			1								3
Organizational information processing theory (OIPT)												1									1
Relational exchange theory								1					1								2
Resource based view		1	1		1	1	5	2	1	2			1	1	2	1					19
Resource based view and coordination theory																		1			1
Resource based view and System theory																		1			1
Resource based view and Transaction Cost Economics																		1			1
Resource based view, Core comptency, Principle agent theory													1								1
Resource dependency theory										1		1					1				3
Social Exchange Theory						2	2	1	1				1				1				8
Social exchange theory and Transaction Cost Economics, Resource based view														1							1
Stakeholder theory															1						1
Stakeholder theory, cumulative prospect theory (CPT)																			1		1
Transaction Cost Economics							1	1	2		1		1	1		1		1		1	10
Transaction Cost Economics and social exchange theory					1																1
Transaction Cost Economics and Resource based view					1		1			1	1										4
Transaction cost economics and resource dependence theory									1												1
Transaction Cost Economics, Network theory										1											1
Transaction Cost Economics, Resource based view and SCM theory								1													1
Transaction Cost Economics, SCM theory, Resource based view																1					1
Transaction cost, resource-based and supply chain management theory							1														1
Western-derived theory					1																1
Grand Total	1	1	1	1	4	5	16	6	6	6	2	2	7	4	4	4	2	5	4	2	83

Appendix 2C: Distribution of research in the researching period.

Row Labels	Desk Qualitative Research	Desk Quantitative Research	Empirical Qualitative Research	Empirical Quantitative Research	Empirical Triangulation Research	Grand Total
1992				1		1
1993				1		1
1994				1		1
1996		2		3		5
1997				1		1
1998				1		2
1999		1		1		2
2000		1				1
2002			1	1		2
2003		3	1			4
2004		1		2		3
2005		1		4		5
2006				3		4
2007		2	1	8		12
2008		1		9		12
2009		1	2	5		8
2010		2	2	19		25
2011			3	11		16
2012		1	1	9	1	13
2013		1	4	7	1	15
2014		2	2	1		5
2015				3		4
2016			4	7	1	13
2017			2	2		5
2018				6		6
2019			2	4		8
2020		2	2	6		11
2021		1		6		9
2022			4	1		7
2023			2	2		6
Grand Total	**22**		**33**	**25**	**124**	**3** **207**

Chapter 3: The achievement of network resources in logistics outsourcing: Insights from a thematic analysis

3.1 Abstract

Purpose: This study aims to investigate the methods for attaining network resources, the competitive advantages they confer, the specific benefits derived, and the key determinants influencing their achievement in logistics outsourcing.

Design/Methodology/Approach: This paper conducted a series of semi-structured interviews with 30 international and local enterprises that are currently logistics service users located in Vietnam. After that, thematic analysis is used to identify and analyze themes related to the determinants, methods, competitive advantages, and benefits extracted from network resources.

Findings: Under the lens of extended Resource-Based View theory (ERBV) and the application of thematic analysis, the study identifies four primary themes: methods for achieving network resources, determinants during the network resources achievement, resulting competitive advantages, and specific benefits gained. Specifically, it identifies twelve sub-themes and nine second-layered sub-themes, offering a comprehensive understanding of network resource dynamics in logistics outsourcing.

Originality: This paper provides two theoretical implications for future research on network resources. Firstly, it enhances understanding of network resource determinants in logistics outsourcing. Secondly, it sheds light on how enterprises achieve network resources for competitive advantages and specific benefits. Additionally, it offers practical insights for logistics managers to optimize network resources in the logistics outsourcing process to enhance competitiveness.

Limitations: Limitations include the exclusive focus on the logistics service user's perspective only and participants from companies in Vietnam. Future research should consider providers and expand the study's cultural and geographic scope for broader insights.

Keywords: logistics outsourcing, network resources, extended resource-based view theory.

3.2 Introduction

Over the past two decades, the pivotal role of logistics providers in enhancing the competitiveness of enterprises has become increasingly evident (Maloni & Carter, 2006; Jothimani & Sarmah, 2014). Logistics providers play a vital strategic role in daily operations of companies, especially in critical situations where they help minimize adverse supply chain impacts. Driven by globalization and advancements in information technology, an expanding number of manufacturers are choosing to outsource their logistics operations to third-party logistics (3PL) providers. This strategic decision aims to enhance supply chain performance and achieve competitive advantages (Lai *et al*., 2008).

Through the expertise of 3PL providers, businesses seek to reduce costs, improve customer service, and ultimately boost overall competitiveness (Chu & Wang, 2012; Lai *et al*., 2008; Zhu *et al*., 2017). From the theoretical perspective, the significance of partnerships in logistics outsourcing, highlights the intricate relationship between service providers and their customers as a key driver of success (Deepen, 2007). Miguel *et al*. (2014) stress the positive impact of buyer-supplier relationships on operational performance and value creation. Meanwhile, creating and nurturing partnerships with logistics providers is crucial for improving company performance (Chu and Wang, 2012). McIvor *et al*. (2008) acknowledge outsourcing as a valuable strategy for cost reduction and performance enhancement within organizations. Moreover, it helps manage demand uncertainty by capitalizing on logistics service providers' economies of scale across various sectors (Hätönen and Eriksson, 2009).

To investigate the use of 3PL services, Arroyo *et al*. (2006) compared Mexican logistics firms in Europe and the USA. They found that Mexican firms prioritized customer service and showed a strong inclination to outsource logistics, concentrating on core functions. In contrast, European

and American companies adopted a more tactical approach, emphasizing function integration in their logistics outsourcing endeavors.

The efficacy of logistics outsourcing has been an argumentative topic, with varying perspectives on whether its benefits outweigh the risks of potential relationship breakdowns. Critics contend that outsourcing does not consistently yield improved service and cost savings (Gerwig, 1999; Watjatrakul, 2005). Unfavorable outcomes have been reported, shedding light on the adverse consequences linked to unsuccessful experiences (Bahli & Rivard, 2003). Furthermore, extensive research reveals widespread dissatisfaction among managers regarding logistics outsourcing outcomes (Oshri *et al*, 2019). Decision-makers stress the importance of assessing the risks tied to logistics outsourcing (Huang *et al*., 2019). To be more specific, alongside the anticipated benefits, logistics outsourcing entails inherent risks and challenges. Concerns include the loss of control over logistics activities, potential information leaks, and the added efforts and costs required for managing outsourcing arrangements (Lau & Zhang, 2006; Yang *et al*., 2016). The failure rate in logistics outsourcing remains notedly high, as previous studies have highlighted (Yang *et al*., 2016). The gravity of these risks has led some prominent Chinese firms, like JD.com and Alibaba, to eschew logistics outsourcing altogether and instead internalize their logistics operations by establishing in-house systems (Zhu *et al*., 2017). Consequently, the attainment of success in logistics outsourcing has become a pressing concern for both 3PL users and providers.

Moreover, limited research has explored whether these significant competitive advantages and potential challenges vary among companies, particularly those utilizing logistics services, considering potential contextual differences.

Although significant attention has been given to exploring the nature of resources in providing a competitive advantage (Barney 1991; Lavie 2006), not much attention has been given to network

resources resulting from an alliance partner in the context of logistics outsourcing. Based on the theoretical framework of the extended resource-based view (ERBV) of firms, our study aims to empirically examine the role of network resources in the logistics outsourcing process. By analyzing data collected from 30 logistics users, we seek to enhance our understanding of how network resources are applied and utilized in partnerships with logistics providers. Specifically, we aim to identify the key drivers and barriers associated with the utilization of network resources, as well as explore the competitive advantages that can be derived from such partnerships. To do this, the research questions are presented as follows:

1. How do companies achieve network resources from logistics providers?
2. What are the drivers and barriers to achieving network resources in the logistics
3. What are the competitive advantages gained from achieving network resources?

The following section presents our theoretical framework, which outlines the utilization of network resources within the logistics outsourcing process (see Figure 3.1). Subsequently, we provide a detailed account of the methodology employed to evaluate and test this framework. Specifically, we conducted interviews with a sample of 30 companies, comprising both local and international organizations operating in Vietnam. In the final section, we discuss the implications of our research findings, acknowledge the limitations of our study, and propose avenues for further investigation.

3.3 Literature Review

3.3.1 Logistics outsourcing

Outsourcing is a prominent strategy for addressing complex issues like customer satisfaction and competitive advantages (Aktas *et al*., 2011; Konig & Spinler, 2016; Zhu *et al*., 2017). Logistics outsourcing involves delegating logistics tasks to external firms (Govindan *et al*., 2016). The rise

of third-party logistics providers (3PLs) in the 1990s has garnered academic attention (Chu and Wang, 2012).

As global competition and supply chain complexity grow, outsourcing logistics to 3PLs gains importance (Aktas *et al*., 2011; Konig & Spinler, 2016). As cited by Juga *et al*. (2010), found that around 80% of firms outsource parts of their logistics operations. A key driver is 3PLs' capacity to provide specialized knowledge and expertise to interested firms.

The keywords "logistics outsourcing", "logistics providers" and "logistics alliances" are used interchangeably to describe outsourcing activities simply ranging from outsourcing single logistics activities such as transportation, warehouse, or packaging services to an integrated and complicated logistics process (Konig & Spinler, 2016). In their study (Hsiao *et al*., 2011), a comprehensive analysis led to the identification of five key logistics activities. These activities encompassed transportation, packaging, transportation management, inventory management, and distribution network design. The research findings shed light on the fundamental components that contribute to efficient and effective logistical operations. Moreover, to gain more understanding of logistics services, Hsiao (2010) has classified it into four different levels of logistics (See table 3.1).

Table 3.1:Four levels of the logistics services, applied from Hsiao (2010).

Level	**Description**	**Type**
1	Warehousing and transportation services	Execution
2	Logistics value-added services: packaging and labeling	Execution

3	Inventory management and transportation management.	Planning and control
4	Distribution network management services.	Execution, planning and control

The first level of logistics activities pertains to the execution stage of fundamental tasks, such as transportation and warehousing. In larger companies, Table 3.1 reveals a significant inclination towards outsourcing these activities. Moving on to the second level, we encounter value-added activities (e.g. activities like cutting, mixing, or packing) that bring additional worth to the products or services. The third level encompasses the context of planning and control. At this level, certain activities can be outsourced, such as inventory management (e.g. activities like sales forecasting or stock control) and transportation management (e.g. activities like route planning or scheduling). At the highest level of logistics activities suitable for outsourcing lies distribution network design. This level involves strategic decision-making, wherein choices are made regarding road carrier selection, location and site analysis, and logistics network management.

3.3.2 The development of extended Resource-Based View theory (ERBV)

This study adopts the extension of Resource-Based View (RBV) theory as a foundational theoretical framework to examine the competitive advantages derived from logistics outsourcing. Originally, the RBV framework has gained significant influence in strategic management. Building on the study of Penrose (1959), RBV considers firms as unique entities with distinct resource bundles. Traditionally focused on individual firms, RBV can apply to competitive environments with independent firms. Recent evidence highlights resource transfer through direct interfirm interactions, challenging RBV's proprietary assumption, and significantly impacting firm performance (Lavie, 2006). The same author (2006) suggests that while proponents of RBV

correctly emphasized the non-tradability and imperfect mobility of valuable resources, they overlooked direct resource sharing and the indirect transfer of associated benefits. Lavie (2006) challenged the fundamental assumption of the traditional RBV, which posits that firms must fully own or control the resources from which they derive competitive advantage. Instead, the same author (2006) argued that competitive advantage can also stem from shared or accessed resources within inter-organizational networks, thereby extending the RBV framework. In contrast to the traditional RBV's focus on the favor of resource idiosyncrasy and resource immobility, the ERBV posits that firms can achieve competitive advantage through the access and utilization of externally embedded resources, particularly those obtained via inter-organizational relationships, alliances, and collaborative networks. This perspective underscores the strategic value of resource sharing, co-development, and mutual access, suggesting that advantage may stem not only from ownership but also from the ability to operate and leverage resources across firm boundaries. Lavie (2006) advances this view by proposing an integrative framework that combines elements of both the RBV and network theory, arguing that the RBV can be extended to account for network resources—those acquired through partnerships and strategic collaborations. This extension broadens the traditional boundaries of the RBV by incorporating the dynamic capabilities that emerge through cooperative arrangements, thereby enhancing a firm's access to a diverse set of complementary assets. Within the logistics outsourcing context, this implies that firms do not solely rely on their internal capabilities but also increasingly depend on the competencies and technological assets of their logistics partners, which may serve as critical enablers of innovation, flexibility, and competitive differentiation (See Figure 3.1).

3.3.2.1 Network resources

In the paper, Lavie (2006) introduces the concept of network resources, which are derived from alliance partnerships between firms. These alliances facilitate the attainment of benefits and access to resources possessed by partner firms, thereby enhancing a company's competitive advantage. Lavie's work represents an amalgamation of the RBV theory and network theory, called the Extended RBV (ERBV) framework.

Lavie (2006) defined network resources as follows:

"Resources from alliance partners that are transferred through direct interfirm interactions have a significant impact on firm performance. These resources can be described as network resources that expand the firm's range of opportunities.".

According to Lavie (2006), inter-firm relationships play a pivotal role in enabling organizations to leverage strategic resources, encompassing both shared and non-shared resources, to gain competitive advantages and reap additional benefits. By harnessing the potential of these inter-firm collaborations, companies can augment their resource base and enhance their overall performance. In the context of a firm's integration into a network of alliances, it becomes crucial to differentiate between the internal resources that the firm owned (Barney, 1991) and the network resources owned by its alliance partners. These network resources can potentially be accessed by the focal firm through its relationships with these partners (Gnyawali & Madhavan, 2001; Lavie, 2006). Network resources encompass a wide range of tangible and intangible assets held by partners, including human resources, financial assets, marketing efforts, R&D investments, and reputation. Leveraging these resources enables a firm to enhance its performance through three key mechanisms of value creation (Lavie, 2006). By effectively harnessing the collective power of network resources, a firm can bolster its competitive advantage and drive overall success.

Moreover, Lavie (2007) confirmed the value of creating capability of network resources in his empirical study 367 software companies and their 20,779 alliances. It was concluded that the contribution of network resources to value creation varies with the complementarity of those resources. To explain, this alliance partnership will limit the opportunistic characteristics of partners (e.g. bargaining power). In the context of logistics outsourcing, there is a notable shortage of studies that delve into the complexities of how value is created in the interactions between

logistics clients and logistics providers. Specifically, the question of "What are the specific benefits gained from partnering with a particular logistics provider?" remains unclear and requires further investigation. While enterprises are known to carefully evaluate the "drivers to outsource" and the specific logistics activities for outsourcing, including the underlying motivations for making such strategic decisions, conducting comprehensive benefit analyses, and reviewing information about potential suppliers, it is notable that Vaxevanou & Konstantopoulos (2014) did not provide a clear justification for the drivers and obstacles associated with establishing partnership alliances with logistics providers. Moreover, building on the insights presented by Hsiao *et al*. (2010) regarding the intricate relationship between levels of outsourcing, performance outcomes, and the attributes of supply chains, this research will also investigate the factors driving and hindering the acquisition of network resources within the context of logistics outsourcing.

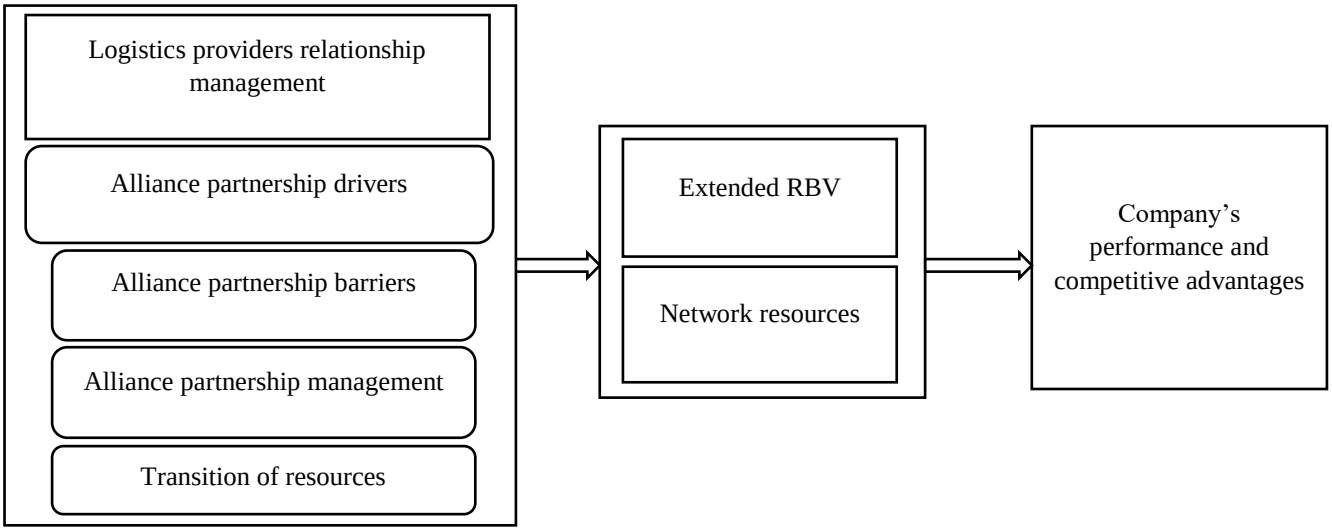

Figure 3.1:Theoretical framework of network resources within logistics outsourcing.

Lavie (2006) also points out different types of rent extracted such as internal rent, inbound spillover rent, outbound spillover rent, and appropriated relational rent in a partnership (Lavie, 2006; Moxham & Kauppi, 2014) (See Table 3.2 and Figure 3.2). Huggins (2010) states that although

inter-firm partnerships can be seen as competitive advantages for parties involved; however, not all inter-organizational relationships are likely to accrue competitive advantages for firms. Hence, the researcher will investigate the use of network resources from an alliance partnership between clients and logistics providers to accrue private benefits and achieve competitive advantages under the perspective of ERBV theory.

Table 3.2: 4 types of rent extracted from alliance partnerships. Adopted by Lavie (2006).

Rent type	**Definition**
Internal Rent	Internal rent refers to the value generated within a firm due to the scarcity of resources, resulting in limited availability in the short term. It reflects the additional value that a company can extract from its specialized resources compared to what other firms can derive from similar resources. Also, to maximize the utilization of their resources, companies have the opportunity to tap into and leverage the complementary resources possessed by their alliance partners. By accessing and effectively utilizing these partner resources, firms can enhance their overall capabilities and extract greater value from their resource base. This strategic leveraging of complementary resources through alliances enables companies to expand their competitive advantage and foster mutually beneficial relationships. One example of this is the reputation of prominent alliance partners has a notable impact on the reputation of start-up firms, leading to the increase in stock price.

Inbound Spillover Rent	The gains of private benefits by accessing unintendedly the shared and non-shared resources of partners from focal firms. The formation of alliances enables firms to gain access to shared resources from their partners. However, it becomes challenging to prevent the leakage of knowledge associated with these resources. The nature of alliances involves the exchange and utilization of valuable knowledge and expertise, making it inherently difficult to completely safeguard against the unintended dissemination of such knowledge. This knowledge leakage may occur through various channels, including informal communication, employee mobility, or unintentional information sharing.
Outbound spillover rent	In contrast to the inbound spillover rent, the resources of the focal firm are also susceptible to unintended leakage, which ultimately benefits the alliance partners, including logistics providers.
Appropriated Relational Rent	The mutual benefits gained from partners in an alliance partnership through exchanging knowledge, collaboration, and co-develop idiosyncratic resources. Relational rents arise from the utilization of relationship-specific assets, knowledge-sharing practices, complementary resources, and effective governance mechanisms. However, it is crucial to note that these rents can only be generated from resources that are intentionally committed to and jointly possessed by both participating parties. In essence, the extraction of relational rents

	heavily relies on the intentional commitment and shared ownership of resources by the entities engaged in the relationship.

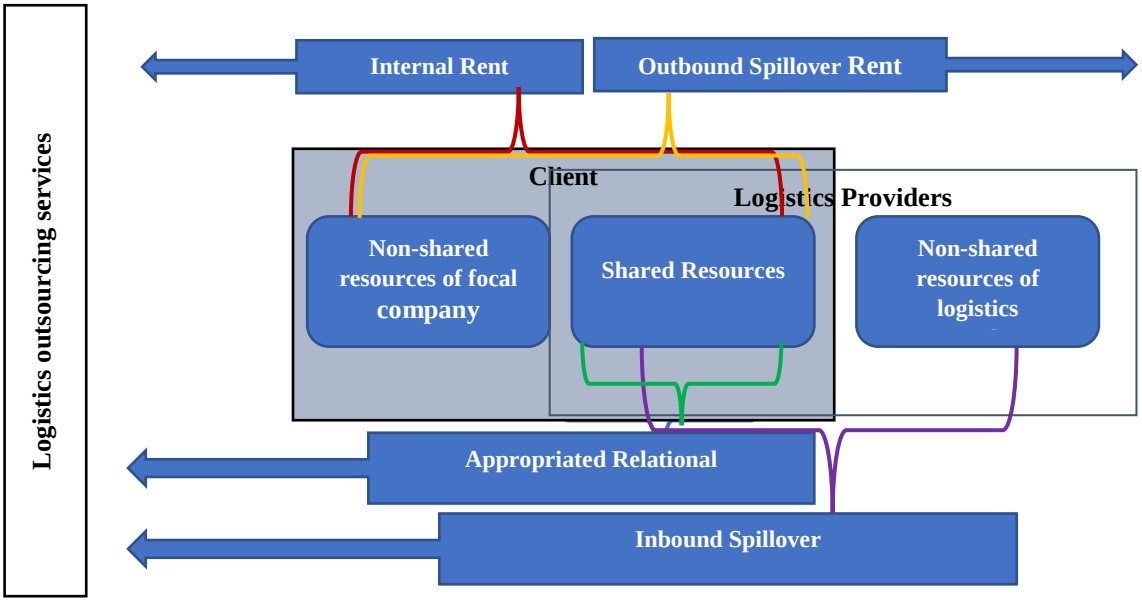

Figure 3.2: Relational view in the context of logistics outsourcing (Adapted from Lavie, 2006; Moxham & Kauppi, 2014).

3.4 Methodology

3.4.1 Methodological approach

This exploratory study is conducted with the objective of achieving two key research goals. Firstly, it aims to investigate the distinctive competitive advantages gained from network resources within the logistics outsourcing context. Secondly, it seeks to enrich the literature regarding the research question 1 and 2 related to drivers, barriers, and methodologies for acquiring network resources. To accomplish these objectives, an inductive approach is adopted, employing qualitative research techniques to conceptualize the application of network resources and their impact on the logistics performance of companies. Inductive reasoning, as described by Hayes *et al*. (2010), serves as the foundation for this study, allowing the derivation of principles from a set of observations and

enabling generalizations to be made for the entire population. The methodology entails the collection of data, the identification and coding of key points within the data, and the grouping of codes with similar content to formulate concepts for theoretical analysis. Qualitative research serves as the chosen research methodology, enabling an exploration and understanding of the subjective experiences, perspectives, and meanings of individuals or groups involved in the study. Ensuring trustworthiness is crucial in qualitative research to establish the reliability and validity of research findings. Ashrafi (2020) highlights four factors that contribute to this trustworthiness: credibility, transferability, dependability, and confirmability. Credibility is attained by employing a reputable research methodology, as demonstrated in this study through the use of an inductive approach and purposive sampling. Transferability is accomplished by providing detailed descriptions of the research context and phenomenon, along with the use of appropriate sampling criteria. To ensure a high level of dependability, a precise and comprehensively documented process of data collection, analysis, and interpretation is implemented and closely monitored (Ashrafi, 2020).

3.4.2 Data collection

In order to ensure a rich and in-depth analysis of information, this research employed purposive sampling when selecting interviewees. As Patton (2002) elucidates, qualitative research diverges from quantitative research, which relies on large and random samples for statistical analysis, by prioritizing relatively smaller samples. Purposive sampling, a sampling technique employed in this study, entails the selection of participants based on the specific criteria mentioned below, aiming to include individuals who are most likely to provide pertinent and valuable insights for the research question at hand. Unlike probability sampling, where participants are chosen at random, purposive sampling involves a purposeful selection process guided by distinct characteristics, traits, or attributes pertinent to the population under investigation.

In this study, the participants were selected based on the following criteria:

1. Holding a management position in the company and being involved directly in logistics outsourcing projects.
2. Either a SMEs (10-200 employees) or big corporations (over 200 employees)
3. International and local companies that are geographically based in Vietnam.
4. Having a minimum of a bachelor's degree or higher level of education. Having more than 7 years of experience in logistics outsourcing projects.
5. Being from a variety of industries, departments and positions that are involved in logistics outsourcing projects.

The qualitative data for this study was gathered through semi-structured in-depth interviews, a method chosen to facilitate a comprehensive exploration of participants' perspectives and experiences. The questionnaire utilized in this research comprised two primary sections. The first part aimed to collect demographic information from the participants, encompassing factors such as their experience, position, and engagement in logistics activities outsourcing to logistics providers. The second focused on participants' responses to research questions, using open-ended questions to elicit their viewpoints and insights regarding drivers, barriers, methods, and performance improvement from logistics outsourcing.

After obtaining the necessary ethical approval from the companies, the potential participants for this study were identified through both personal and professional networks. A total of 70 individuals in leadership, managerial, and executive roles were initially approached with interview invitations. From this group, 30 participants confirmed their willingness to engage in the interview

process. The primary reason for interview rejections was the busy schedules of candidates in management positions. All interviews were conducted face-to-face during the months of June and July 2022, with each interview lasting approximately one hour. As the interviews progressed, a notable observation emerged: comparable themes began to recur consistently. This observation indicated that the data had reached a point of saturation, implying that further interviews were unlikely to yield significant new insights. Following the recommendation of Francis et al. (2010), data collection was consequently terminated after the 30th interview. Subsequently, the interviews were subjected to a rigorous review process by a research panel. They were transcribed verbatim and subsequently translated into English, ensuring the accessibility and comprehensibility of the data for analysis and interpretation.

The interviewed participants predominantly reside in Ho Chi Minh City and Hanoi, which are the two largest cities in Vietnam. The educational backgrounds of the interviewees indicate that 10 individuals possess a university degree, 19 hold master's degrees, and 1 interviewee has a Ph.D. degree. To ensure the validity, credibility, and reliability of the responses, participants were purposively selected based on their management positions and have at least 7 years of experience in the field of logistics outsourcing (See Appendix 3A). This deliberate selection criterion aimed to gather insights from individuals who possess relevant expertise and knowledge.

3.4.3 Data Analysis

In this particular study, the research methodology of thematic analysis is employed to identify and explore novel determinants of network resources in the context of logistics outsourcing. Specifically, the analysis focuses on investigating the drivers and challenges associated with achieving network resources within an alliance partnership. The researcher will adhere to the six-

phase process of thematic analysis outlined by Braun & Clarke (2006), which encompasses tasks such as data transcription and review, code and theme generation, theme checking, clear definition of themes, and the production of a final report. By conducting a thematic analysis of the qualitative empirical data obtained from 30 participants, a thematic map (Figure 3.3) is constructed, illustrating the identified themes and their corresponding sub-themes related to network resources in the logistics outsourcing context. Through this analytical process, four main themes, twelve sub-themes, and nine second-layered sub-themes are discerned, providing a comprehensive understanding of the factors influencing network resources within the logistics outsourcing domain.

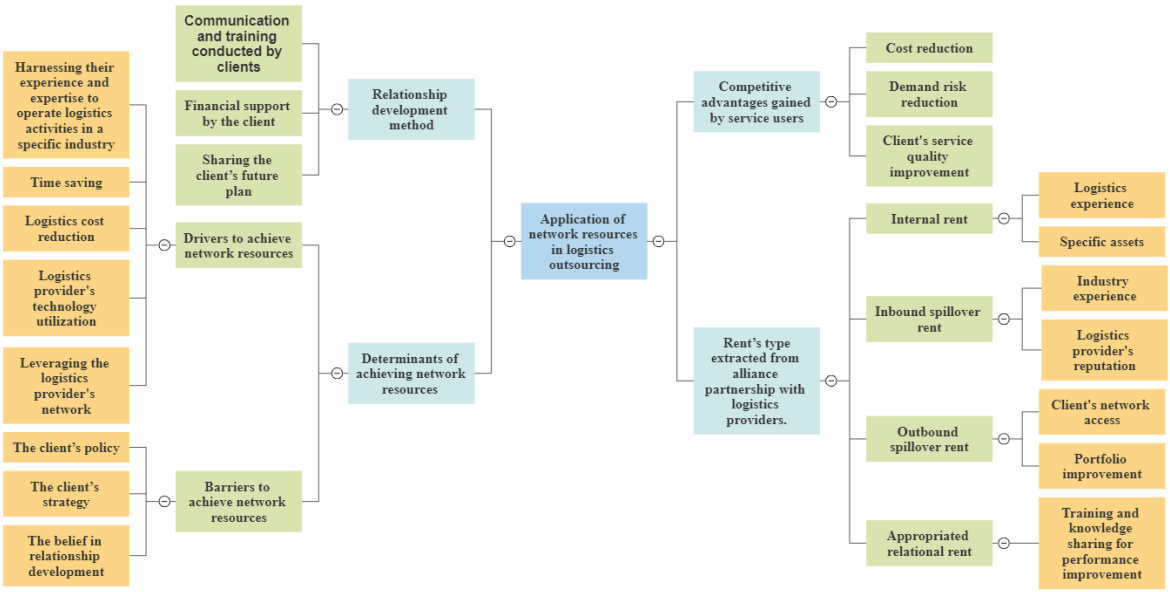

Figure 3.3: Thematic analysis web

Data source: Author's own work

3.5 Findings

3.5.1 Theme 1: Methods for Achieving Network Resources by Logistics Service Users

This theme reflects methods used by companies to develop partnerships with their logistics providers during the contract in practice and is classified into three main subthemes including

sharing the client's future plan, financial support, and communication and training (See Figure 3.4).

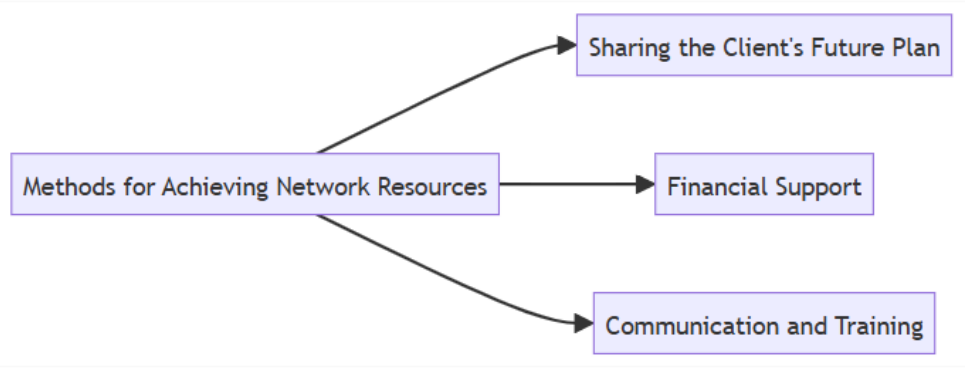

Figure 3.4: Methods for achieving network resources

The first approach suggests that the clients employ a process to develop their relationship with logistics providers by sharing their development system within the company. P6 explained: *"We have a process to develop them by sharing the development system in our company. For example, if in the near future, we expand our market into other countries and the providers have to develop themselves to work with us. […] Then we can share the resources, facilities, and equipment to achieve our future business plans."* Meanwhile, another approach is mentioned that the clients adopt a relationship development method that includes financial support for their logistics providers during operational challenges. P2 asserted: *"If they have issues related to the availability of the trucks, slow unloading, we need to support them for example. If they made some mistakes and they have to pay for it, we will help them!".* In addition, the clients use a proactive approach by implementing training programs to equip the logistics providers with the essential skills and knowledge required for efficient task performance. P5 stated: "*For the relationship development, we have the team from the regional team to daily communicate with them. We want to know are there any issues in the process so that we can help them to solve them!".*

3.5.2 Theme 2: Determinants to achieving network resources in logistics outsourcing

The present thematic analysis elucidates the determinants of network resources in an alliance partnership with logistics providers. The responses are collected from 30 participants and categorized into two primary subthemes, namely drivers and barriers (See Figure 3.5).

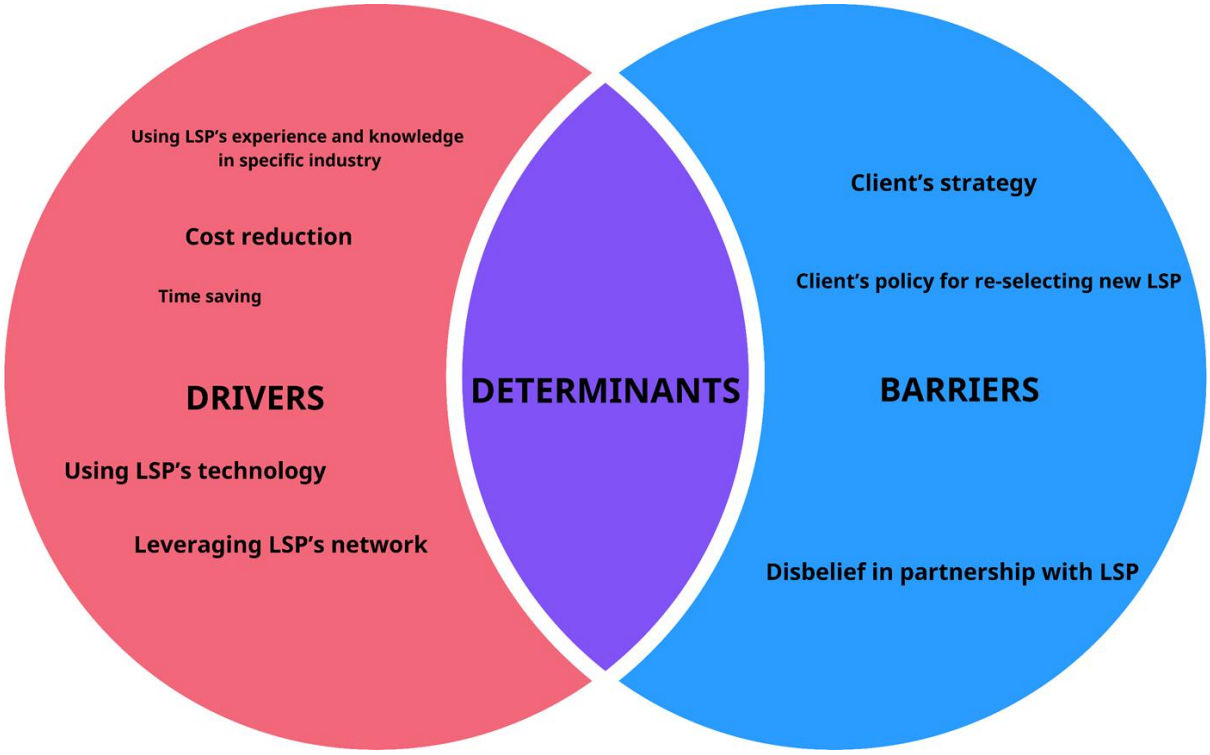

Figure 3.5: Determinants of achieving network resources in logistics outsourcing

Data source: Author's own work

3.5.2.1 Drivers to achieve network resources

The initial subtheme examines the motivating factors behind the formation of network resources with logistics providers, encompassing 5 second-layered subthemes. These include time-saving in future logistics provider selection processes, logistics cost reduction, the utilization of logistics provider's technology, leveraging the logistics provider's network, and harnessing their experience and expertise in a specific industry. First, by opting to continue working with the existing logistics

providers, the participants agreed that they save a significant amount of time that would have otherwise been spent on supplier onboarding and training activities after the reconsideration phase. P12 stated: "[…] *Actually, by resigning the new contract with the same logistics providers, we don't have to re-train a new supplier. This will save lots of time.".* Additionally, P5 added that the existing relationship between vendors and clients can also earn them priority in the selection phase. P5 shared: *"So if the supplier has a previous relationship with the company, they will get more priorities than others when we select them".*

Moreover, some participants placed a strong emphasis on cost reduction capability as a determining factor in making a decision to create an alliance partnership with the logistics providers in the selection and evaluation phase. P6 asserted: *"We focus on costs and quality. If they could provide affordable costs, we will select them and build a long-term relationship with them".* P5 articulated their company's driving force behind forging alliance partnerships with logistics providers as a means to curtail expenditures associated with physical logistics assets. P5 justified: "*My company is an international company, so we don't want to invest too much in physical logistics assets such as warehouses, trucks, etc. in Vietnam.".* Furthermore, some interviewees stated the significant importance on the technological capabilities of logistics providers, anticipating the utilization of advanced technology to meet their requirements in the future. It is demonstrated in P7's sharing*: "For example, for warehousing, they should use RFID to be selected. […] We notice that international logistics providers normally have better advanced technology capability. […] We would also like to know how they will invest in their technology infrastructure. We need to know in the future they are able to meet our expectations because we have a lot of innovations, so we need to require warehousing advanced technology utilization from logistics providers".*

Besides, some responses show that the extensive networks maintained by logistics providers serve as influential drivers in attaining network resources. These networks provide access to a wide range of distribution channels, hubs, and strategic partnerships, enabling the smooth movement of goods and services within the supply chain. P12 justified that when the company gains access to the logistics provider's established network in the customs clearance industry, it can expedite the clearance process and mitigate potential obstacles. Hence, logistics providers with a strong network in custom clearance will be prioritized in the selection phase. P12 shared: *"For choosing a logistics provider for custom clearance services, we look at the suppliers' network. If the suppliers' network in the industry is good and broad enough, it will make their provided services much faster. Then, our services will also get better and faster […] Especially, since my company does not have a broad network to deal with customs problems. […] Normally. Local suppliers have a good network in this […]".*

3.5.2.2 Barriers to achieve network resources

The second sub-theme reflects the barriers of logistics service user and the logistics providers to achieve network resources, encompassing 3 second-layered sub-themes, including the client's policy, the client's strategy, and the belief in relationship development. Initially, the lack of "trust" in relationship development was mentioned by some participants. P7 shared that: "We never trust 100%. Everything can be changed. Even when the relationship is built with them, we also keep a relationship with other backup suppliers." Additionally, P23 stated: *"In this case, we make the trial contract for them. It will take 3 to 6 months to make the final decision. Trust should be proven by facts and statistics. Then, we will consider developing the partnership with them in long-term."*. In contrast, a participant expressed the viewpoint that cultivating a strong relationship with logistics providers is not imperative and unnecessary for their organization, as they perceive themselves as a large company whose patronage is highly sought after by such providers. P24 said:

"We don't really need to create a good alliance partnership because we are a big client and a well-known company in Vietnam, so they need us more. In fact, we prefer to use short-term contracts so that the logistics providers can compete with others to improve their service quality and offer a more reasonable price in the future."

Moreover, it was highlighted that their organization's policies emerged as significant barriers impeding the establishment of robust relationships with logistics providers. P6 claimed that: *"[…] For the new contract, we have to give the criteria to re-evaluate the suppliers in both cases when we continue with the same suppliers or with new suppliers. This is the policy of our company and there are no other ways."*. Participants showed two primary factors emerged as prominent reasons hindering relationship formation with logistics providers, including the company's strategy during the Covid-19 pandemic in relation to outsourcing contracts, and the unpredictable fluctuations in customer demand. P20 said*: "The pandemic has resulted in changing customer preferences in our products line. To meet evolving customer needs, we require more adaptable logistics solutions that can quickly scale up or down based on demand fluctuations. So, we prefer to keep short-term contract with the logistics providers can also help us to be more flexible with different requirement from the customers."*

3.5.3 Theme 3: Competitive advantages extracted from network resources by logistics service user

This theme centers on the nexus between network resources and the enhancement of a company's capabilities and performance through the cultivation of a favorable partnership between clients and logistics providers. Within this context, the theme can be discerned through the identification of distinct sub-themes, which encompass the company's exemplary service quality, reduction in logistics costs, and mitigation of demand risks (See Figure 3.6).

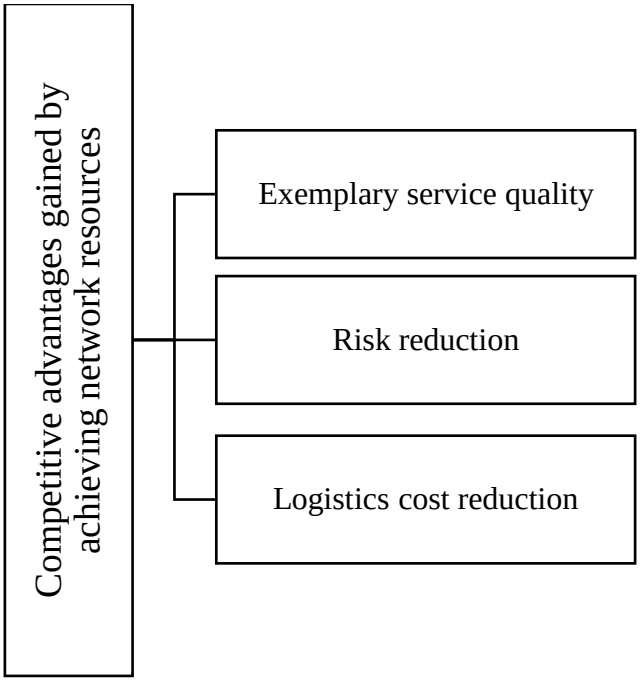

Figure 3.6: Competitive advantages gained by logistics service user.

Data source: Author's own work

The initial facet of competitive advantages sought by the client revolves around cost reduction. A significant portion affirmed their intention to minimize the overall logistics costs involved in their supply chains. This objective applies not only to the selection phase but also during the reconsideration phase. P13 stated: *"Mainly the extra costs are linked to the port. […] We have to pay both official and unofficial money. So, for those 3PLs who have networks in this area, they can help you to make it faster and save more logistics cost.".* P21 emphasized: "*We truly want to develop partnerships with those logistics providers who can help us to reduce the cost of logistics. By that, we can offer our customer a better price.".* P2 added that: *"When I have to pay an extra fee, how do they help me to save money? An example of this is when we deliver the container, we have to return the container to the shipping lines and I have to share this information with the logistics providers immediately […] The logistics provider sends an email to the shipping lines to*

ask for permission to return the truck to closer areas belonging to the shipping lines to save transport costs for their clients. If they can pay attention to reducing the cost for me, so they can build up my trust. […] Then, it leads to the contracts renewed by their clients."

The second sub-theme focuses on the augmentation of superior service quality that the client can attain and deliver to their customers by effectively leveraging logistics outsourcing services offered by logistics providers. It was agreed that their service quality has improved significantly. P19 shared that: *"We expected to improve our customer service quality by outsourcing our logistics activities to logistics providers and maintain a good partnership with them. In fact, we admit that with their expertise and experience, our transportation activities will get much better in operation. Our KPI services always get better in on-time delivery and lead time reduction. Hence, our customers are also more satisfied."* Moreover, P26 also explained: *"We do not have the experience to effectively operate and optimize our logistics activities such as warehousing and local transportation […]. The changes in customer orders and electronic products caused us so many issues in the past. Therefore, a good partnership with logistics providers can help us to be more flexible with any logistics issues. To be specific, they can use their available facilities to help us when needed. By that, our customer service will be improved, especially during Covid-19 when the customer's demand is very difficult to predict".* Moreover, another participant pointed out that logistics provider's expertise and network can help them to meet their customer's requirement. P6 stated: *"By leveraging their knowledge and established networks, we have experienced faster clearance times, reducing overall lead times and enabling us to meet our customers' demands."*

The last sub-theme is about reducing risks in operation. One participant highlights the significance of demand risk reduction as a key motivation for logistics outsourcing. The mentioned logistics service user expresses a desire to outsource their operations despite having their own trucks,

emphasizing the need to meet market demands effectively. The evaluation of logistics providers is not solely based on their overall capacity but also on their ability to provide the vehicles when needed, underscoring the importance of operational assistance in determining contract continuation. P13 shared: *"[…] We have our own trucks we still want to outsource to meet the demands. And for demand risk reduction. […] If the demand is high, they should help us to meet the market demand […]. In fact, we not only evaluate the logistics provider's capacity, but we evaluate them based on the available trucks they have when we need them. It makes no sense at all if they have a huge vehicle capacity but cannot help us. If they can successfully help us during operation, we will resign the contract with them".* Moreover, another participant emphasized on the use of advanced technology, such as a warehousing management system of logistics providers in improving warehousing performance. P27 shared: *"By leveraging the use of warehousing management system of logistics providers, we don't have to deal with issues related to inventory data because the logistics provider can ensure the real-time visibility and traceability for our inventory."*

3.5.4 Theme 4: Types of Rent Derived from Achieving Network Resources with Logistics Providers.

This theme highlights the distribution of rents extracted from the mutually beneficial relationship between clients and logistics providers in the context of logistics outsourcing. Following Lavie (2006) in the classification of specific benefits extracted, the theme is further categorized into four primary sub-themes to understand clearly the benefits of clients and logistics providers in this partnership formation, including internal rent, inbound spillover rent, outbound spillover rent, and appropriated relational rent.

3.5.4.1 Internal Rent

The initial sub-theme encompasses the concept of internal rent. Participant responses highlight the strategic utilization of shared resources offered by logistics providers within this collaborative partnership. This approach enables the participants to enhance their competitive advantages within the market. Three participants seek a long-term strategic partnership with logistics providers who can fulfill their specific asset requirements, indicating the importance of aligning with suppliers possessing the necessary resources. P8 claimed that the company looks at the assets to make decisions in the selection phase and in the relationship management phase. The participant said: *"[…] the 300-ton crawler crane is more reliable than a 180-ton crawler crane even when our transformers normally weighed 80 tons. […] the equipment age should be no more than ten years to ensure its quality. […] We want to have a strategic partner that could work with us in the long term as our products require specific assets from the suppliers. […].* Meanwhile, P24 pointed out the shortage of cold chain logistics providers in Vietnam as a significant challenge faced by his company. P24 shared: *"The shortage of cold chain logistics providers in Vietnam poses a significant challenge for our food and beverage company, particularly in our warehousing and transportation activities. The lack of specialized facilities and equipment makes it difficult to maintain the required temperature control for our perishable goods. […] Moreover, the limited availability of experienced cold chain service providers makes it challenging to ensure efficient and reliable delivery of our products to customers across the country.* Furthermore, logistics experience in operation can be seen as an interfirm resource complementarity that can leverage a client's logistics performance. P22 stated: *"The logistics provider's experience in local transportation operations effectively improves our transportation key performance indicators (KPIs). […] We don't have to deal with issues related to optimising route planning, minimising*

transit times, and enhancing overall transportation efficiency. With the knowledge of local infrastructure and regulations, logistics providers can effectively meet the unique requirements of the transportation performance in the apparel industry, such as handling delicate garments or adhering to strict delivery schedules."

3.5.4.2 Inbound spill-over rent

The second sub-theme encompasses the concept of inbound spill-over rent through the logistics provider's shared and non-shared resources. In the responses of five participants, the significance of logistics providers' reputation and industry experience emerged as key factors that they seek to attain in order to enhance their performance. Participant reveals the client's emphasis on the logistics provider's reputation and its influence on their decision-making process. The participant mentions the importance of gathering information about the supplier's reputation through their network, highlighting the significance of word-of-mouth and industry insights. Additionally, it is acknowledged that past scandals could contribute to risk reduction, further underlining the importance of reputation in mitigating potential drawbacks. P13 stated: *"we check the information related to the supplier's reputation from our networks. Moreover, if there is no scandal in the past, it is ok as we don't want any risks in operation. […] Their reputation will ensure the service quality for our customers. […] For example, they share with us the detailed statistics about their excellent reputation for on-time deliveries and efficient order tracking in the final round of our vendor selection phase […] when we choose the top 4 logistics providers to present at our site".* Meanwhile, others highlight the client's focus on the logistics provider's industry-specific experience by differentiating between general logistics experience and experience within their particular industry and placing a higher emphasis on the latter. P14 justified: *[...] they are not their experiences in logistics but the experience in our industry. If they have lots of experience to*

operate transport and warehousing activities in our industry, that is good for us. […] Sometimes, they share their experience working with other companies in Vietnam and in the electronic industry. By that, we can learn more from them to improve our business process as well!".

3.5.4.3 Outbound spill-over rent

The third sub-theme reflects the concept of outbound spill-over rent through the benefits that logistics providers unintendedly earn from the shared and nonshared resources of the clients. Four participants highlight the perception that the client's reputation as a big and influential company can positively impact the portfolio of logistics providers. P8 stated: *"[…] because we are a big client, suppliers will come to find us as they want us to be their clients. Our brandings can improve their company's portfolio."*. Meanwhile, another participant highlights the significant benefits that logistics providers can earn when working with a large company; specifically, the client's subsidiaries network. P19 shared: *"Working with a giant company like ours brings intangible benefits to logistics providers. Not only do they have the opportunity to serve our mother company, but they can also gain access to our extensive network of subsidiaries. Building a strong partnership with us opens doors to business opportunities and potential collaborations for them. It's a win-win situation where the logistics provider can expand their client list and tap into new markets through our subsidiaries. If they perform well, we will introduce them to our subsidiaries. Especially, our company is a corporation and we have hundreds of different product lines. So, it's not just about serving one client, but about the potential for multiple fruitful partnerships within our corporate ecosystem.".*

3.5.4.4 Appropriated relational rent

The last sub-theme reflects the concept of appropriated relational rent, which discusses the mutual exchange of information and collaboration of both parties to intentionally achieve mutual benefits.

Some interviewees admit that they have trained and shared their knowledge with the logistics providers during the transition phase. The justification for that is by doing that, the logistics providers could help them to improve the client's customer service quality through outstanding logistics operation performance. One participant shared that logistics providers can derive from learning from their clients through training and workshops focused on ethics and safety in operations. P8 said: *"We offer training and workshops from the company to train about ethics and safety in operation. […] Suppliers will understand more about our policy and standards to improve their performances. Then, our performance will also get improved."*. Moreover, another participant stated that gaining a deep understanding about the client's business process allows logistics providers to enhance their service quality, resulting in improved outcomes and better satisfaction for logistics service users. P13 shared: *"First, we ask them to train their staffs based on our requirements so that they can understand more about our process. […] we want to help them to improve the performance because once they do, our partnership and service quality will also become better."* Additionally, another participant asserted that logistics providers can derive from learning the insights shared by clients about furniture industry. P27 shared: *"Through our partnership, they someway somehow gain valuable insights into the specific requirements of handling different types of the furniture. This knowledge allows them to enhance their expertise in furniture logistics, ensuring proper handling, storage, and transportation. Moreover, collaborating closely with the clients enables them to understand their unique challenges in the furniture industry. For instance, when working with a high-end furniture retailer, they were able to learn about the delicate nature of handling luxury furniture pieces. We provided them with valuable insights on the importance of careful packaging, specialized handling equipment, and temperature-controlled environments to preserve the quality and appearance of high-value*

products. […] Specifically, the humidity levels need to be regulated to prevent moisture-related issues such as warping or mold growth. […] By doing that, they can help us to not only improve logistics performance but also give us more time to focus on our core value."

3.6 Discussion

The findings confirm that the utilization and manifestation of network resources are integral to the entire logistics outsourcing process undertaken by companies. Furthermore, the results indicate that most enterprises recognize the existence and significance of network resources in their operations. In addressing the RQ1 "How do companies achieve network resources from logistics providers?", the findings reveal that companies adopt a multifaceted relationship development strategy that extends beyond initial supplier relationship formation. This strategy includes actively managing the relationship during the supplier relationship management phase through several key practices, including the sharing of future operational and strategic plans with logistics providers. This finding builds upon previous research on the role of information exchange in fostering mutual development opportunities between partners. (Gupta & Vegelin, 2016) By doing so, companies create an environment of mutual understanding and alignment, allowing logistics providers to better anticipate and cater to the client's evolving needs. Furthermore, companies demonstrate their commitment by providing financial support, regular training, and continuous communication during the implementation phase. These holistic approaches to relationship development demonstrate the clients' commitment to fostering strong and enduring partnerships, thereby facilitating the acquisition and utilization of network resources throughout the logistics outsourcing process.

In response to RQ2 regarding the drivers and barriers to achieving network resources in logistics, the findings indicate that the pursuit of network resource's drivers begins with the clients' proactive

approach and strategic planning. It is crucial for clients to have a comprehensive understanding of the potential benefits that an alliance partnership can bring and how it can enhance their company's performance in the long run. This awareness and foresight play a pivotal role in laying the foundation for a successful collaboration and optimizing the utilization of network resources. Conversely, barriers to accessing network resources are also evident, largely stemming from clients' internal policies and strategic approaches in the early stages, as well as from trust deficiencies during relationship development. These findings support the study of Chu & Wang in 2012, which stated trust as a quality element for partnership development. The finding also enriches the literature regarding barriers to outsourcing of Gunasekaran et al. (2015) when they only presented difficulties with integration, compromising their competitive advantage, opportunistic actions by partners increasing expenses for transactions and coordination, restricted innovation potential, and elevated costs of procurement. Besides, Gunasekaren et al. (2015) also explained that LSU often thoroughly comprehend and address the long-term costs of outsourcing, particularly the risk of future competition from the supplier, who may leverage their gained experience to enter the downstream market. Despite previous scholarly contributions highlighting the advantages of establishing alliance partnerships within the business context (Lavie, 2006; Moxham and Kauppi, 2014), limited attention has been given to exploring the obstacles encountered in relationship development within the logistics outsourcing context. In our research, we have uncovered a novel barrier pertaining to the acquisition of network resources, specifically the careful considerations undertaken by clients when finalizing their contract decisions after establishing relationships with logistics providers. To elaborate, participants repeatedly emphasized the significance of "trust" in their responses. While one participant argued for a cautious evaluation of "trust" during the trial contract before committing to an official contract,

another participant elucidated that even in the event of choosing an alternative logistics provider, adherence to organizational policies necessitates a process of re-selection and re-evaluation of potential candidates.

Besides, to answer the RQ3, the study clarified the competitive advantages and benefits derived from the alliance partnership manifest in various phases, including the vendor selection phase, transition phase, and relationship development phase. Figure 3.7 summarized the distribution of benefits gained in the lens of 4 different rent types of network resources. Specifically, internal rent appears in the vendor selection phase and transition phase when the logistics service users intentionally access logistics experience and specific asset as selection criteria and to leverage their logistics competitive advantage. Moreover, inbound spill-over rent refers to the benefits that clients unintendedly receive from logistics provider's industry experience and reputation in selection phase as it is easier for the clients to make final vendor selection decision. Conversely, outbound spill-over rent pertains to the unintended benefits that logistics providers can achieve by improving their business portfolio and gaining access to the client's network during the vendor selection phase and transition phase. This strategic positioning enables logistics providers to enhance their business prospects and identify new business opportunities. Finally, the findings highlight the collaborative efforts between clients and logistics providers, as evidenced by joint initiatives such as training programs, aimed at sharing knowledge in appropriated relational rent. This collaboration is driven by the mutual goal of improving the operational performance of both parties involved. By actively exchanging expertise and insights, clients and logistics providers strive to optimize their respective capabilities, leading to improved business performance.

While previous research has acknowledged the positive impact of network resources on performance indicators such as innovation performance and international performance (Zheng *et*

al., 2013; Spithoven and Teirlinck, 2015; Kenny and Fahy, 2011), this study uncovers novel insights regarding the competitive advantages gained through logistics outsourcing. Specifically, the business scope of the logistics provider, whether international or local, plays a pivotal role in selecting and enhancing specific logistics outsourcing activities.

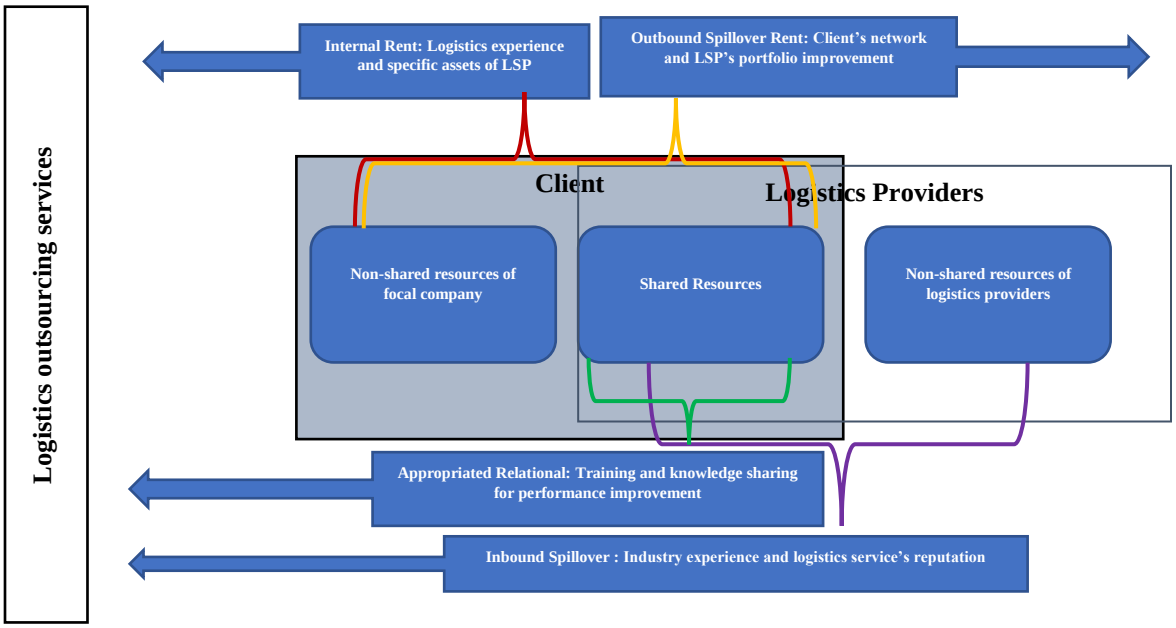

Figure 3.7: Results of specific benefits extracted from the application of network resource in logistics outsourcing

The results reveal that by leveraging both the shared resources, such as customs clearance services, and non-shared resources, such as the logistics provider's network in customs clearance, companies can effectively reduce logistics-related costs through the utilization of their partners' logistics services (See Fig 3.7). Additionally, the speed of service can be significantly improved by utilizing the services of local logistics providers, who can leverage their networks in customs clearance to expedite the process. Furthermore, when it comes to warehousing activities, companies tend to outsource to specific local providers who have made substantial investments in warehousing infrastructure (e.g. warehouse location and equipment), as compared to international providers. This preference for local providers stems from their ability to offer more competitive advantages

in terms of warehousing capabilities. In contrast, international logistics providers are favored for international freight due to their extensive experience and expertise in managing such operations. Moreover, participants in the study expressed a preference for international logistics providers based on their proficiency in utilizing advanced technology.

Lavie (2006) places considerable emphasis on the occurrence of relative opportunistic behavior within appropriated relational rent. In our investigation, we have uncovered a correlation between the relative opportunistic behavior exhibited by clients and supplier management during the logistics outsourcing process. To elaborate, clients frequently employ the term "if" when requesting flexibility and problem-solving skills from logistics providers, particularly in addressing unforeseen operational challenges. Once logistics providers successfully assist clients in resolving these issues, they are assured of contract renewal in the future. Based on how clients and suppliers interact, clients usually act more opportunistically when asking for extra services because they believe they have more say in contract decisions (Dawson and Watson, 2010). This finding goes against what Lavie said in 2007 about a decrease in bargaining power in an alliance partnership.

3.7 Conclusion and implication

The primary objective of this research endeavor is to investigate the utilization of network resources within the logistics outsourcing context, with a particular focus on the perspective of logistics service users. To accomplish this, qualitative data obtained from a purposive sample of 30 companies has been employed. Initially, we embarked upon an exploration of the drivers, barriers, methods employed for network resource creation, as well as the specific benefits derived from network resources within the logistics outsourcing context. Subsequently, through a comprehensive synthesis and analysis of codes and themes derived from both first-order and

second-order approaches, we develop a theoretical framework that elucidates the application of these network resource-related themes across the five phases of the logistics outsourcing process. Consequently, this study yields valuable theoretical insights while also offering practical implications of significance as follows.

3.7.1 Theoretical implication

The study represents a pioneering effort in the field, aiming to explain the utilization of network resources in logistics outsourcing. While prior research has demonstrated that leveraging competitive advantages based on the RBV can directly enhance outsourcing performance and mitigate operational risks, these endeavors have been limited by the absence of consideration for ERBV or network resources. By adopting an ERBV perspective, this study examines the incorporation of network resources across the logistics outsourcing process. In doing so, we develop a comprehensive framework that examines the determinants, characteristics, and specific benefits derived from network resources at each stage of the logistics outsourcing process. The findings enrich the literature on the specific benefits derived from network resources, building upon the work of Moxham and Kauppi (2014), who explored the benefits derived from trades within the supply chain. Moreover, this study advances the understanding of network resource characteristics by extending the framework proposed by Lavie (2006) to encompass the benefits gained by both clients and logistics providers.

3.7.2 Managerial implication

The practical implications of this study offer valuable insights for managers, providing guidance on how to effectively manage relationships with 3PL providers. The novel findings regarding the methods employed to attain network resources highlight the importance of information and knowledge exchange facilitated through training and communication. Managers should emphasize the development of strong relationships with logistics providers by fostering effective

communication channels and implementing comprehensive training programs. Furthermore, these findings serve as a reference for managers when considering the potential benefits that clients can derive from forming alliance partnerships with logistics providers through the utilization of their outsourcing services. Understanding the specific benefits that can be obtained through such alliances enables managers to make informed decisions regarding the selection and engagement of logistics providers, thereby enhancing the overall effectiveness and efficiency of the outsourcing process.

3.7.3 Research directions and limitations

No research endeavor is exempt from limitations, and this study is no exception. Despite the valuable insights it offers to both research and practice, it is crucial to acknowledge and address the limitations that exist. By recognizing these limitations, one can interpret the findings of this study with caution and a nuanced perspective. First, despite putting in considerable effort to include a large number of participants, our study solely focuses on the perspective of logistics service users. To gain a more comprehensive understanding, future research endeavors should consider investigating the application of network resources from the viewpoint of logistics providers. This would provide a more balanced and holistic view of the phenomenon under study. Secondly, it is worth noting that all participants in our study were sourced from local and international companies within Vietnam, and the interviews were conducted solely within the Vietnamese context. To enhance the generalizability and breadth of insights, researchers may wish to broaden the geographic or cultural scope of the study. This would enable comparisons to be made across different regions or cultures, facilitating a deeper understanding about the topic.

3.8 Reference List of Chapter 3

1. Aktas, E., Agaran, B., Ulengin, F., & Onsel, S. (2011). The use of outsourcing logistics activities: The case of Turkey. *Transportation Research Part C: Emerging Technologies*, 19(5), pp. 833-852.

2. Arroyo, P., Gaytan, J., & Boer, L. (2006). A survey of third-party logistics in Mexico and a comparison with reports on Europe and the USA. *International Journal of Operations and Production Management*, 26(6), pp. 639-667.

3. Ashrafi, M., Walker, T. R., Magnan, G. M., Adams, M., & Acciaro, M. (2020). A review of corporate sustainability drivers in maritime ports: A multi-stakeholder perspective. *Maritime Policy & Management*, 47(8), pp. 1027-1044.

4. Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), pp. 99-120.

5. Bahli, B., & Rivard, S. (2003). The information technology outsourcing risk: A transaction cost and agency theory-based perspective. *Journal of Information Technology*, 18(3), pp. 211-221.

6. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), pp. 77-101.

7. Chu, Z. and Wang, Q., 2012. Drivers of relationship quality in logistics outsourcing in China. *Journal of Supply Chain Management*, 48(3), pp.78-96.

8. Dawson, G. S., Watson, R. T., & Boudreau, M. C. (2010). Information asymmetry in information systems consulting: Toward a theory of relationship constraints. *Journal of Management Information Systems*, 27(3), pp. 143-178.

9. Deepen, J. M. (2007). Logistics outsourcing relationships: measurement, antecedents, and effects of logistics outsourcing performance. Springer Science & Business Media.

10. Francis, J.J., Johnston, M., Robertson, C., Glidewell, L., Entwistle, V., Eccles, M.P. and Grimshaw, J.M., 2010. What is an adequate sample size? Operationalising data saturation for theory-based interview studies. *Psychology and health*, 25(10), pp.1229-1245.

11. Gerwig, K., 1999. Business: the 8th layer: e-mail outsourcing sends a message. *netWorker*, 3(2), pp.13-16.

12. Gnyawali, D.R. and Madhavan, R., 2001. Cooperative networks and competitive dynamics: A structural embeddedness perspective. *Academy of Management review*, 26(3), pp.431-445.

13. Govindan, K., Khodaverdi, R. and Vafadarnikjoo, A., 2016. A grey DEMATEL approach to develop third-party logistics provider selection criteria. *Industrial Management & Data Systems*, 116(4), pp.690-722.

14. Gupta, J., & Vegelin, C. (2016). Sustainable development goals and inclusive development. *International environmental agreements: Politics, law and economics*, 16, 433-448.

15. Gunasekaran, A., Irani, Z., Choy, K. L., Filippi, L., & Papadopoulos, T. (2015). Performance measures and metrics in outsourcing decisions: A review for research and applications. International Journal of Production Economics, 161, 153-166.

16. Hätönen, J. and Eriksson, T., 2009. 30+ years of research and practice of outsourcing–Exploring the past and anticipating the future. *Journal of international Management*, 15(2), pp.142-155.

17. Hayes, B.K., Heit, E. and Swendsen, H., 2010. Inductive reasoning. Wiley interdisciplinary reviews: *Cognitive science*, 1(2), pp.278-292.

18. Hsiao, H.I., Kemp, R.G.M., Van der Vorst, J.G.A.J. and Omta, S.O., 2010. A classification of logistic outsourcing levels and their impact on service performance: Evidence from the food processing industry. *International journal of production economics*, 124(1), pp.75-86.

19. Hsiao, H.I., Kemp, R.G., van der Vorst, J.G. and Omta, S.W.F., 2011. Logistics outsourcing by Taiwanese and Dutch food processing industries. *British Food Journal*, 113(4), pp.550-576.

20. Huang, M., Tu, J., Chao, X. and Jin, D., 2019. Quality risk in logistics outsourcing: A fourth party logistics perspective. *European Journal of Operational Research*, 276(3), pp.855-879.

21. Huggins, R., 2010. Forms of network resource: knowledge access and the role of inter-firm networks. *International Journal of Management Reviews*, 12(3), pp.335-352.

22. Hung Lau, K. and Zhang, J., 2006. Drivers and obstacles of outsourcing practices in China. *International Journal of Physical Distribution & Logistics Management*, 36(10), pp.776-792.

23. Jothimani, D., & Sarmah, S. P. (2014). Supply chain performance measurement for third party logistics. *Benchmarking: An International Journal*, 21(6), 944-963.

24. Juga, J., Juntunen, J. and Grant, D.B., 2010. Service quality and its relation to satisfaction and loyalty in logistics outsourcing relationships. *Managing Service Quality: An International Journal*, 20(6), pp.496-510.

25. Kenny, B. and Fahy, J., 2011. Network resources and international performance of high tech SMEs. *Journal of small business and enterprise development*, 18(3), pp.529-555.

26. König, A. and Spinler, S., 2016. The effect of logistics outsourcing on the supply chain vulnerability of shippers: Development of a conceptual risk management framework. *The International Journal of Logistics Management*, 27(1), pp.122-141.

27. Lai, K.H., Wong, C.W. and Cheng, T.E., 2008. A coordination-theoretic investigation of the impact of electronic integration on logistics performance. *Information & Management*, 45(1), pp.10-20.

28. Lavie, D., 2006. The competitive advantage of interconnected firms: An extension of the resource-based view. *Academy of management review*, 31(3), pp.638-658.

29. Lavie, D., 2007. Alliance portfolios and firm performance: A study of value creation and appropriation in the US software industry. *Strategic management journal*, 28(12), pp.1187-1212.

30. Maloni, M. J., & Carter, C. R. (2006). Opportunities for research in third-party logistics. *Transportation journal*, 45(2), 23-38.

31. McIvor, R., Wall, A., Humphreys, P. and McKittrick, A., 2009. *A study of performance measurement in the outsourcing decisio*n. Butterworth-Heinemann.

32. Miguel, P.L., Brito, L.A., Fernandes, A.R., Tescari, F.V. and Martins, G.S., 2014. Relational value creation and appropriation in buyer-supplier relationships. *International Journal of Physical Distribution & Logistics Management*, 44(7), pp.559-576.

33. Moxham, C. and Kauppi, K., 2014. Using organisational theories to further our understanding of socially sustainable supply chains: The case of fair trade. *Supply Chain Management: An International Journal*, 19(4), pp.413-420.

34. Oshri, I., Sidhu, J.S. and Kotlarsky, J., 2019. East, west, would home really be best? On dissatisfaction with offshore-outsourcing and firms' inclination to backsource. *Journal of Business Researc*h, 103, pp.644-653.

35. Patton, M.Q., 2002. Book review: Learning in the field: an introduction to qualitative research. *American Journal of Evaluation*, 23(1), pp.115-116.

36. Penrose, E., 1959. A Resource-Based View of the firm. Strategy. Manag. J, 5, pp.171-180.

37. Shenton, A.K., 2004. Strategies for ensuring trustworthiness in qualitative research projects. *Education for information*, 22(2), pp.63-75.

38. Spithoven, A. and Teirlinck, P., 2015. Internal capabilities, network resources and appropriation mechanisms as determinants of R&D outsourcing. *Research policy*, 44(3), pp.711-725.

39. Vaxevanou, A. and Konstantopoulos, N., 2014. The implementation of outsourcing procedure in the light of organizational reality. *Procedia-Social and Behavioral Sciences*, 148, pp.478-485.

40. Watjatrakul, B., 2005. Determinants of IS sourcing decisions: A comparative study of transaction cost theory versus the resource-based view. *The Journal of Strategic Information Systems*, 14(4), pp.389-415.

41. WTO Center. (2025). Vietnam's exports navigate new challenges and opportunities in 2025. Viewed on 13 March 2025. https://wtocenter.vn/tin-tuc/26997-vietnams-exports-navigate-new-challenges-and-opportunities-in-2025#:~:text=According%20to%20the%20General%20Statistics,of%20the%20total%20export%20value.

42. Yang, Q., Zhao, X., Yeung, H.Y.J. and Liu, Y., 2016. Improving logistics outsourcing performance through transactional and relational mechanisms under transaction uncertainties: Evidence from China. *International Journal of Production Economics*, 175, pp.12-23.

43. Zheng, S., Li, H. and Wu, X., 2013. Network resources and the innovation performance: Evidence from Chinese manufacturing firms. *Management Decision*, 51(6), pp.1207-1224.

44. Zhu, W., Ng, S.C., Wang, Z. and Zhao, X., 2017. The role of outsourcing management process in improving the effectiveness of logistics outsourcing. *International Journal of Production Economics*, 188, pp.29-40.

3.9 Appendices

Appendix 3A: Information of 30 participants

Participant	Education	Position	Years of experience	Industry
1	Master degree	Operation manager	15	Airline industry

2	Master degree	Vice Director	11	Wood industry
3	Master degree	Sales Manager	8	Logistics industry
4	Master degree	Logistics Manager	13	Apparel Industry
5	Master degree	Supply chain manager	13	Logistics industry
6	Master degree	Procurement Manager	10	Food and Beverage industry
7	Master degree	Logistics manager	10	Cosmetic industry
8	Master degree	Head deputy of Logistics	8	Transformer manufacturing industry
9	Master degree	Operation manager	8	Logistics industry
10	Master degree	Operation leader	7	Agriculture industry

11	Master degree	Branch manager	13	Logistics industry
12	Master degree	Head of Supply Chain	10	Electronic industry
13	Master degree	Vice Director	11	Logistics industry
14	Master degree	Head of Logistics	20	Electronic industry
15	Master degree	Sourcing Manager	8	Logistics industry
16	Master degree	Sales Manager	15	Logistics industry
17	Master degree	Supply chain Manager	8	Apparel Industry
18	Master degree	Sales Manager	15	Logistics industry
19	PhD	Vice Director	16	Tube and tank material manufacturing
20	Bachelor degree	Director	30	Engineering components industry

21	Bachelor degree	Logistics manager	12	Cosmetic industry
22	Bachelor degree	Manufacturing manager	15	Apparel industry
23	Bachelor degree	Supply chain manager	14	Cosmetic industry
24	Bachelor degree	Supply chain manager	12	Food and Beverage industry
25	Bachelor degree	Director	27	Logistics industry
26	Bachelor degree	Procurement Manager	11	Electronic industry
27	Bachelor degree	Logistics Manager	8	Furniture industry
28	Bachelor degree	Director	20	Logistics industry
29	Bachelor degree	Logistics Manager	7	Food and Beverage industry
30	Bachelor degree	Director	40	Printing industry

Appendix 3B: Pre-Interview Questionnaire

Completing this questionnaire should take approximately 5 minutes. It can either be completed on-screen electronically or alternatively on a hard-printed copy.

SECTION A: RESPONDENT DETAILS

1) Name of company/organisation:

2) What is your role/job title?

3) How many years have you worked in the logistics industry?

4) What is your education background?

☐ Bachelor ☐ Master ☐PhD ☐Others:

SECTION B: ABOUT THE ORGANISATION

What industry is your company focusing on?

☐Food & Beverage ☐Logistics ☐Apparels ☐ Electronic ☐ Construction ☐ Automotive ☐ Others:

What type of products and services you are providing?

What is your business type?

☐Local ☐International ☐Joint Venture

How many employees do you have in your company?

☐1-10 staffs ☐10-200 staffs ☐>200 staffs

How many branches does your company have both locally and globally?

☐1 ☐2-10 ☐10-50 ☐Over 50

What is your company's core business model?

☐ B2B ☐B2C

Where are your customers mainly based?

☐ Vietnam ☐Asian countries ☐European countries ☐African countries ☐Others

Does your company sell products online?

☐ Yes ☐No

Which geographical market is your primary focus?

☐ Local ☐International

Appendix 3C: Interview Guides

Background information

Good morning/ Good afternoon Ms./ Mr. ____ ! First, I would like to thank you for spending your precious time with me in the interview today. My name is ____ , currently working on my PhD studies I am doing my research about logistics outsourcing. In order to do this, I am required to conduct several interviews with experts. These interviews will contribute greatly to our research results. May I ask for your permission to record our interview?

This is only because I don't want to miss any information. Your identity will be anonymous and kept confidential. All your responses will only be used for the sole purpose of our research. Do you have any question before we start?

Part 1: Background information about logistics outsourcing process

1) Which logistics activities in the supply chain you would like to keep in-house?
2) Which ones should be outsourced?
3) Why do you need to outsource the abovementioned logistics activities?
4) What are your expectations and KPI in outsourcing specific logistics services?
5) Are you working with local or international logistics providers or both? And why?
6) Which logistics activities are you outsourcing from international and local logistics providers?
7) What kinds of logistics services are they offering to your company?
8) Why does your company choose to use logistics services from international logistics providers instead of local ones?
9) How are the performances between local logistics providers and international ones?
10) In what ways can partnering with international logistics providers offer a competitive advantage?

11) What are the barriers that stop other companies from using local/international logistics providers?

Part 2: In this section, we will focus on discussing your logistics outsourcing process, the methods to develop partnership with the LSPs and the determinants that your company encounter in establishing partnerships.

1) Does your company have any formal outsourcing process?
2) How many stages do you have in the process and what are they?
3) How do you find logistics service suppliers in the market?
4) How many suppliers would be considered in the process?
5) Do you have any specific suppliers on your list before starting the outsourcing process?
6) Can you list the selection criteria you use to select logistics vendors?
7) Which one is the most important and why?
8) What are the main drivers for this specific LSP's selection?
9) Who will make the final outsourcing decision in vendor selection?
10) When will you evaluate their performance (Week/Month/Year/Years)?
11) What type of contract do you have with these providers and why do you choose the contract type?
12) At any stage in your outsourcing process, do you establish long-term partnerships with specific logistics providers and why? If so, what steps do you take to develop relationships with your logistics providers, and how long does this process typically take?
13) What type of information and resources will both parties mutually exchange with each other for partnership formation?
14) If not, what are the barriers that stop you from developing any relationship with them?
15) What are the benefits of developing your relationship with your outsourcing partners?
16) How do these benefits improve the company's competitive advantages?
17) How can the benefits of outsourcing improve your capability in market expansion/cost reduction/quality improvement/product development?

Part 3: In this section, we will focus on discussing the competitive advantages and supply chain performance improvements that result from them.

1) When forming partnerships with logistics providers, how do you leverage their physical assets (e.g. equipments, vehicles status, warehouse location, etc.) to improve your supply chain performance?
2) What are the benefits of sharing physical resources and collaborating with each other?

3) When forming partnerships with logistics providers, how do you leverage their technological assets (e.g. information communication system, ERP, RFID, GPS, etc.) to improve your supply chain performance?
4) What are the benefits of sharing technological resources and collaborating with each other?

5) When forming partnerships with logistics providers, how do you leverage their logistics experience, specific industry knowledge, skills and networks to improve your supply chain performance?
6) What are the benefits of sharing experiences and knowledge with each other?

7) When forming partnerships with logistics providers, what type of information will you share, exchange and receive from them?
8) What are the benefits of sharing information with each other?
9) When forming partnerships with logistics providers, how do you leverage their reputation and prestige to improve your supply chain performance? How the vendor's background impact on your company's performance?
10) What are the benefits of having a reputational and well-known partner?
11) What are elements that your LSPs are not willing to share with you and why not? (e.g. networks, skills, technology, etc.)
12) Do you have any terms and conditions in your contract about the use of shared resources from the LSPs?
13) Do you have any specific requirements or plans to use these resources before working with them?
14) What are the long-term potential benefits of partnering with these specific LSPs?
15) Which specific requirements do you have for your LSPs' resources?
16) What type of information/logistics assets/experience/knowledge can you receive unintentionally from the LSPs?
17) What are elements that your LSPs are not willing to share with you and why not?

Now that we have gone through all the necessary contents, I think I should not take more of your precious time. Before we end the interview, may I ask if there is any further suggestions

or opinions you would like to share regarding topics that we have discussed? Or may be any questions at all? [If not] Thank you very much for your participation and sharing. We really appreciate your time and contribution to our research. Have a nice day!

Chapter 4: The impact of network resources on supply chain performance of logistics service user

4.1 Abstract

Purpose: The primary objective of this manuscript is to estimate the influence of network resources as a mediator factor in the relationship between outsourcing drivers, selection criteria and contract management with supply chain performance in the context of logistics outsourcing.

Design/Methodology/Approach: The research methodology involved the design and administration of a survey instrument. Data were collected from 239 organizations in Vietnam and subsequently analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). This approach enabled a robust analysis of the relationships between the variables under investigation.

Findings: The findings, grounded in the Extended Resource-Based View (ERBV) theory and analyzed using Partial Least Squares Structural Equation Modeling (SEM-PLS), reveal several important insights into the dynamics between network resources and supply chain performance (SCP). First, the results indicate a significant direct effect of outsourcing drivers, contract management and selection criteria on SCP, underscoring the crucial role these resources play in enhancing overall supply chain efficiency and effectiveness. In addition to this direct relationship, the study also uncovered indirect effects. Specifically, outsourcing drivers, contract management, and selection criteria were found to influence SCP indirectly through the mediating role of network resources.

Originality: To the best of the authors' knowledge, this study is the first to investigate the impact of selection criteria (SC), outsourcing drivers (OD), and contract management (CM) on a firm's supply chain performance (SCP), while also establishing the mediating role of network resources (NR) in the context of Vietnam. The research confirms that network resources are critical to achieving superior SCP, as demonstrated by the significant positively effective between SC and

SCP. These findings provide valuable insights for logistics and supply chain managers, suggesting that strategically developing the logistics outsourcing process can foster stronger alliance partnerships and enhance overall supply chain performance.

Limitations: A primary limitation of this study lies in participant selection, as the established criteria may restrict the generalizability of the findings. Additionally, the scope of the target industry could be narrowed to focus on a specific sector, allowing for more precise insights and tailored recommendations relevant to that industry.

Keywords: logistics outsourcing, network resources, extended resource-based view theory, SEM-PLS.

4.2 Introduction

Outsourcing has increasingly emerged as a critical strategy for addressing complex issues related to customer satisfaction and enhancing competitive advantage (Konig & Spinler, 2016; Zhu et al., 2017). With the impetus from globalization and advancements in information technology, a growing number of manufacturers are opting to outsource their logistics operations to third-party logistics (3PL) providers. This strategic approach is intended to enhance logistics performance and secure a competitive edge (Lai et al., 2008). Empirical evidence provided by Jaafar & Rafiq (2005) indicates that, on average, firms realize a nine percent reduction in expenses and a 15% improvement in quality and capacity through outsourcing practices. McIvor et al. (2008) further recognize outsourcing as an effective strategy for cost reduction and performance enhancement within organizations. Additionally, it facilitates the management of demand uncertainty by leveraging the economies of scale offered by logistics service providers across various industries (Hätönen & Eriksson, 2009).

Furthermore, there is a paucity of research examining whether the notable competitive advantages associated with outsourcing vary among companies, particularly on their supply chain performance. Although significant attention has been given to exploring the nature of resources in providing a competitive advantage (Barney 1991; Lavie 2006, Gulati et al., 2011), not much attention has been given to network resources resulting from an alliance partner in the context of logistics outsourcing. Based on the theoretical framework of the extended resource-based view (ERBV) of firms, this study aims to evaluate the influence of network resources within the context of logistics outsourcing, with the goal of enhancing the understanding and managerial practices regarding competitive advantages achievement of logistics professionals. The following research question is addressed:

- How do network resources impact the supply chain performance of logistics service users?

What is the differential impact of network resources on supply chain performance as a mediator in logistics outsourcing? This study makes several contributions to both theoretical and practical implications. First, it provides a theoretical framework that connects supply chain drivers, supply chain strategies, network resources, and the supply chain performance of focal firms. Second, it investigates the influence of network resources on the supply chain performance of logistics service users. Finally, this study elucidates several principles that can assist logistics managers of focal firms in integrating their supply chain strategies before selecting the appropriate contract category with logistics service providers to maximize the benefits derived from network resources. These principles also support to classify the importance of different logistics service providers in improving overall supply chain performance.

4.3 Literature Review

4.3.1 Theoretical model and hypothesis development

4.3.2 Extended Resource based View (ERBV)

The basis of this research's theoretical model is grounded in Extended Resource Based View (ERBV) theory perspective because the theory covers the intentions of clients to achieve partnerships and competitive advantages gained in the context of logistics outsourcing.

Originally, Resource-Based View (RBV) theory elucidates why companies perform differently and how they utilize resources to maintain competitiveness and achieve competitive advantages (Barney, 2001). Recent evidence highlights resource transfer through direct interfirm interactions, challenging the RBV's proprietary assumption and significantly impacting firm performance (Lavie, 2006). Lavie (2006) argues that while RBV proponents correctly emphasized the non-tradability and imperfect mobility of valuable resources, they overlooked the potential for direct resource sharing and the indirect transfer of associated benefits. Thus, the fundamental RBV assumption—that full ownership or control of resources is required to generate competitive advantage—is deemed incorrect by Lavie (2006). This implies that firms can leverage resources through sharing and collaborations, challenging the notion of exclusive ownership as a prerequisite for competitive advantage within the RBV framework. Lavie (2006) suggests that the RBV can be extended to consider the role of network resources acquired through alliances and collaborations, providing firms access to a broader range of resources beyond their proprietary domain. Lavie's concept of network resources, derived from alliance partnerships between firms, facilitates the attainment of benefits and access to resources possessed by partner firms, thereby enhancing a company's competitive advantage. This work represents an amalgamation of RBV theory and network theory, called the Extended RBV (ERBV) framework. Although the value-creating capability of network resources was confirmed in Lavie's empirical study with more than 350

software companies and their 20,779 alliances (Lavie, 2007), there is a notable shortage of studies examining the complexities of network resource usage in the interactions between logistics clients and logistics providers. Specifically, the question of "How do network resources improve the supply chain performance of logistics service users?" remains unclear and requires further investigation. Consequently, this study takes network resources as a mediator to examine their influence on supply chain drivers, supply chain strategies, and supply chain performance in the context of logistics outsourcing.

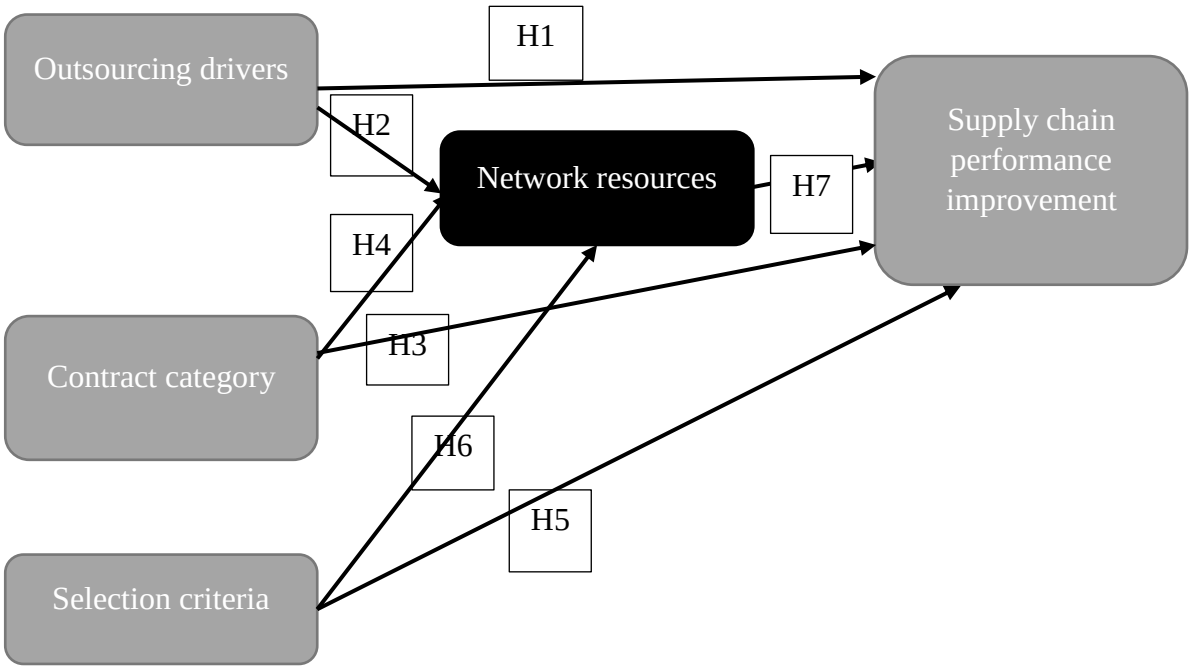

Figure 4.1: Theoretical Framework

4.3.3 Logistics provider's contract management

Contractual terms for logistics providers outline the legal responsibilities, including duties and rights, of both parties involved in logistics outsourcing: the logistics provider and its clients (Min,

2013). As more companies globally outsource logistics activities to third-party logistics (3PL) providers, supplier relationship management (SRM) and contract management has become essential for reducing supply chain costs and gaining competitive advantages (Lai et al., 2013). The same authors (2013) noted that evaluating suppliers involves assessing their value by examining their capabilities and performance. The results of this evaluation are used to build commitment and determine whether to pursue a short-term or long-term partnership.

Park et al. (2010) indicated that the decision on contract type is primarily influenced by the future direction of the focal firms. Specifically, short-term contracts are typically employed in less than 1 year, cost-price strategies, competitive bidding processes, extensive supplier networks, and buyer-dominant partnerships. In contrast, long-term contracts are associated with sustainable strategies, selected supplier networks, strategically-oriented partnerships and last more than 1 year. Hence, under the ERBV perspective, this study will investigate the role of network resources as a mediator in the context of logistics outsourcing. Hence, the first hypothesis (H1) is proposed as follows:

H1: Contract category has a direct positive effect on Supply Chain Performance

H2: Network Resources have a positive mediating effect in between Contract Category and Supply Chain Performance

4.3.4 Outsourcing drivers and network resource achievement

Companies must strategically determine their outsourcing drivers in order to decide on the appropriate length of their alliance relationships with logistics service providers, whether long-term or short-term (Zhang & Sun, 2008). These partnerships formation enable firms to leverage external resources while mitigating risks associated with outsourcing. (Arif & Jawab, 2018). Consequently, the alignment of outsourcing drivers with strategic alliance formation or network

resources is important for enhanced performance and competitive advantage (Deepen et al., 2008; Casanueva et al., 2015).

These outsourcing drivers (OD) can broadly be summarized in Table 4.1.

Table 4.1: Previous literature of outsourcing drivers

	Drivers	Source
OD1	Focus on our core competencies	Rajesh et al. (2013); Marchet et al. (2017)
OD2	Save logistics costs	Erturgut et al. (2015); Rajesh et al. (2013)
OD3	Time management	Rajesh et al. (2013)
OD4	Reduce heavy asset investment	Altin, 2017
OD5	Improve the logistics service's flexibility and agility	Lau & Zhang (2006); Rajesh et al. (2013)
OD6	Logistics knowledge, experience and equipment of logistics providers	Chu & Wang (2012)
OD7	Expand my network through the logistics provider's network	Yeung et al., 2006; Ngonela et al., 2014.
OD8	Reduce the logistics risk in the operation	Marchet et al., 2017
OD9	Improve my logistics performance	Chu et al. (2012); Zhu et al., 2017;
OD10	Achieve specific knowledge and experience in a specific industry.	Wan et al., 2019

Although the effect of logistics outsourcing drivers on logistics performance has been investigated and confirmed in their study (Chu & Wang, 2012) in China under the perspective of transaction cost economics (TCE) and resource dependence theory (RDT), the indirect effects through network resources remain unclear. Hence, we hypothesize them as H2:

H3: Outsourcing Drivers has a direct positive effect on Supply Chain Performance

H4: Network Resources have positive mediating effects in between Outsourcing Drivers and Supply Chain Performance

4.3.5 Selection and evaluation criteria

The evaluation and selection of logistics service providers (LSPs) is a core process within logistics management, which enable companies to achieve their strategic supply chain performance and competitive advantages through logistics outsourcing. Hwang et al. (2016) stated a significant shift in the importance of price as a key selection factor, with its ranking rising from 11th to 1st place over a decade starting from 2004.

These selection criteria (SC) can broadly be summarized in Table 4.2.

Table 4.2: Selection and evaluation criteria used from previous literature.

	Selection and evaluation criteria	Cited by
SC1	Logistics Service Quality	Weber et al., 1991; Bottani & Rizzi, 2006, Jharkharia & Shankar, 2007, Liu & Wang, 2009, Abraham et al., 2011; Chen et al., 2011; Wu et al., 2013; Aguezzoul 2014; Alkhatib et al., 2015; Ding et al., 2015; Wang et al., 2021.
SC2	On-time delivery performance	
SC3	Flexibility in logistics operation	
SC4	Cost of service	
SC5	Customer Service quality	
SC6	Logistics information system	
SC7	LSP's Financial strength	
SC8	LSP's Reputation	
SC9	Geographic location (e.g. warehouse, hub, etc.)	
SC10	Technological capability	
SC11	Performance History	

SC12	Logistics provider's Environmental Policies	
SC13	Logistics provider's Human resource policies	

Alkhatib et al. (2015) reviewed 56 articles on the evaluation and selection methods and criteria for logistics service providers (LSPs) published between 2008 and 2013, identifying 12 significant criteria used in the selection process. Table 4.2 presents the selection criteria studied in previous papers. Despite of the rapid shift in selection criteria for logistics providers towards sustainability in the post-COVID-19 era (Mishra et al., 2022; Gupta et al., 2022), the role of forming alliances with LSP networks to access external resources from the perspective of logistics service users remains underexplored. Therefore, the connection of selection and evaluation criteria with network resources and supply chain performance will be studied in this research. The following hypothesis is proposed:

H5: Network Resources have a positive mediating effect in between Selection Criteria and Supply Chain Performance

H6: Selection Criteria has a direct positive effect on Supply Chain Performance

4.3.6 Network resources

Lavie (2006) defined network resources as those obtained from alliance partners and transferred through direct interfirm interactions, significantly impacting firm performance. These network resources, which are distinct from internal firm resources, encompass information-rich assets that firms can leverage to inform and implement their strategic initiatives and enhance competitive advantages. To assess the mediation effects of network resources in the theoretical model, as well as their direct impact on supply chain performance (SCP), the author will employ the resource classification framework proposed by Alkhatib et al. (2015). This framework categorizes resources into tangible and intangible assets, allowing for a more nuanced analysis of how these different

types of resources contribute to SCP outcomes. Tangible resources are defined as physical and technological resources, while intangible resources encompass human, structural, and relational resources (see Table 4.3). Hence, we have the following hypotheses will be:

H7: Network Resources have a direct positive effect on Supply Chain Performance

Table 4.3: Literature Review of resource used in logistics outsourcing

	Resource Category	Description	Literature
Tangible	Physical resources	Warehouse location, vehicle status and capacity	(Rajesh et al., 2011; Falsini et al., 2012; Karia & Wong 2013)
		Transportation capacity, transport mode, size, age and availability status.	(Selviaridis et al., 2007; Rajesh et al., 2011)
		Packaging and labeling equipment for production.	(Selviaridis et al., 2007; Falsini et al., 2012)
	Technological resources	RFID, GPS, real-time collaboration, EDI linkage, technical platform, database and web-based information system.	(Lai, 2004; Huang et al., 2006; Marasco 2008; Rajesh et al., 2011; Karia & Wong 2013; Vlachos, 2014)
Intangible	Human resources	Staffs' logistics skills	(Liou & Chuang, 2010; Karia & Wong 2013; Ryoo & Kim, 2015).
		Staff's experience in logistics industry	(Thakkar, et al., 2005; Narkhede et al., 2017)
		Human resource management	(Neto et al., 2017)
	Structural resources	Companies' cultures, firms' experience and customers' satisfaction level	(Liu & Wang, 2009; Mehri et al., 2013; Karia & Wong, 2013)

		Firm's reputation and prestige	(Jharkharia & Shankar, 2007; Rajesh et al., 2011; Gürcan et al., 2016)
	Relational resources	Sharing information and experience to collaborate with other supply chain partners.	(Kumar, 2008; Karia & Wong 2013; Kayikci & Stix, 2014).
		Mutual and long-term relationship	(Qureshi et al., 2007; Chen & Wu, 2011; Hsu et al., 2013; Yayla et al., 2015; Gürcan et al., 2016)
		Collaboration and cooperation with other logistics members	(Karia & Wong 2013; Kayikci & Stix, 2014).
		Trust and commitment	(Knemeyer & Murphy, 2004; Karia et al., 2015)

4.3.7 Supply chain performance indicators

Previous authors (Chopra & Sodhi, 2012; Azevedo et al., 2013; Yusuf et al., 2014; Anand & Grover, 2015; Quang et al., 2016; Fernandes et al., 2017) emphasized that supply chain management involves monitoring and identifying methods to enhance supply chain performance indicators, as detailed below:

1. Vendor Performance: reliability, response time.
2. Innovation capability: the number of new products developed each year, the flexibility of the workforce.
3. Business Operation: production waste, inventory management costs, workforce productivity.
4. Customer Service quality: delivery time, percentage of "perfect orders" delivered, product value perceived by customers, product/service quality, response time to inquire customer problems.
5. Economic Performance: market share growth, return on investment (ROI).

The objective of this study is to examine the mediation effects of network resources on supply chain performance. From state-of-the-art review papers, SC performance has been identified as shown in Table 4.4.

Table 4.4: Supply chain performance indicators

	Vendor Performance	Innovation capability	Business Operation	Customer Service quality	Economic Performance
SUPPLY CHAIN PERFORMANCE INDICATORS	Response time (SCP)	Quantity of new products launched per year (SCP)	Workforce Productivity (SCP)	Delivery timeliness (SCP)	Market share growth (SCP)
	Reliability (SCP)	Workforce flexibility (SCP)	Production waste (SCP)	Response time to customer queries (SCP)	Return on Investments (ROI) (SCP)
			Inventory management cost (SCP)	Perfect orders delivered ratio (SCP)	Total Cost reduction (SCP)
				Product/Service quality (SCP)	
				Product value perceived by the customer (SCP)	
	Chopra & Sodhi, 2012; Quang et al., 2016; Fernandes et al., 2017; Yusuf et al., 2014; Anand & Grover, 2015; Azevedo et al., 2013); Shi & Yu., 2013				

4.4 Methodology

This study employs structural model analysis to assess the interrelationships among various factors and their impact on the supply chain performance of logistics service users. A statistical technique known as Structural Equation Modeling (SEM) was utilized to evaluate theoretical models that propose relationships between multiple constructs. SEM can help researchers to facilitate the reduction of numerous indicator variables into a smaller set of latent variables (Matthews et al., 2018). Given the the limited sample size of 239 respondents, this study adopted Partial Least Squares Structural Equation Modeling (PLS-SEM) as the analytical approach. PLS-SEM is

particularly suitable for handling non-normal data and small sample sizes, as suggested by Hair et al. (2019) and Hair et al. (2020).

According to Usakli & Rasoolimanesh (2023), two predominant types of measurement models are reflective and formative. In a formative measurement model, the observed indicators collectively define or shape the latent construct. In contrast, in a reflective measurement model, the underlying latent construct determines the observed indicators. Thus, any alteration in the construct should result in corresponding changes in the indicators. Within this model, measurement error emerges from the incomplete prediction of observed indicators, making it the most commonly utilized model for representing latent constructs. This study uses a reflective measurement model to evaluate observed indicators, such as the characteristics of network resources representing a resource category, or criteria for the selection process serving as the outcomes of latent constructs like network resources or selection criteria.

Furthermore, the theoretical distinction between SEM CB and SEM PLS lies in their objectives. To explain, while the former is suited for theory testing and confirmation, the latter is ideal for prediction, key driver constructs identification and theory development (Hair et al, 2017). Besides, Dash and Paul (2021) observed that item loadings in PLS-SEM are generally higher compared to those in CB-SEM. This pattern also extends to Average Variance Extracted (AVE) and Composite Reliability (CR), which leads to higher reliability and validity in PLS-SEM. Moreover, PLS-SEM is recognized for its adaptability, making it especially suitable for research models involving limited sample sizes, intricate models' complicatedness, and non-normally distributed data.

In this study, SEM PLS is more relevant as the researcher aims to advance ERBV theory within logistics outsourcing and identify key constructs influencing supply chain performance.

4.4.1 Selection of the Sample

The member list of Vietnam Logistics Association and the corporate list of Vietnam Enterprise Community include 1800 local and international companies in Vietnam.

In this paper, purposive sampling technique was used to select relevant participants according to the following criteria:

- Having over 5 years of experience in coordinating and managing logistics outsourcing initiatives.
- Working in either local or international companies in Vietnam
- Having experience and being involved in logistics outsourcing project

This study collected empirical data through a series of surveys conducted in Vietnam. The respondents were experts with significant experience in logistics outsourcing projects, including roles such as managers, coordinators, and supervisors. These professionals received a link to the official survey, resulting in a total of 239 usable responses. Table 4.5 presents the sample descriptive analysis.

Table 4.5: Sample descriptive analysis

Education background		**Industry Type**		**Most frequently outsourcing service**	
Bachelor	47%	F&B	17%	Transportation (Freight transportation: road, rail, air, sea; Last-mile delivery)	56%
		Electronic	2%		
		Construction	1%	Logistics IT Solutions	9%

Master	52%	Fashion, apparel, textile, and garment	1%	Warehousing and Distribution	26%
		Logistics	56%	Inventory Management	1%
PhD	1%	Automotive	1%	Order Fulfillment	1%
		Others (healthcare, cosmetics, etc.)	21%	Customs Clearance and Compliance	6%
Business Structure		**Operation scope of logistics**		**Company's annual revenue**	
100% Locally-owned	40%	Local operation (keep all logistics activities within local network and local market)	33%	Less than 1 million USD	20%
6-10 years	17%	International operation (operate logistics activities internationally, e.g., import, export, etc.)	67%	From 1 to 5 million USD	32%
100% Foreign-owned	43%			Above 5 million USD	48%

4.4.2 Survey measures and items

The empirical study was carried out in Vietnam from June to August 2024. Due to some geographical distances, the data were collected through online questionnaire, which was distributed using Google Forms in 3 months. Respondents rated their agreement with statements

about their firm's logistics OD, SC, CC, SCO and SCP using a five-point Likert scale, participants rated their responses from 1, signifying "strongly disagree," to 5, denoting "strongly agree."

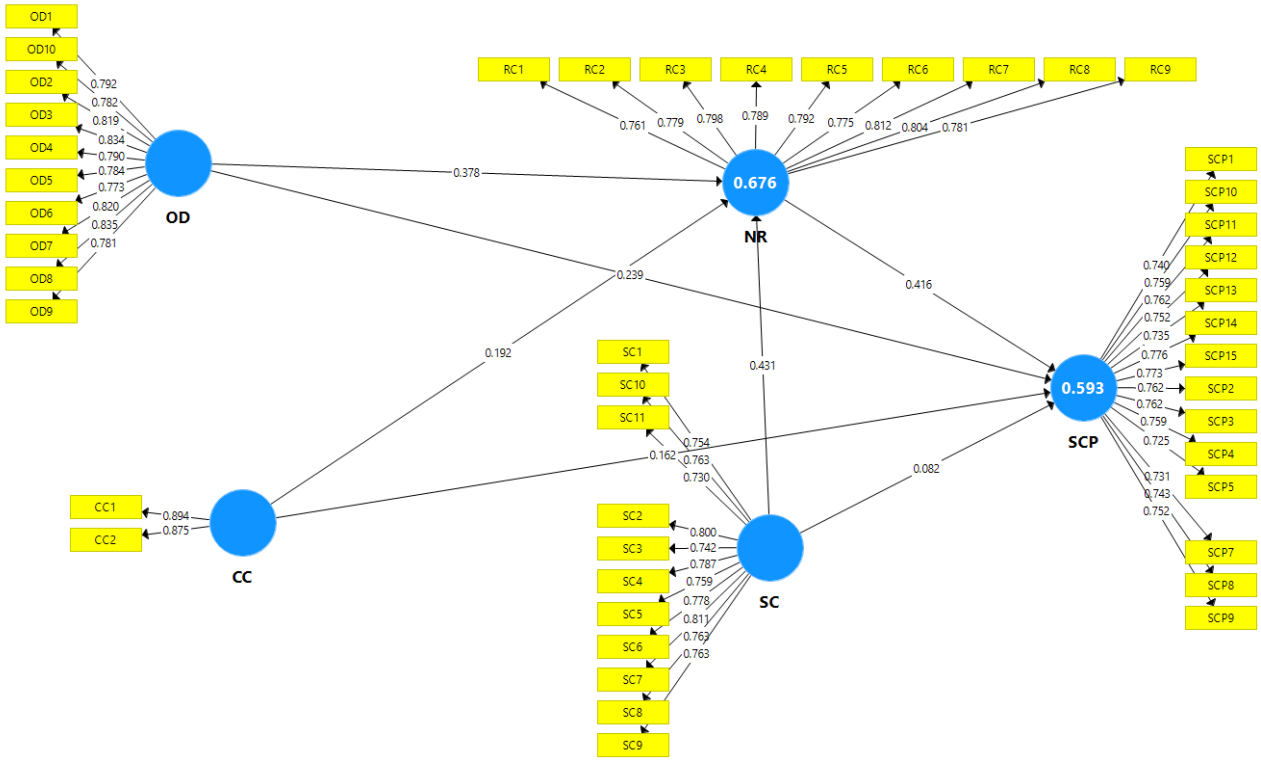

Figure 4.2: SEM model investigating the mediation effects of network resources in logistics outsourcing.

4.4.3 Analytical Methods

The research hypotheses were tested using the partial least squares structural equation modeling (PLS-SEM/PLS) method. In this case, with the supports of a quantitative software, called NVIVO; SEM PLS was conducted.

PLS-SEM consists of two components: a measurement model and a structural model (Vinzi et al., 2010). The measurement model addresses the relationships between constructs and their indicator variables, while the structural model represents the constructs and the relationships among them. PLS-SEM is particularly effective for small sample sizes or when the objective is to predict key

target constructs (Hair et al., 2017, p. 23). Given the limited sample size and the exploratory nature of this study, aimed at predicting and explaining target constructs, PLS-SEM was deemed an appropriate analytical technique. The analyses were conducted using SPSS version 20, and SmartPLS version 3 (Ringle et al., 2015).

4.4.4 Measurement model

All indicators demonstrate higher loadings on their respective constructs than on their cross-loadings with other constructs, thereby affirming discriminant validity (Hair et al., 2017). Each individual outer loading should surpass the 0.700 threshold (Hair et al., 2017). During the process, SC12, SC13 and SCP6 did not surpassed the 0.7 (0.536; 0.572; and 0.483); as a result, these individuals were removed, and the model was re-calculated. Furthermore, once each indicator's outer loading is higher than 0.7.

4.4.5 Construct Reliability and Validity

With the respective construct is highly significant ($p < 0.001$), the reliability and convergent validity were constructed. Table 4.6 presents the reliability analysis results. The reliability coefficients, namely Cronbach's alpha and composite reliability, range from 0.722 to 0.941 and from 0.723 to 0.942, respectively, exceeding 0.700 (Dijkstra and Henseler, 2015; Fornell and Larcker, 1981). Additionally, Table 4.6 also shows the average variance extracted (AVE), which has all constructs exceed Fornell and Larcker's (1981) acceptable value of 0.50, reinforcing the convergent validity of the measures (See Table 4.6). Additionally, the AVE values for OD, CC, NR, and SCP range from 0.566 to 0.783, indicating that these latent variables meet construct validity standards as they capture over 50% of the variance in their respective indicators.

Table 4.6: Construct Reliability and Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
SCP	0.941	0.942	0.948	0.566
SC	0.931	0.933	0.941	0.591
OD	0.938	0.939	0.947	0.642
NR	0.924	0.925	0.937	0.621
CC	0.722	0.725	0.878	0.782

4.4.6 HTMT and Fornell-Lacker criterion

Discriminant validity of the model was established using the Fornell-Larcker criteria and the Heterotrait-Monotrait Ratio (HTMT), as recommended by Henseler (2017). The Fornell-Larcker criterion is based on the premise that discriminant validity is achieved when the square roots of the estimated AVEs exceed the correlations between each pair of constructs in the model (Fornell and Larcker, 1981). The results indicate that discriminant validity has been established, as this criterion has been satisfied, as demonstrated in Table 4.7 below.

Table 4.7: Fornell-Lacker criterion

	CC	NR	OD	SC	SCP_
CC	0.885				
NR	0.557	0.788			
OD	0.473	0.694	0.801		
SC	0.432	0.712	0.523	0.769	

SCP_	0.542	0.730	0.647	0.573	0.752

The Heterotrait-Monotrait Ratio (HTMT) is a metric employed in Structural Equation Modeling (SEM) using the Partial Least Squares (PLS) approach to evaluate discriminant validity, which determines whether a construct is genuinely distinct from other constructs within the model. The confidence intervals of the HTMT statistic do not equal or exceed 0.85 for all constructs, further confirming discriminant validity (Kline, 2015; Hair et al., 2017). In summary, the findings presented in Tables 4.8 substantiate the reliability and validity of the measurement model employed in this study.

Table 4.8: HTMT

	Contract_	**NR**	**OD_**	**SC**	**SCP_**
Contract_					
NR	**0.681**				
OD_	**0.575**	**0.743**			
SC	**0.526**	**0.763**	**0.556**		
SCP_	**0.655**	**0.777**	**0.684**	**0.605**	

4.4.7 Structural Equation Model

Figure 4.2 presents the outcomes of a PLS analysis of the research model, highlighting significant path coefficients at the 0.05 level. To assess the significance of the path coefficients, bootstrapping with 5,000 samples was conducted (Hair et al., 2017). The VIF values for all predictor constructs are above 0.2 and below 5.0, which can eliminate the risks of collinearity among constructs (See Table 4.9).

Table 4.9:The Variance Inflation Factor (VIF)

	CC	NR	OD	SC	SCP_
CC		1.371			1.485
NR					3.091
OD		1.535			1.976
SC		1.465			2.040
SCP_					

The coefficient of determination, or R^2 value, is widely used to evaluate structural models. This coefficient is obtained through the PLS algorithm, which measures the influence of exogenous variables on endogenous ones. Table presents the R^2 values for the dependent variables NR and SCP, which are 0.676 and 0.593, respectively. These findings suggest that the quality of the information service explains 67.6% of the variance in NR and 59.3% of the variance in SCP (See Table 4.10).

Table 4. 10:Coefficient of determination (R-square)

	R Square	R Square Adjusted
NR	0.676	0.672
SCP_	0.593	0.586

Additionally, Cohen's effect size (f^2) was evaluated for each dimension of SCP. As outlined by Hair et al. (2020), f^2 values of 0.02, 0.15, and 0.35 correspond to small, medium, and large effects on the endogenous SCP, respectively. The results indicate that SC, CC and OD has small direct impacts on SCP (0.008, 0.043 and 0.071 respectively), while NR has medium direct effects on SCP, with values of 0.137. Notably, although having a small direct impact on SCP, OD exerts a

medium indirect impact (0.287), while SC exhibit a substantial indirect impact (0.392) on SCP. (See Table 4.11).

Table 4.11: Effect size (F-square)

	CC	NR	OD	SC	SCP
CC		0.083			0.043
NR					0.137
OD		0.287			0.071
SC		0.392			**0.008**
SCP_					

4.4.8 Hypothesis testing

The hypotheses and structural model were assessed using path coefficients as recommended by Hair et al. (2017). We conducted the analysis by drawing 5,000 bootstrap subsamples from a dataset of 239 cases to evaluate the significance of the results. A 5% significance level was applied to test the structural model and the proposed hypotheses. Furthermore, the confidence intervals and p-values (set at 0.05) were examined to confirm the significance of the hypothesized relationships.

4.4.9 Testing the mediation effects of NR

The bootstrapping method was utilized to evaluate the direct effects and the mediation effect of NR on the relationship between CC, OD, and SC on SCP (See Table 4.12)

Table 4.12:Total effects of NR

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Hypothesis	Evidence
CC -> SCP	0.242	0.234	0.068	3.577	0.000	H1	Supported
CC -> NR	0.192	0.188	0.057	3.346	0.001	H2	Supported

OD -> SCP	0.396	0.399	0.094	4.191	0.000	H3	Supported
OD -> NR	0.378	0.383	0.077	4.913	0.000	H4	Supported
SC -> SCP	0.261	0.269	0.100	2.613	0.009	H5	Supported
SC -> NR	0.431	0.431	0.083	5.200	0.000	H6	Supported
NR -> SCP	0.416	0.420	0.128	3.238	0.001	H7	Supported

4.5 Discussion

The result shown in Table 4.12 suggested the direct effects between CC and SCP with $\beta = 0.242$ and $p < 0.05$; OD and SCP ($\beta = 0.396$ and $p < 0.05$); SC and SCP ($\beta = 0.261$ and $p < 0.05$), and NR and SCP ($\beta = 0.416$ and $p < 0.05$). These wereindications that the hypothesis H1, H3, H5 and H7 were supported. On the other hand, the study results (Table 4.12) also demonstrate that network resources mediate the relationship between CC and SCP ($\beta = 0.192$, $p < 0.05$), OD and SCP ($\beta = 0.378$, $p < 0.05$), SC and SCP ($\beta = 0.431$, $p < 0.05$). Hence, H2, H4 and H6 were also confirmed. While both direct and indirect relationships were confirmed, their respective impacts on supply chain performance differ significantly. Firstly, it is evident that the contract category exerts a slightly greater influence on supply chain performance through the direct path (0.242) compared to the indirect path (0.192). In relation to the influence of contract category on supply chain performance (H1), the findings suggest that the type of contract (e.g., short-term or long-term) established with logistics providers plays an important key in influencing the enhancement of supply chain performance for service users. Johnsen et al. (2021) explained this direct relationship by noting that while under short-term contracting, the buyer's aversion to ratcheting restricts the supplier's ability to leverage information disclosed in earlier periods, long-term contracts provide supply chain partners with more stable performance outcomes, as the buyer's ratcheting aversion

in short-term contracts tends to result in higher rejection rates. In line with H1, Shi et al. (2022) asserts that the successful implementation of lean manufacturing systems at Toyota is heavily dependent on the establishment of long-term contracts with its logistics partners. These enduring relationships enable the company to enhance workforce productivity and minimize waste within its operations. Furthermore, this result empirically supports and extends Musiolik et al.'s (2012) assertion that network resources may take time to develop and are not immediately available. Consequently, shorter contracts provide fewer opportunities for the development and acquisition of network resources.

The findings of H2 build upon and enrich the work of Dutta & Reichelstein (2003), who demonstrated that long-term contracts promote long-term commitments between partners, which serve as relational resources. These relational resources, in turn, contribute to improvements in supply chain performance indicators, such as future investment returns.

Secondly, the results for H3 and H4 indicate that, with the mediation of network resources, there is minimal difference between the direct and indirect impacts of outsourcing drivers on supply chain performance (0.396 and 0.378). Since no prior studies have examined the mediation of network resources between outsourcing drivers and supply chain performance, H4 contributes to the existing literature by addressing this gap. Previous research, such as Kroes and Ghosh (2010), which analyzed the alignment between outsourcing drivers and performance across 196 companies, primarily focused on the direct relationship, whereas H4 extends this understanding by exploring the indirect path as well. Furthermore, the finding of H4 supports the perspective that outsourcing serves not merely as a cost-reduction strategy but as a strategic approach to leverage external capabilities for enhancing supply chain performance (Deepen et al., 2008). Among the identified outsourcing drivers, organizations demonstrate a propensity to form alliance

partnerships with specific partners (Lavie, 2006) to optimize their supply chain outcomes. To explain, while cost reduction remains one of the most prevalent outsourcing incentives (Lau & Zhang, 2006), Aharonovitz et al. (2018) illustrate that through strategic alliances with LSPs, LSU can fully exploit the intangible structural resources of LSPs—namely, their knowledge and expertise—to enhance overall supply chain performance metrics such as total cost reduction and the timeliness of logistics operation.

Moreover, the finding of Table 4.12 presented that with the mediation role of network resources, the impacts of selection criteria on supply chain performance was more significant than in direct path ($\beta = 0.431 > 0.261$). By incorporating network resources as a mediator, the findings extend and refine the empirical research of previous authors. In other words, there has been a lack of explanation regarding how network resources and strategic alliances impact the logistics outsourcing process and contribute to improving supply chain performance. Although Huo et al. (2015) and Huo et al. (2017) used trust and relationship commitment as their LSP selection and evaluation criteria to achieve competitive advantages and enhanced supply chain performance, their justification for the utilization of alliance partnership and network resources remains unclear. Similar to that, Shin et al. (2018) stated the influence of supply chain relationship quality on supply chain performance within the maritime logistics industry and pointed out that trust and commitment criteria are essential for developing relationship quality. However, they did not empirically examine the connection between it and supply chain performance.

The primary objective is to examine the mediating effect of network resources on supply chain performance. However, the direct relationship between network resources and supply chain performance also warrants attention. The findings not only confirm the direct linkage between network resources and a firm's supply chain performance but also contribute to the extant literature

on the characteristics of network resources. Specifically, while prior studies have predominantly focused on logistics-related networks, such as humanitarian logistics networks (Tofighi et al., 2016), reverse logistics networks (Ramezani & Bashiri, 2013), and emergency logistics networks (Cauhye et al., 2012), the results of this study indicate that network resources encompass a broader range of characteristics. In addition to relational resources (e.g. logistics networks), network resources may also include physical, technological, structural, and human resources.

4.6 Conclusion and implications

This study aimed to delineate the structural relationships among outsourcing drivers, selection criteria, contract management, network resources, and supply chain performance using SEM PLS. The findings confirm that network resources are pivotal in enhancing supply chain performance within logistics outsourcing contexts. Specifically, the impacts of network resources exhibit both indirect and direct effects on supply chain performance. In other words, the results demonstrate that while outsourcing drivers, selection criteria, and contract management positively effective on supply chain performance both directly and indirectly through network resources.

This paper makes a significant theoretical contribution by addressing the knowledge gap concerning the role of network resources in logistics outsourcing. Prior research had not explored the impact of network resources in this specific context, making this study pioneering in its investigation. By confirming the critical role of network resources and demonstrating their importance in enhancing supply chain performance, this paper expands the theoretical understanding of how network resources function within logistics outsourcing. The findings also offer practical insights for logistics and supply chain managers, emphasizing the strategic value of developing robust partnerships with LSPs. In relation to the relationship between outsourcing drivers and supply chain performance, it is essential for managers to adopt a strategic and proactive

approach from the outset of the outsourcing process. Specifically, decision-makers should place greater emphasis on clearly identifying and articulating the primary drivers motivating the logistics outsourcing initiative. To explain, establishing these drivers at an early stage allows managers to formulate a structured plan for the development of network resource achievement to enhance competitive advantages in later stages.

Moreover, managers can leverage a flexible and customized set of selection criteria when forming strategic alliances with specific logistics providers to enhance future supply chain performance. Conversely, for logistics providers who are not potential long-term partners, managers can apply standardized selection frameworks to maintain competitiveness among candidates. Additionally, the study highlights the importance of long-term contract arrangements with potential logistics partners. Establishing such agreements can help managers avoid repeated, complex selection procedures while developing stable and disruption-free alliance partnerships. Besides, rather than primarily emphasising the utilisation of logistics assets and services from LSPs for short-term supply chain performance improvements, LSUs should prioritise the long-term benefits achievable through clearly defined outsourcing drivers and strategic partnerships with suitable LSPs.

Despite these insights, the study is not without limitations. First, future research should consider incorporating additional explanatory variables to gain a more comprehensive understanding of the relationship between network resources and supply chain performance. One such variable is the supply chain strategy adopted by LSUs. As outsourcing drivers provide critical insights into why firms engage in external outsourcing partnerships, the strategies of LSUs (e.g. lean, agile, etc.) can significantly shape how they leverage and prioritize network resources. Moreover, the model tested encompasses a broad range of industries, which may dilute its practical relevance for specific sectors. Future research should consider focusing on individual industries to provide more

targeted and actionable insights for logistics and supply chain practitioners. This approach could enhance the practical applicability of the findings and offer more nuanced guidance for industry-specific challenges.

4.7 Reference list of chapter 4

1. Abraham, J., Sick, B., Anderson, J., Berg, A., Dehmer, C., & Tufano, A. (2011). Selecting a provider: What factors influence patients' decision making? *Journal of Healthcare Management, 56*(2), 99-116.
2. Aguezzoul, A. (2014). Third-party logistics selection problem: A literature review on criteria and methods. *Omega, 49*, 69-78.
3. Aharonovitz, M. C. S., Vidal Vieira, J. G., & Suyama, S. S. (2018). How logistics performance is affected by supply chain relationships. *The International Journal of Logistics Management, 29*(1), 284-307.
4. Alkhatib, S. F., Darlington, R., & Nguyen, T. T. (2015). Logistics service providers (LSPs) evaluation and selection: Literature review and framework development. *Strategic Outsourcing: An International Journal, 8*(1), 102-134.
5. Anand, N., & Grover, N. (2015). Measuring retail supply chain performance: Theoretical model using key performance indicators (KPIs). *Benchmarking: An International Journal, 22*(1), 135-166.
6. Arif, J., & Jawab, F. (2018, April). Outsourcing of logistics' activities: Impact analysis on logistics service performance. In *2018 International Colloquium on Logistics and Supply Chain Management*.
7. Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research, 14*(3), 396-402.
8. Azevedo, S. G., Govindan, K., Carvalho, H., & Cruz-Machado, V. (2013). Ecosilient index to assess the greenness and resilience of the upstream automotive supply chain. *Journal of Cleaner Production, 56*, 131-146.
9. Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*(1), 74-94.
10. Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99-120.
11. Bienstock, C. C., Mentzer, J. T., & Bird, M. M. (1997). Measuring physical distribution service quality. *Journal of the Academy of Marketing Science, 25*(1), 31-44.
12. Bottani, E., & Rizzi, A. (2006). A fuzzy TOPSIS methodology to support outsourcing of logistics services. *Supply Chain Management: An International Journal, 11*(4), 294-308.
13. Bowersox, D. J., Closs, D. J., & Stank, T. P. (1999). *21st century logistics: Making supply chain integration a reality*. Council of Logistics Management.
14. Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Lawrence Erlbaum Associates.
15. Casanueva, C., Gallego, A., & Revilla, M. A. (2015). Access and mobilization of network resources and competitive advantage in hotels: A conceptual framework. *International Journal of Contemporary Hospitality Management, 27*(6), 1279-1300.

16. Caunhye, A. M., Nie, X., & Pokharel, S. (2012). Optimization models in emergency logistics: A literature review. *Socio-Economic Planning Sciences, 46*(1), 4-13.
17. Chen, Y. M., Goan, M. J., & Huang, P. N. (2011). Selection process in logistics outsourcing–a view from third-party logistics provider. *Production Planning and Control, 22*(3), 308-324.
18. Chopra, S., & Sodhi, M. (2012). Managing risk to avoid supply-chain breakdown. *MIT Sloan Management Review, 46*(1), 53-61.
19. Chu, Z., & Wang, Q. (2012). Drivers of relationship quality in logistics outsourcing in China. *Journal of Supply Chain Management, 48*(3), 78-96.
20. Dash, G., & Paul, J. (2021). CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting. Technological Forecasting and Social Change, 173, 121092.
21. Deepen, J. M., Goldsby, T. J., Knemeyer, A. M., & Wallenburg, C. M. (2008). Beyond expectations: An examination of logistics outsourcing goal achievement and goal exceedance. *Journal of Business Logistics, 29*(2), 75-105.
22. Ding, M. J., Kam, B. H., Zhang, J. Y., & Jie, F. (2015). Effects of human resource management practices on logistics and supply chain competencies: Evidence from China logistics service market. *International Journal of Production Research, 53*(10), 2885-2903.
23. Dutta, S., & Reichelstein, S. (2003). Leading indicator variables, performance measurement, and long-term versus short-term contracts. *Journal of Accounting Research, 41*(5), 837-866.
24. ERTURGUT, R., & ALANUR, H. (2015). Freight forwarding and military logistics as a strategic outsourcing form: An empirical analysis on military freight forwarding firms in US. *Engineering Science and Technology, 2*(9), 2382-2390.
25. Falsini, D., Fondi, F., & Schiraldi, M. M. (2012). A logistics provider evaluation and selection methodology based on AHP, DEA and linear programming integration. *International Journal of Production Research, 50*(17), 4822-4829.
26. Fernandes, A. C., Sampaio, P., Sameiro, M., & Truong, H. Q. (2017). Supply chain management and quality management integration: A conceptual model proposal. *International Journal of Quality & Reliability Management, 34*(1), 53-67.
27. Gotzamani, K., Longinidis, P., & Vouzas, F. (2010). The logistics services outsourcing dilemma: Quality management and financial performance perspectives. *Supply Chain Management: An International Journal, 15*(6), 438-453.
28. Gulati, R., Lavie, D., & Madhavan, R. R. (2011). How do networks matter? The performance effects of interorganizational networks. *Research in Organizational Behavior, 31*, 207-224.
29. Gunasekaran, A., Irani, Z., Choy, K. L., Filippi, L., & Papadopoulos, T. (2015). Performance measures and metrics in outsourcing decisions: A review for research and applications. *International Journal of Production Economics, 161*, 153-166.
30. Gupta, A., Singh, R. K., & Mangla, S. K. (2022). Evaluation of logistics providers for sustainable service quality: Analytics based decision making framework. *Annals of Operations Research, 315*(2), 1617-1664.
31. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Prentice Hall.

32. Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. Journal of Business Research, 109, 101–110. https://doi.org/10.1016/j.jbusres.2019.11 .069
33. Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Sage.
34. Hair J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). LS-SEM or CB-SEM: Updated guidelines on which method to use. International Journal of Multivariate Data Analysis, 1(2), 107–123.
35. Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2–24.
36. Hätönen, J., & Eriksson, T. (2009). 30+ years of research and practice of outsourcing: Exploring the past and anticipating the future. *Journal of International Management, 15*(2), 142-155.
37. Henseler, J. (2017). Partial least squares path modeling. In *Advanced Methods for Modeling Markets* (pp. 361-381). Springer.
38. Hsu, C. C., Liou, J. J., & Chuang, Y. C. (2013). Integrating DANP and modified grey relation theory for the selection of an outsourcing provider. *Expert Systems with Applications, 40*(6), 2297-2304.
39. Hung Lau, K., & Zhang, J. (2006). Drivers and obstacles of outsourcing practices in China. *International Journal of Physical Distribution & Logistics Management, 36*(10), 776-792.
40. Huo, B., Liu, C., Chen, H., & Zhao, X. (2017). Dependence, trust, and 3PL integration: An empirical study in China. *International Journal of Physical Distribution & Logistics Management, 47*(9), 927-948.
41. Huo, B., Liu, C., Kang, M., & Zhao, X. (2015). The impact of dependence and relationship commitment on logistics outsourcing: Empirical evidence from Greater China. *International Journal of Physical Distribution & Logistics Management, 45*(9/10), 887-912.
42. Jaafar, H. S., & Rafiq, M. (2005). Logistics service quality and commitment in third party logistics. *Gading Business and Management Journal, 9*(1), 1-12.
43. Jiang, B., Belohlav, J. A., & Young, S. T. (2007). Outsourcing impact on manufacturing firms' value: Evidence from Japan. *Journal of Operations Management, 25*(2), 885-900.
44. Kam, B. H., Ding, M. J., & Zhang, J. Y. (2015). The effects of human resource practices on firm performance: A study of Chinese logistics service providers. *International Journal of Production Research, 53*(3), 881-889.
45. Liu, C., Huo, B., Liu, S., & Zhao, X. (2015). Effect of information sharing and process coordination on logistics outsourcing. *Industrial Management & Data Systems, 115*(1), 41-63.
46. Liu, W., & Lyons, A. C. (2011). An analysis of third-party logistics performance and service provision. *Transportation Research Part E: Logistics and Transportation Review, 47*(4), 547-570.
47. Liu, W., Grant, D. B., McKinnon, A. C., & Feng, Y. (2010). An empirical examination of the contribution of capabilities to the competitiveness of logistics service providers: A perspective from China. *International Journal of Physical Distribution & Logistics Management, 40*(10), 847-866.

48. Long, Y., & Liu, Q. (2020). Logistics service quality evaluation based on FAHP and TOPSIS method. *Discrete Dynamics in Nature and Society*, 2020, Article ID 9725428.
49. Lorentz, H., & Hilmola, O. P. (2008). Supply chain management in emerging market economies: The challenge of improving performance and flexibility. *International Journal of Productivity and Performance Management, 57*(8), 688-706.
50. Lu, C. S., & Yang, C. S. (2010). Logistics service capabilities and firm performance of international distribution center operators. *The Service Industries Journal, 30*(2), 281-298.
51. Luo, W., & Zhang, L. (2010). Industrial cluster logistics in China: An empirical analysis. *The Chinese Economy, 43*(3), 70-89.
52. Maloni, M. J., & Carter, C. R. (2006). Opportunities for research in third-party logistics. *Transportation Journal, 45*(2), 23-38.
53. Maloni, M. J., & Benton, W. C. (1997). Supply chain partnerships: Opportunities for operations research. *European Journal of Operational Research, 101*(3), 419-429.\
54. Matthews, L., Hair, J. and Matthews, R. (2018), "PLS-SEM: the holy grail for advanced analysis", The Marketing Management Journal, Vol. 28 No. 1, pp. 1-13, available at: http://www.mmaglobal. org/publications/MMJ/MMJ-Issues/2018-Spring/MMJ-2018-Vol28-Issue1-Complete.pdf#page59
55. McIvor, R. (2000). A practical framework for understanding the outsourcing process. *Supply Chain Management: An International Journal, 5*(1), 22-36.
56. Meade, L. M., & Sarkis, J. (2002). A conceptual model for selecting and evaluating third-party reverse logistics providers. *Supply Chain Management: An International Journal, 7*(5), 283-295.
57. Mentzer, J. T., & Flint, D. J. (1997). Validity in logistics research. *Journal of Business Logistics, 18*(1), 199-216.
58. Mommens, K., Vanderstraeten, J., & Matthyssens, P. (2020). Logistics innovation capability: Antecedents and performance effects. *Transportation Research Part E: Logistics and Transportation Review, 138*, 101960.
59. Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing, 58*(3), 20-38.
60. Murillo, C. (2014). Environmental responsibility and green purchasing: The determinants of green supplier selection. *Journal of Business Ethics, 124*(1), 183-184.
61. Musiolik, J., Markard, J., & Hekkert, M. (2012). Networks and network resources in technological innovation systems: Towards a conceptual framework for system building. Technological Forecasting and Social Change, 79(6), 1032-1048.
62. Neely, A. (2005). The evolution of performance measurement research: Developments in the last decade and a research agenda for the next. *International Journal of Operations & Production Management, 25*(12), 1264-1277.
63. Neves, J. S., & Bichueti, R. S. (2014). Outsourcing logistics activities: A transaction cost economics perspective. *Journal of Operations and Supply Chain Management, 7*(1), 65-80.
64. Nunnally, J. C. (1978). *Psychometric Theory*. 2nd ed. McGraw-Hill.
65. Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing, 64*(1), 12-40.

66. Pfeffer, J., & Salancik, G. R. (2003). *The External Control of Organizations: A Resource Dependence Perspective*. Stanford University Press.
67. Prajogo, D., & Olhager, J. (2012). Supply chain integration and performance: The effects of long-term relationships, information technology and sharing, and logistics integration. *International Journal of Production Economics, 135*(1), 514-522.
68. Rahman, S. (2011). An exploratory study of outsourcing 3PL services: An Australian perspective. *Benchmarking: An International Journal, 18*(3), 342-358.
69. Ramezani, M., Bashiri, M., & Tavakkoli-Moghaddam, R. (2013). A new multi-objective stochastic model for a forward/reverse logistic network design with responsiveness and quality level. *Applied Mathematical Modelling, 37*(1-2), 328-344.
70. Ringle, C. M., Wende, S., & Becker, J. M. (2015). *SmartPLS 3*. Boenningstedt: SmartPLS GmbH.
71. Usakli, A., & Rasoolimanesh, S. M. (2023). Which SEM to use and what to report? A comparison of CB-SEM and PLS-SEM. In Cutting edge research methods in hospitality and tourism (pp. 5-28). Emerald Publishing Limited.
72. Sarkis, J. (2003). A strategic decision framework for green supply chain management. *Journal of Cleaner Production, 11*(4), 397-409.
73. Schneider, L., & Wallenburg, C. M. (2013). 50 years of research on organizing the purchasing function: Do we need any more?. *Journal of Purchasing and Supply Management, 19*(3), 144-164.
74. Shah, R., & Goldstein, S. M. (2006). Use of structural equation modeling in operations management research: Looking back and forward. *Journal of Operations Management, 24*(2), 148-169.
75. Sheffi, Y. (2001). Supply chain management under the threat of international terrorism. *The International Journal of Logistics Management, 12*(2), 1-11.
76. Simatupang, T. M., & Sridharan, R. (2002). The collaborative supply chain. *International Journal of Logistics Management, 13*(1), 15-30.
77. Skinner, W. (1969). Manufacturing-missing link in corporate strategy. *Harvard Business Review, 47*(3), 136-145.
78. Slack, N., Chambers, S., & Johnston, R. (2010). *Operations Management*. 6th ed. Pearson Education Limited.
79. Slone, R. E. (2004). Leading a supply chain turnaround. *Harvard Business Review, 82*(10), 114-121.
80. Stank, T. P., Keller, S. B., & Closs, D. J. (2001). Performance benefits of supply chain logistical integration. *Transportation Journal, 41*(2), 32-46.
81. Stock, J. R., & Lambert, D. M. (2001). *Strategic Logistics Management*. 4th ed. McGraw-Hill.
82. Stone, M. (1974). Cross-validatory choice and assessment of statistical predictions. *Journal of the Royal Statistical Society, 36*(2), 111-147.
83. Tofighi, S., Torabi, S. A., & Mansouri, S. A. (2016). Humanitarian logistics network design under mixed uncertainty. *European Journal of Operational Research, 250*(1), 239-250.
84. Wan, Q., Yuan, Y., & Lai, F. (2019). Disentangling the driving factors of logistics outsourcing: a configurational perspective. *Journal of Enterprise Information Management*, 32(6), 964-992.

85. Wang, Z., & Lai, K. H. (2012). External pressures, internal responses, and green supply chain management among Chinese manufacturers. *International Journal of Operations & Production Management, 32*(6), 452-484.
86. Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal, 5*(2), 171-180.
87. Wu, W. Y., & Chiu, M. L. (2015). The impact of CSR perception on brand image, brand attitude, and buying willingness: A study of a global café. *International Journal of Organizational Innovation, 7*(1), 92-109.
88. Xia, Y., & Chen, Y. (2011). Logistic and economic comparisons of UPS and FedEx: An overview of recent trends. *Journal of Business Case Studies, 7*(1), 35-50.
89. Yeung, A. C. L. (2008). Strategic supply management, quality initiatives, and organizational performance. *Journal of Operations Management, 26*(4), 490-502.
90. Zailani, S., & Rajagopal, P. (2005). Supply chain integration and performance: US versus East Asian companies. *Supply Chain Management: An International Journal, 10*(5), 379-393.
91. Zhang, M., & Sun, J. (2012). Outsourcing in municipal governments: Experiences from the United States and China. *Public performance & management review*, 35(4), 696-726.
92. Zsidisin, G. A., & Ellram, L. M. (2003). An agency theory investigation of supply risk management. *Journal of Supply Chain Management, 39*(3), 15-27.

4.8 Appendices

Appendix A: Outer loadings

	Contract_	**NR**	**OD_**	**SC**	**SCP_**
CC1	**0.880**				
CC2	**0.889**				
OD1			**0.791**		
OD10			**0.781**		
OD2			**0.820**		
OD3			**0.834**		
OD4			**0.789**		
OD5			**0.784**		
OD6			**0.775**		
OD7			**0.820**		

OD8			**0.833**		
OD9			**0.781**		
RC1		**0.761**			
RC2		**0.779**			
RC3		**0.798**			
RC4		**0.789**			
RC5		**0.792**			
RC6		**0.775**			
RC7		**0.812**			
RC8		**0.804**			
RC9		**0.781**			
SC1				**0.754**	
SC10				**0.760**	
SC11				**0.731**	
SC2				**0.800**	
SC3				**0.741**	
SC4				**0.786**	
SC5				**0.761**	
SC6				**0.780**	
SC7				**0.811**	
SC8				**0.763**	
SC9				**0.764**	
SCP1					**0.738**

SCP10					**0.759**
SCP11					**0.765**
SCP12					**0.754**
SCP13					**0.731**
SCP14					**0.777**
SCP15					**0.773**
SCP2					**0.764**
SCP3					**0.761**
SCP4					**0.759**
SCP5					**0.725**
SCP7					**0.729**
SCP8					**0.742**
SCP9					**0.752**

Appendix B: Questionnaire – Survey

Questionnaire - Application of network resources in logistics outsourcing - Áp dụng tài nguyên mạng lưới thông qua thuê ngoài dịch vụ logistics.

Dear Sir/Madam,

We, a research team from the IAE Paris Sorbonne Business School , are conducting a research project entitled "Network resources in logistics outsourcing" We kindly invite you to fill out a short (approximately 20 minutes) questionnaire. Your response is of the utmost importance to us and to the success of the project." Thank you again for your time.

Kính gửi Quý ông/Bà,

Chúng tôi là nhóm nghiên cứu từ Trường Kinh doanh IAE Paris Sorbonne, hiện đang thực hiện một dự án nghiên cứu có tên "Khai thác tài nguyên network trong dịch vụ thuê ngoài logistics". Chúng tôi trân trọng kính mời quý vị dành thời gian hoàn thành một bảng khảo sát ngắn (khoảng 15 phút). Sự phản hồi của quý vị rất quan trọng đối với chúng tôi và sự thành công của dự án.

Xin chân thành cảm ơn quý vị đã dành thời gian.

* Indicates required question

1. What is your current educational background? *
   Trình độ học vấn hiện tại của bạn là gì?

   Mark only one oval.

   - ◯ Bachelor - Cử nhân
   - ◯ Master - Thạc sĩ
   - ◯ PhD - Tiến sĩ

2. How many years of experience do you have in the logistics industry? *
Bạn có bao nhiêu năm kinh nghiệm trong ngành logistics?

Mark only one oval.

- ◯ 2-5 years - 2 đến 5 năm
- ◯ 6-10 years - 6 đến 10 năm
- ◯ More than 10 years - Trên 10 năm

3. What is your current position?
Vị trí hiện tại trong công ty của bạn là gì?

Mark only one oval.

- ◯ Executive - Nhân viên
- ◯ Leader/Head of department/Manager - leader nhóm, trưởng phòng và giám đốc
- ◯ Board management team - Hội đồng quản trị

4. Please choose your business type
Vui lòng chọn loại hình kinh doanh của bạn

Mark only one oval.

- ◯ 100% Locally-owned - 100% vốn nội địa
- ◯ 100% Foreign-owned - 100% vốn nước ngoài
- ◯ Joint Venture- Liên doanh

5. Please choose your industry type *
Vui lòng chọn loại hình ngành nghề của bạn

Mark only one oval.

- ◯ F&B - Thực phẩm và Đồ uống
- ◯ Electronic - Điện tử
- ◯ Construction - Xây dựng
- ◯ Fashion, apparel, textile and garment - Thời trang, may mặc, dệt may và hàng may mặc
- ◯ Logistics
- ◯ Automatives - Ô tô
- ◯ Others (healthcare, cosmetics, etc) - Khác

6. What is the average estimated annual revenue of your company? *
Doanh thu ước tính hàng năm trung bình của công ty bạn là bao nhiêu?

Mark only one oval.

- ◯ Less than 1 million USD - Dưới 1 triệu USD
- ◯ From 1 to 5 million USD - Từ 1 đến 5 triệu USD
- ◯ Above 5 million USD - Trên 5 triệu USD

7. What is the most frequent outsourcing logistics activity? *
Bạn thường thuê ngoài hoạt động logistics nào nhất?

Mark only one oval.

- ◯ Transportation (Freight transportation (road, rail, air, sea). - Vận tải và các loại hình liên quan (Last-mile delivery - Giao hàng chặng cuối)
- ◯ Warehousing and Distribution - Kho bãi và phân phối
- ◯ Inventory Management - Quản lý tồn kho
- ◯ Order Fulfillment - Hoàn tất đơn hàng
- ◯ Customs Clearance and Compliance - Thông quan và Tuân thủ quy định
- ◯ Logistics IT solutions - Phần mềm Logistics

8. What is your most frequent logistics outsourcing service? *
Loại hình dịch vụ logistics bạn hay sử dụng khi thuê ngoài là gì?

Mark only one oval.

- ◯ Physical assets only: warehouse, transportation vehicles, logistics related equipment. Tài sản vật lý chỉ bao gồm kho và thiết bị logistics
- ◯ Value added services included (e.g.kitting, labeling, repackaging, Packaging optimization, Quality control and inspection, Labelling and barcoding) - Bao gồm các dịch vụ gia tăng giá trị như đóng gói, dán nhãn, kiểm hàng, etc.
- ◯ Logistics management services (e.g.transportation management, inventory management, warehouse management, custom clearance and compliance, order fulfillment, supply chain technology, reverse logistics management). - Dịch vụ quản lý Logistics như quản lý tồn kho, quản lý vận tải, hậu cần ngược, etc.)
- ◯ Logistics distribution network management (outsourcing all logistics distribution related activities to logistics providers) - Quản lý mạng lưới phân phối logistics (gia công toàn bộ các hoạt động phân phối logistics cho các nhà cung cấp dịch vụ logistics)

9. How many logistics providers do you have for **a specific outsourcing logistics activity**? *
Bạn có bao nhiêu nhà cung cấp logistics cho một hoạt động gia công logistics cụ thể?

Mark only one oval.

- ◯ 1
- ◯ 2-5
- ◯ More than 5

In this part, we would like to have your evaluation on the following contract type used for your logistics providers. (5-point scale: not important -extremely important).
Trong phần này, chúng tôi mong muốn nhận được đánh giá của bạn về các loại hợp đồng sau đây được sử dụng cho các nhà cung cấp logistics của bạn. (Thang điểm 5 mức: không quan trọng - cực kỳ quan trọng).

10. Short-term contract (e.g. 1-12 months) - Hợp đồng ngắn hạn (ví dụ: 1-12 tháng) *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

11. Long-term contract (e.g. more than 1 year) - Hợp đồng dài hạn (ví dụ: hơn 1 năm) *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trọng

12. What is the scope of your company's logistics operation? Phạm vi hoạt động logistics của công ty bạn như thế nào? *

Mark only one oval.

- ◯ Local operation (keep all logistics activities within local network and local market) - Hoạt động địa phương (duy trì tất cả các hoạt động logistics trong mạng lưới và thị trường địa phương)
- ◯ International operation (operate logistics activities internationally (e.g. import, export, etc) Hoạt động quốc tế (thực hiện các hoạt động logistics quốc tế (ví dụ: nhập khẩu, xuất khẩu, v.v.)

Now, we will ask you about **the main reasons for outsourcing logistics activities**. (5-point scale: not important -extremely important).
Bây giờ, chúng tôi sẽ hỏi bạn về các lý do chính để gia công các hoạt động logistics. (Thang điểm 5 mức: 1 không quan trọng - 5 cực kỳ quan trọng).
Evaluate the following supply chain drivers for outsourcing logistics services.

Đánh giá các lí do khiến công bạn cần thuê ngoài dịch vụ logistics

13. Focus on our core competencies - Tập trung vào các năng lực cốt lõi *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

14. To save logistics costs - Để tiết kiệm chi phí logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

15. To save the time for logistics operation - Để tiết kiệm thời gian cho hoạt động logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

16. To reduce heavy asset investment - Để giảm bớt đầu tư vào tài sản logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

17. To improve the service's flexibility and agility - Để cải thiện tính linh hoạt và khả năng ứng phó của dịch vụ công ty *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

18. To have the logistics knowledge, experience and equipment of logistics providers - Để có được kiến thức, kinh nghiệm và thiết bị logistics của các nhà cung cấp dịch vụ logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

19. To expand the network through the logistics provider's network (their clients, their partners, etc). - Để mở rộng mạng lưới thông qua mạng lưới của nhà cung cấp dịch vụ logistics (khách hàng của họ, đối tác của họ, v.v.). *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

20. To reduce the logistics risk in the operation - Để giảm thiểu rủi ro logistics trong hoạt động *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

21. To improve the logistics performance - Để cải thiện hiệu suất logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

22. To have the logistics provider's specific knowledge and experience in a specific industry. - Để có kiến thức và kinh nghiệm chuyên môn của nhà cung cấp dịch vụ logistics trong một ngành cụ thể. *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

Evaluate the following **Selection criteria** used to select logistics providers (5-point scale: not important -extremely important).
Đánh giá các tiêu chí lựa chọn sau đây được sử dụng để chọn nhà cung cấp dịch vụ logistics (Thang điểm 5 mức: không quan trọng - cực kỳ quan trọng).

23. Logistics Service Quality - Chất lượng dịch vụ logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

24. On-time delivery performance - Hiệu suất giao hàng đúng hạn *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

25. Flexibility in logistics operation - Tính linh hoạt trong hoạt động logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

26. Cost of service - Chi phí dịch vụ *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

27. Customer Service quality - Chất lượng dịch vụ khách hàng *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

28. Logistics information system - Hệ thống thông tin logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

29. Financial strength - Sức mạnh tài chính của nhà cung cấp dịch vụ logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

30. Logistics provider's Reputation - Danh tiếng của nhà cung cấp dịch vụ logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

31. Geographic location (e.g. warehouse, hub, etc.) - Vị trí địa lý (ví dụ: kho bãi, trung tâm phân phối, v.v.) *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

32. Technological capability - Khả năng công nghệ *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

33. Performance History - Hiệu suất hoạt động trong quá khứ *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

34. Logistics provider's Environmental Policies - Chính sách môi trường của nhà cung cấp dịch vụ logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

35. Logistics provider's Human resource policies - Chính sách nguồn nhân lực của nhà cung cấp dịch vụ logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

Please notice that will reflects **the resources achieved** after having the relationship with the logistics providers. - Xin lưu ý rằng điều này sẽ phản ánh các nguồn lực đạt được sau khi thiết lập mối quan hệ với các nhà cung cấp dịch vụ logistics.
Evaluate the following "resources category" you achieve when forming partnerships with the logistics providers

(5-point scale: not important -extremely important).
Đánh giá các "hạng mục nguồn lực" mà bạn đạt được khi thiết lập quan hệ đối tác với các nhà cung cấp dịch vụ logistics (Thang điểm 5 mức: không quan trọng - cực kỳ quan trọng).

36. Logistics Physical assets: logistics infrastructure e.g. facilities, movement hardware and inventory Resources – production and distribution facilities and transportation - Tài sản vật lý logistics: cơ sở hạ tầng logistics (ví dụ: cơ sở vật chất, thiết bị vận chuyển và tài nguyên tồn kho) – cơ sở sản xuất và phân phối cũng như phương tiện vận tải *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

37. IT infrastructure – Physical IT, asset-computer, etc. *

Hạ tầng CNTT – Tài sản CNTT vật lý, máy tính, v.v.

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

38. Advanced logistics equipment - Thiết bị logistics tiên tiến *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

39. Advanced IT software/solution for information management - Phần mềm/giải pháp CNTT tiên tiến cho quản lý thông tin *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

40. Logistics provider's logistics knowledge, experience and expertise - Kiến thức, kinh nghiệm và chuyên môn logistics của nhà cung cấp dịch vụ logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

41. Logistics provider's knowledge in one specific industry (e.g. cold chain) - Kiến thức của nhà cung cấp dịch vụ logistics trong một ngành cụ thể (ví dụ: chuỗi lạnh) *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

42. Logistics provider's service flexibility - Tính linh hoạt trong dịch vụ của nhà cung cấp logistics *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

43. Logistics provider's logistics network (e.g. custom network, transportation-related network, etc.) - Mạng lưới logistics của nhà cung cấp dịch vụ logistics (ví dụ trong thông quan...) *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

44. Logistics provider's global distribution network (e.g. future international business opportunities for clients) - Mạng lưới phân phối toàn cầu của nhà cung cấp dịch vụ logistics (ví dụ: cơ hội kinh doanh quốc tế trong tương lai cho khách hàng) *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

Trong phần này, xin vui lòng đánh giá các thuộc tính mục tiêu chuỗi cung ứng của công ty bạn. (Thang điểm 5 mức: không quan trọng - cực kỳ quan trọng).
Remember, this part will reflect your company's supply chain strategy.
Lưu ý rằng phần này sẽ phản ánh chiến lược chuỗi cung ứng của công ty bạn.

45. First we will start with **Responsiveness** (This attribute measures how quickly a supply chain can react to changes in customer demand or market fluctuations. It reflects the flexibility to adjust production or delivery schedules to meet urgent needs.) **-** Trước tiên, chúng ta sẽ bắt đầu với **Khả năng phản ứng** (Chiến lược này đo lường tốc độ mà chuỗi cung ứng có thể phản ứng với sự thay đổi trong nhu cầu của khách hàng hoặc biến động thị trường. Nó phản ánh khả năng linh hoạt để điều chỉnh lịch trình sản xuất hoặc giao hàng nhằm đáp ứng nhu cầu cấp bách.) *

4o mini

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

46. Second, we have **Reliability** (This refers to the supply chain's ability to consistently deliver products or services according to the promised schedule and quality. It focuses on meeting deadlines and ensuring accuracy in orders.) **-** Thứ hai, chúng ta có **Độ tin cậy** (Chiến lược này đề cập đến khả năng của chuỗi cung ứng trong việc liên tục cung cấp sản phẩm hoặc dịch vụ theo lịch trình và chất lượng đã hứa. Nó tập trung vào việc đảm bảo đúng hạn và chính xác trong các đơn hàng.) *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

47. Then, we have **Agility** (This looks at how quickly the system can adjust to new technologies, product requirements, or market trends.) - Tiếp theo, chúng ta có **Tính linh hoạt** (Chiến lược này xem xét khả năng của hệ thống trong việc điều chỉnh nhanh chóng đối với công nghệ mới, yêu cầu sản phẩm hoặc xu hướng thị trường.) *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

48. Then, we have **Cost** (This attribute measures the total financial expenses associated with running the supply chain.) - Sau đó, chúng ta có **Chi phí** (Chiến lược này đo lường tổng chi phí tài chính liên quan đến việc vận hành chuỗi cung ứng.) *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

49. Last, we have **Asset Management** (This focuses on how effectively the supply chain utilizes its resources, including equipment, facilities, and inventory. It looks at optimizing resource allocation to minimize waste and maximize output.) - Cuối cùng, chúng ta có Quản lý Tài sản (Chiến lược này tập trung vào việc chuỗi cung ứng sử dụng tài nguyên của mình, bao gồm thiết bị, cơ sở vật chất và tồn kho, một cách hiệu quả như thế nào. Nó xem xét việc tối ưu hóa phân bổ tài nguyên để giảm thiểu lãng phí và tối đa hóa sản lượng.) *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

This part will evaluate your Supply Chain performance - Phần này sẽ đánh giá hiệu suất chuỗi cung ứng của bạn.

Evaluate the following **supply chain performance indicators** that can be improved by forming a good partnership with logistics providers

(5-point scale: not important -extremely important). Đánh giá các chỉ số hiệu suất chuỗi cung ứng sau đây có thể được cải thiện nhờ việc thiết lập mối quan hệ hợp tác tốt với các nhà cung cấp dịch vụ logistics (Thang điểm 5 mức: không quan trọng - cực kỳ quan trọng).

50. Response time of our logistics providers. - Thời gian phản hồi của các nhà cung cấp của chúng tôi. *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

51. The degree of reliability on vendor performance. - Mức độ tin cậy vào hiệu suất của nhà cung cấp dịch vụ *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

52. Workforce productivity. - Năng suất lao động *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

53. Amount of production waste. - Số lượng chất thải sản xuất. *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

54. Costs of inventory management. - Chi phí quản lý tồn kho. *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

55. Number of new products developed per year. - Số lượng sản phẩm mới được phát triển hàng năm. *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

56. Workforce flexibility - Tính linh hoạt của lực lượng lao động. *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

57. Delivery timelines. - Thời gian giao hàng. *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

58. Response time to customer queries.- Thời gian phản hồi các câu hỏi của khách hàng. *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

59. Percentage of "perfect orders" delivered. - Tỷ lệ đơn hàng được giao "hoàn hảo" . *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

60. Product/service quality. - Chất lượng sản phẩm/dịch vụ. *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

61. Product value perceived by the customer. - Giá trị sản phẩm mà khách hàng cộng nhận. *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

62. Total Cost reduction - Giảm tổng chi phí *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

63. Market share growth. - Tăng trưởng thị phần *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

64. Return on Investments (ROI). - Lợi tức đầu tư (ROI) *

Mark only one oval.

	1	2	3	4	5	
Not	◯	◯	◯	◯	◯	Extremely important - Cực kì quan trong

This is the end of our survey. Thank you so much for your support!

Chapter 5: Conclusion

This general conclusion aims to present a synthesis of our work, provide an answer to the research question, and outline potential future perspectives.

5.1 Summary and Response to the Research Question

This section presents a summary of the thesis, outlining the main chapters in accordance with the progressive development of network resource applications within the context of logistics outsourcing. The sequence of chapter presentations is structured to align with the logical progression of the study, with each chapter addressing specific research questions. This approach ensures a coherent development of the research.

5.1.1 RQ1: What potential research directions should future researchers explore in the context of logistics outsourcing?

5.1.1.1 Summary

Chapter 2 presents a comprehensive desk-based analysis aimed at deepening the understanding of logistics outsourcing. This chapter examines the distribution of academic papers within the field, categorizing them based on journals, publication years, theories used, esearch designs, and prevalent topics. This analysis provides insights into the scholarly landscape and key research trends in logistics outsourcing. Furthermore, this chapter conducts a content analysis of various research themes within the context of logistics outsourcing. These include outsourcing strategy, relationship management, the integration of advanced technologies, sustainable logistics outsourcing, and the implications of logistics outsourcing during disruptive events. This exploration provides a comprehensive understanding of the key areas of focus in existing literature.

5.1.1.2 Response to Research Question 1

Following the content analysis and descriptive analysis, there remain several rooms for future researchers to explore various aspects of logistics outsourcing further. Figure 5.1 presents the future research directions of content analysis and descriptive analysis of Chapter 2 to answer **Research Question 1**. First, given the popular application of RBV and TCE, there are rooms for future research to explore alternative theoretical frameworks, such as Relational Exchange Theory, Contracting Theory, and Supply Chain Management Theory, within the context of logistics outsourcing. To be more specific, while RBV has been extensively used in this context, the use of ERBV remains absent in the existing literature, highlighting a gap for further investigation. This gap has been addressed in Chapters 3 and Chapter 4 of this study.

Furthermore, while empirical quantitative research designs have become the most widely adopted methodology, there are rooms for future studies to employ empirical qualitative approaches. In alignment with the findings of the content analysis, qualitative research can be particularly valuable in exploring topics such as relationship management, the impact of disruptive events, and the utilization of advanced technologies in logistics outsourcing (see Figure 5.1).

Several opportunities exist for future research to explore four key areas of logistics outsourcing: relationship development, sustainability, advanced technologies, and the influence of disruptive events. First, while the COVID-19 pandemic has been recognized as a disruptive event in logistics outsourcing, other significant events need further scholarly attention. For example, the impact of the Russian invasion of Ukraine on international freight services remains an important yet underexplored area, highlighting the need for additional research on the broader implications of geopolitical disruptions on global supply chains. Moreover, although technologies such as IoT, Blockchain, AI, and communication technology have been explored in the literature, other Industry 4.0 technologies require greater scholarly attention. These include 3D printing, cyber-physical systems, robotics, 5G, and edge computing, which have the potential to significantly improve supply chain performance and logistics outsourcing service performance. A promising research direction for future scholars investigating either "advanced technology" or "disruptive events" in logistics outsourcing is risk management. Studies focusing on disruptive events can examine different types of risks, such as operational risks, that arise during such disruptive events. Meanwhile, research regarding advanced technology can explore technology-related risks, including cybersecurity threats associated with the integration of technology innovations in logistics outsourcing services. In addition to the two topics, future researchers could investigate the advantages of risk reduction within the context of sustainable logistics outsourcing. This topic can be examined in terms of economic, environmental, and social compliance within the logistics outsourcing practices of LSPs.

On the other hand, given the limited research on ERBV, it is suggested that future studies on relationship management in logistics outsourcing adopt ERBV as their foundational theoretical framework. This approach would provide a more comprehensive understanding of how firms develop partnerships to achieve competitive advantages from the LSPs.

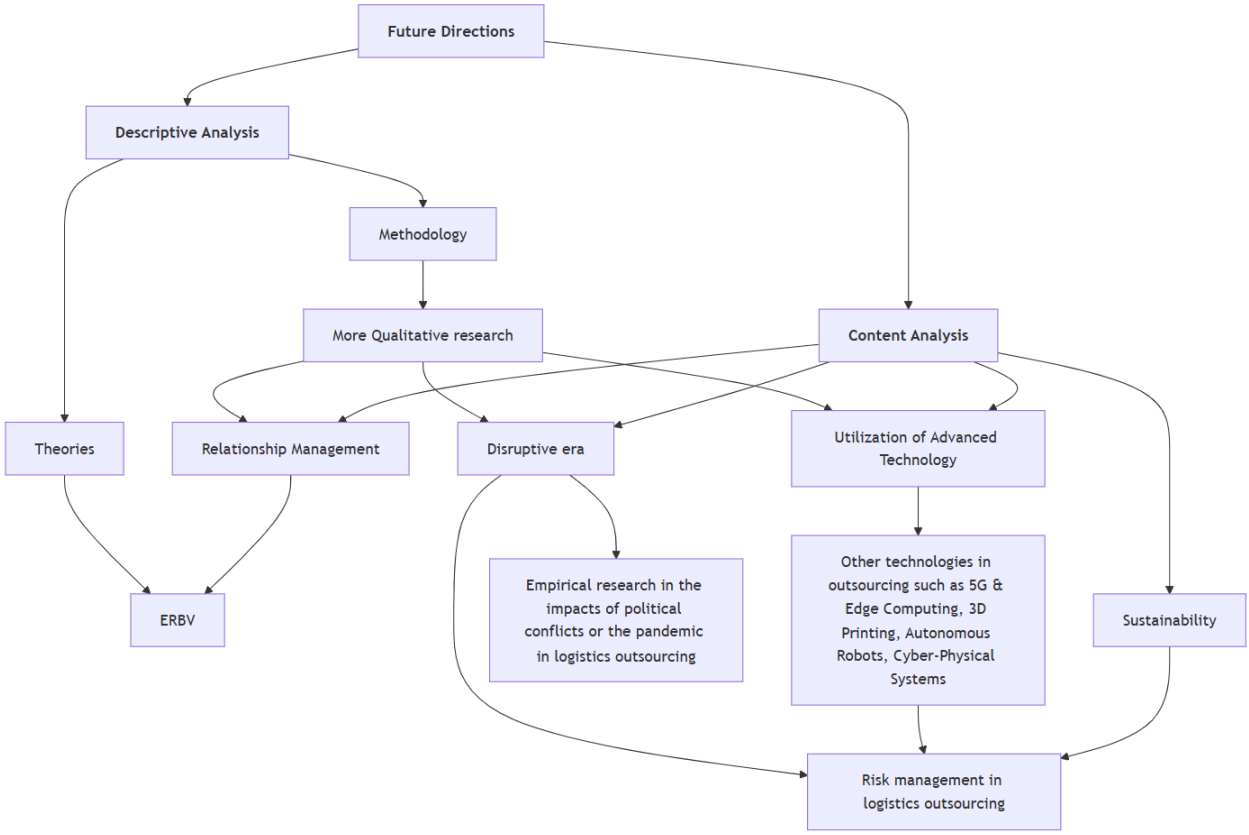

Figure 5.1: Future directions for researchers regarding logistics outsourcing

Source: Author's own work

In summary, Figure 5.1 outlines several key research directions in the field of logistics outsourcing, identified through a comprehensive structured literature review of 207 articles published between 1992 and February 2023. These directions highlight numerous critical research gaps and promising future directions for scholars investigating logistics outsourcing.

5.1.2 RQ2: What are the outcomes of achieving network resources acquired by LSUs?

5.1.2.1 Summary

Chapter 3 explores the methods for acquiring network resources, the competitive advantages they provide, the specific benefits obtained, and the key factors influencing their attainment within the context of logistics outsourcing. Grounded in the ERBV theory and employing thematic analysis, the study identifies four primary themes: methods for acquiring network resources, determinants influencing their attainment, competitive advantages derived, and specific benefits realized. Furthermore, the analysis reveals twelve sub-themes and nine second-layered sub-themes, offering

a detailed and comprehensive examination of the dynamics of network resources in logistics outsourcing.

5.1.2.2 Response to Research Question 2

Following a thematic analysis of 30 interviews conducted in Chapter 3, the advantages of accessing network resources were identified and are illustrated in Figure 5.2. These benefits have been systematically categorized from the perspectives of LSUs and LSPs. Drawing on the resource classification presented in Chapter 1, the author categorized the extracted benefits and observed that the majority of resource types achieved from network resources are the structural, relational, and physical categories.

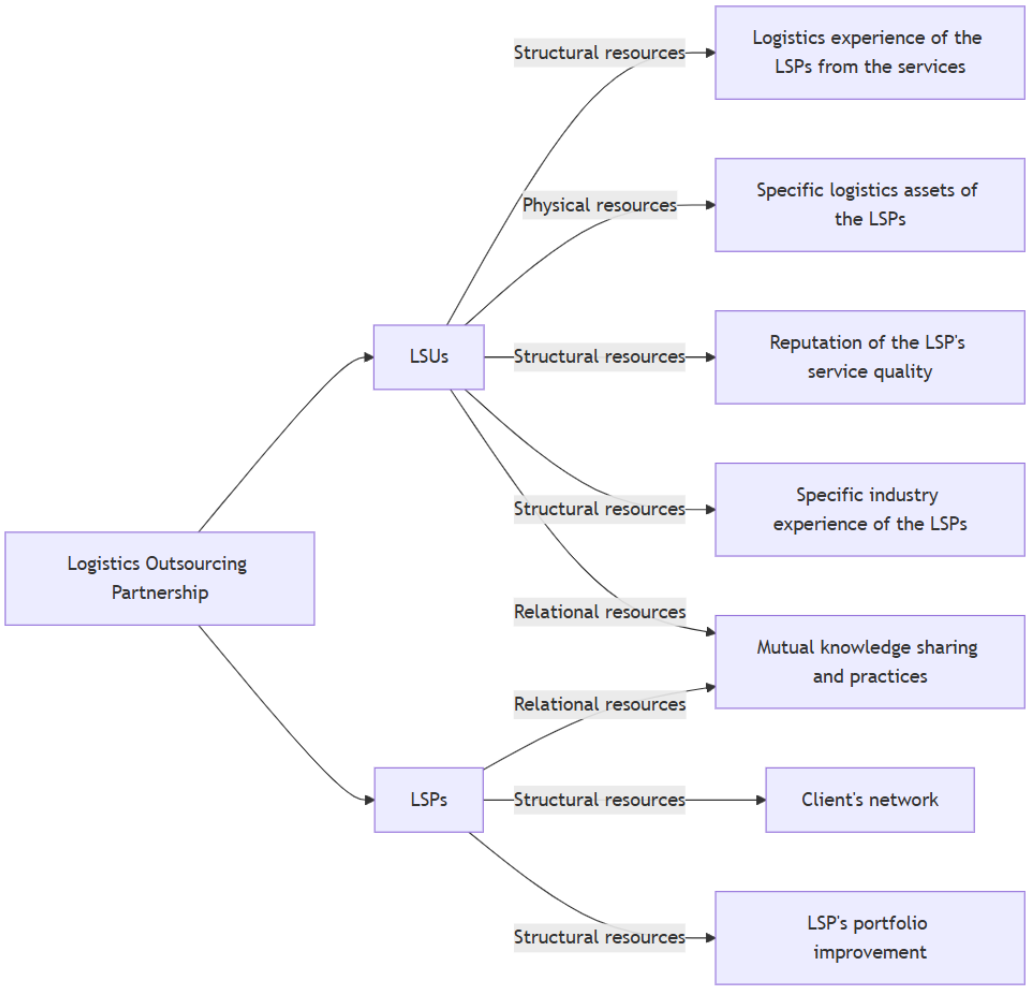

Figure 5.2: Extracted benefits achieved from network resources for LSPs and LSUs

Source: Author's own work

Research Question 2 has been empirically addressed, and the extracted benefits derived from the LSUs and LSPs have been discussed. Specifically, the findings indicate that LSUs primarily prioritize the experience, assets, and prestige of the LSPs. Conversely, LSPs seek to leverage the LSU network to expand their client list and enhance their credibility by associating with prominent clients. Furthermore, in addressing the attainment of relational resources through knowledge sharing and collaborative practices between the LSUs and LSPs, different perspectives emerge from both parties. LSUs emphasize that sharing information regarding product characteristics, organizational culture, and client priorities is essential for enhancing their service quality. In contrast, LSPs highlight the significance of improving their service quality as a fundamental factor in fostering long-term collaboration.

5.1.3 RQ3: How do network resources influence the supply chain performance of the LSUs?

5.1.3.1 Summary

Building upon the identification of network resource characteristics and the benefits of their attainment in Chapter 3, Chapter 4 examines the mediating role of network resources in the relationship between outsourcing drivers, selection criteria, and contract management with supply chain performance in the context of logistics outsourcing. This chapter employs empirical quantitative analysis to assess the extent to which network resources influence these relationships, providing deeper insights into their strategic significance within logistics outsourcing frameworks.

5.1.3.2 Response to Research Question 3

To answer Research Question 3, Chapter 4 conducted an empirical quantitative investigation from 239 organizations to estimate the influence of network resources as a mediator factor in the relationship between outsourcing drivers, selection criteria and contract management with supply chain performance in the context of logistics outsourcing. The findings confirm both direct and indirect relationship between outsourcing drivers, selection criteria, and contract management with supply chain performance (See Figure 5.3).

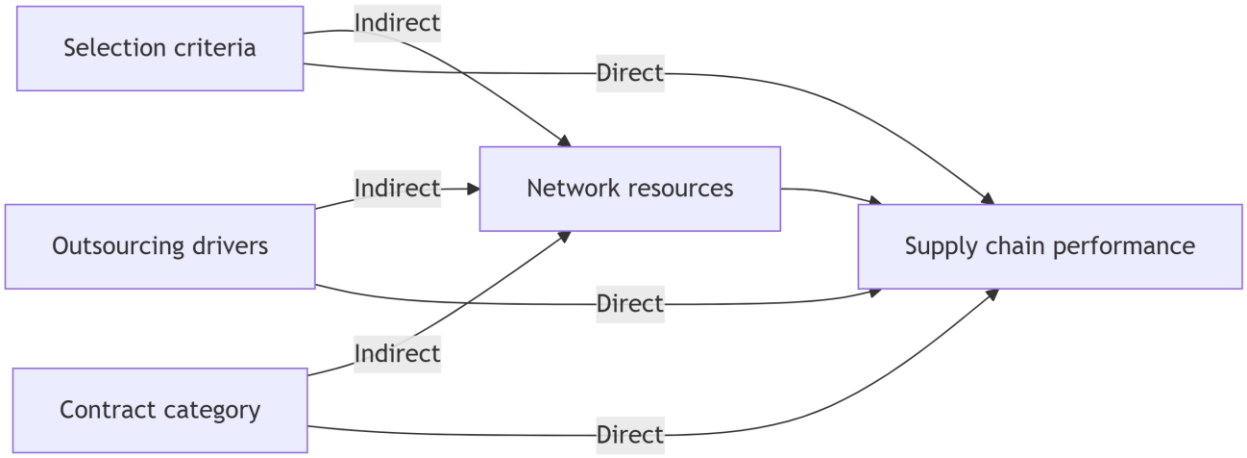

Figure 5.3: Direct and Indirect impacts of Network Resources on Supply Chain Performance

Source: Author's own work

For instance, the link between outsourcing drivers and supply chain performance can be explained by cost-saving driver. Specifically, LSUs are driven by the need to reduce costs, and their expectations regarding the delivered services are aligned with achieving cost efficiency within their supply chain performance. Next, it has been discussed in the past the important role of contract category on supply chain performance. Beyond the mandatory requirements and terms outlined in the contract, the category of the contract also exhibits an indirect relationship with supply chain performance through fostering long-term partnerships. Different contract types influence the nature of collaboration between parties, shaping the level of commitment, and incentives for continuous improvement that drive sustained supply chain improvements over time. To explain, a long-term contract indirectly contributes to enhanced supply chain performance by fostering a stable and enduring relationship between buyers and suppliers (Peleg et al., 2002). Hartman et al. (2020) inserted that long-term contracts facilitate trust-building and the development of deeper relationships between parties, whereas short-term, transactional agreements not only offer limited opportunities for relationship growth but also often sustain a lack of trust between the involved parties. Through long-term collaboration, suppliers are incentivized to lower prices, reduce cost uncertainties, and improve service quality to maintain the partnership; thereby, enhances overall supply chain efficiency. Furthermore, the selection criteria for logistics providers significantly influence supply chain performance, both directly and

indirectly with the mediation of network resources. In alignment with the literature mentioned in chapter 1, standardized selection criteria streamline the selection process, ensuring consistency, efficiency, and immediate operational effectiveness; hence, directly enhances supply chain performance. In contrast, with the mediating effects of network resources, the selection criteria can be used to develop deeper relationships with specific selected providers, instead of merely following standardized process and selecting logistics providers.

5.2 Limitations and future direction of the thesis

While extensive measures have been taken to ensure the reliability of this study, certain limitations are unavoidable. These limitations are outlined below; however, they also present opportunities for further advancing the application of network resources by LSUs. Accordingly, this discussion is supplemented with recommendations for future research to address these gaps and enhance the understanding of network resource utilization in logistics outsourcing.

First, one limitation of this thesis is the reliance on six popular academic databases in chapter 2, which may have resulted in the exclusion of relevant journal papers. As a result, the analysis may not fully capture the breadth of theoretical advancements in logistics outsourcing. Future research should incorporate additional academic databases, such as IEEE Xplore and Web of Science, to enable a more comprehensive and nuanced understanding of the theoretical landscape. Additionally, structured literature reviews primarily include theories derived from peer-reviewed journal articles, potentially overlooking unpublished studies and non-English sources. This limitation may lead to a skewed representation of theoretical developments within the field. To mitigate this issue, future reviews should consider adopting a more inclusive literature search strategy that embraces a wider variety of publication types and languages.

Second, the geographical scoping study focused exclusively on enterprises located in Vietnam, which restricts the generalizability of the findings regarding the application of network resources in logistics outsourcing to a broader international context. Given the limited geographic scope of the current study, future research should aim to explore variations in the utilization of network resources across different national or regional contexts. Cross-country comparative studies would offer valuable insights into how contextual differences shape resource collaboration strategies and supply chain performance outcomes, thereby enhancing the generalizability and applicability of the findings.

Another limitation is that the tested model encompasses a wide range of industries, which may reduce its practical applicability to specific sectors. This broad scope could limit the precision of insights relevant to specific industries. Future research should address this limitation by focusing on individual sectors, allowing for more targeted and industry-specific recommendations for logistics and supply chain practitioners.

Last, due to the study's novelty, the research focuses on logistics outsourcing rather than specific logistics outsourcing services such as ocean transport, cold-chain warehousing, air-freight customs clearance, and other specialized services. The qualitative empirical research reveals that different logistics services exhibit varying degrees of network resource influence. This finding suggests that the impact of network resources is not uniform across all logistics outsourcing services, highlighting the need for further investigation into how specific service types mediate this relationship to better understand how network resource utilization impacts distinct logistics outsourcing services.

5.3 Contributions

5.3.1 Theoretical contributions

According to the RBV theory, resource ownership is critical to attain competitive advantage. However, from the perspective of the ERBV, this notion is re-evaluated and further developed by Lavie (2006), who argues that direct resource ownership may not be necessary when network resources are effectively accessed and leveraged through inter-organizational relationships. This thesis contributes to the theoretical advancement of Lavie's ERBV by extending its application to the logistics outsourcing context. Specifically, it enriches Lavie's foundational ideas on network resource achievement by empirically examining key factors such as outsourcing drivers, supply chain performance improvements, selection criteria, methods for achieving network resources, and their overall influence within the logistics outsourcing context.

In light of the qualitative empirical findings, this thesis serves as a pioneering study in exploring the competitive advantages, extracted benefits, and key determinants influencing the attainment of network resources in the context of logistics outsourcing. By addressing these critical aspects, the research provides novel theoretical insights and expands the understanding of strategic network resource formation within logistics outsourcing contexts. To explain, this thesis posits a perspective on the strategic approaches to acquiring network resources, reflected as either

intentionally or unintentionally. Intentional network resource achievement denotes a deliberate strategy executed at the beginning phase, targeting the LSU's specific objectives. Also, the extracted benefits and performance improvements were explicitly identified from the perspective of LSUs, providing a clear understanding of the value derived from network resource utilization in logistics outsourcing. Conversely, unintentional network resource achievement emerges when firms establish partnerships with an objective towards indeterminate future potentials, such as advancements in innovative technologies or sustaining long-term service priorities. Building upon the exploration of intentional and unintentional shared resource achievement, future research could examine the evolutionary trajectory of unintentional shared resources. Specifically, further investigation should determine whether unintentional resource achievements may strategically transition into intentional initiatives over time to gain deeper insights into the dynamic nature of resource acquisition and strategic adaptation within logistics outsourcing networks.

Additionally, both LSUs and LSPs enhance their operational performance through the exchange of information facilitated by their collaboration. This unplanned information-sharing process strengthens decision-making, optimizes resource utilization, and fosters greater efficiency in logistics outsourcing. This finding aligns with existing literature on knowledge exchange and information sharing. Azeem et al. (2021) asserted that knowledge exchange contributes to the expansion of competitive advantages, while Kim & Chai (2017) highlighted the role of information sharing in enhancing supply chain agility. These perspectives support the argument that collaborative resource utilization fosters strategic benefits within logistics outsourcing networks.

Regarding the quantitative empirical result, this thesis makes a significant theoretical contribution by being the first to examine the interrelationships between selection criteria, outsourcing drivers, and contract management in the context of logistics outsourcing in Vietnam, thereby addressing a critical gap in the existing literature. Although prior studies have examined the relationships between selection criteria and supply chain performance (Banomyong & Supatn, 2011; Alkhatib et al., 2015), contract parameters and supply chain performance (Lackers et al., 2016), as well as outsourcing drivers and supply chain performance (Lahiri, 2016), this thesis contributes a novel perspective by empirically investigating the mediating role of network resources in the relationship between outsourcing factors and supply chain performance (SCP). By establishing the strategic

significance of network resources in enhancing SCP, this research advances the theoretical discourse within the fields of logistics and supply chain management.

5.3.2 Practical contributions

This thesis offers several critical contributions to managerial practice, providing actionable insights for optimizing logistics outsourcing and supply chain performance. The key contributions are as follows:

The findings of this study provide valuable strategic insights for managers seeking to optimize relationships with the LSPs. The research highlights the critical role of network resource achievement, particularly through knowledge exchange and information sharing, which are facilitated by structured training programs and workshops. Furthermore, exchanging information about plans and providing operational support is essential for supply chain managers to develop partnerships with certain LSPs in the network. Consequently, managers should prioritize the establishment of well-defined communication channels and provide support to strengthen collaboration with specific LSPs.

A key barrier to achieving network resources is trust. Without a foundation of trust, the full benefits of collaboration may not be realized. Therefore, managers should only establish partnerships once trust has been gained from logistics providers.

Furthermore, these insights offer a practical framework for managerial decision-making regarding alliance formation with LSPs. By leveraging outsourcing partnerships, firms can gain access to specialized logistics capabilities, ultimately strengthening supply chain performance and competitive advantages. To fully maximize these benefits, managers should implement standardized selection criteria, ensuring a consistent, efficient, and effective selection process that drives immediate operational impact. Furthermore, with network resources acting as a mediating factor, these criteria can facilitate the development of deeper relationships with selected providers, fostering long-term collaboration and mutual value creation. Managers may also consider incorporating additional partner-specific criteria to strategically access and optimize network resources, thereby further enhancing overall supply chain efficiency.

Besides, the study underscores the advantages of long-term contracts in fostering collaborative relationships, leading to lower costs, reduced uncertainties, and enhanced service quality. Managers should consider long-term agreements as a strategic tool for securing reliable and efficient logistics operations.

5.4 Reference list of Chapter 5

Alkhatib, S. F., Darlington, R., Yang, Z., & Nguyen, T. T. (2015). A novel technique for evaluating and selecting logistics service providers based on the logistics resource view. *Expert systems with applications*, 42(20), 6976-6989.

Azeem, M., Ahmed, M., Haider, S., & Sajjad, M. (2021). Expanding competitive advantage through organizational culture, knowledge sharing and organizational innovation. Technology in Society, 66, 101635.

Banomyong, R., & Supatn, N. (2011). Selecting logistics providers in Thailand: a shippers' perspective. *European journal of marketing*, 45(3), 419-437

Hartman, P., Ogden, J., & Jackson, R. (2020). Contract duration: Barrier or bridge to successful public-private partnerships? *Technology in Society*, *63*, 101403.

Kim, M., & Chai, S. (2017). The impact of supplier innovativeness, information sharing and strategic sourcing on improving supply chain agility: Global supply chain perspective. International Journal of Production Economics, 187, 42-52.

Lackes, R., Schlüter, P., & Siepermann, M. (2016). The impact of contract parameters on the supply chain performance under different power constellations. International Journal of Production Research, 54(1), 251-264.

Lahiri, S. (2016). Does outsourcing really improve firm performance? Empirical evidence and research agenda. International Journal of Management Reviews, 18(4), 464-497.

Lavie, D., 2006. The competitive advantage of interconnected firms: An extension of the resource-based view. *Academy of management review*, 31(3), pp.638-658.

Peleg, B., Lee, H. L., & Hausman, W. H. (2002). Short-term e-procurement strategies versus long-term contracts. *Production and Operations Management*, *11*(4), 458-479.

Titre en français : Valorisation des ressources en réseau pour améliorer la performance de la chaîne d'approvisionnement dans le cadre de l'externalisation logistique

Résumé de la thèse

Cette thèse, structurée en trois articles, examine l'impact des ressources en réseau sur la performance de la chaîne d'approvisionnement dans le cadre de l'externalisation logistique. Elle se compose de cinq chapitres : une introduction présentant le contexte, les objectifs, la revue de littérature, le cadre théorique et la conclusion, ainsi que trois chapitres principaux correspondant à chacun des articles : une revue de littérature structurée (chapitre 2), une étude qualitative (chapitre 3) et une étude quantitative (chapitre 4).

Le premier article propose une revue de littérature structurée sur l'externalisation logistique, identifiant les tendances clés, les lacunes théoriques et les pistes futures. Il offre une base solide pour des recherches empiriques ultérieures. Présenté au Vietnam Symposium in Supply Chain Management (octobre 2023), il établit une compréhension fondamentale des manques théoriques dans ce champ.

Le deuxième article adopte une approche qualitative pour analyser comment les entreprises accèdent et mobilisent les ressources en réseau. Il comble une lacune en explorant les déterminants, mécanismes et bénéfices associés. À partir d'entretiens approfondis et d'une analyse thématique, il identifie des leviers clés et fournit des recommandations pratiques. Cet article a été présenté à la conférence EurOMA 2022 à Berlin.

Le troisième article repose sur une approche quantitative utilisant la modélisation par équations structurelles (SEM) pour examiner le rôle médiateur des ressources en réseau entre facteurs clés et performance de la chaîne d'approvisionnement chez les utilisateurs de services logistiques. Il confirme statistiquement les effets identifiés dans l'étude qualitative et complète une analyse mixte approfondie.

Mots clés: Théorie étendue de l'approche fondée sur les ressources, Externalisation logistique, Ressources réseau, Avantages concurrentiels, Performance de la chaîne d'approvisionnement, Utilisateurs de services logistiques

Titre en anglais : Leveraging Network Resources for Supply Chain Performance Improvement in Logistics Outsourcing

Thesis Summary

This thesis adopts a structured three-paper format to examine the impact of network resources on supply chain performance in logistics outsourcing. It comprises five chapters: an introduction outlining the research context, objectives, literature review, theoretical framework, and the conclusion; three core chapters presenting individual papers—a structured literature review (Chapter 2), a qualitative study (Chapter 3), and a quantitative study (Chapter 4).

The first paper is a Structured Literature Review of logistics outsourcing research, identifying key trends, theoretical gaps, and future direction. It offers a comprehensive evaluation of existing studies, laying the groundwork for further empirical research. Presented at the Vietnam Symposium in Supply Chain Management in October 2023, it establishes a foundational understanding of theoretical gaps in the field.

The second paper adopts a qualitative approach to investigate how firms access and utilize network resources in logistics outsourcing. It fills a research gap identified in the first paper by examining the determinants, mechanisms, and benefits of network resources. Through in-depth interviews and thematic analysis, the study identifies key determinants, network resources achievement method and benefits, and offers practical insights into relationship-building. This paper was presented at the 2022 EurOMA Conference in Berlin.

The third paper employs a quantitative approach using Structural Equation Modeling (SEM) to examine how network resources mediate the relationship between key factors and supply chain performance among Logistics Service Users (LSUs). It builds on prior qualitative findings by statistically validating the mediation effects of network resources. This paper strengthens the thesis completing a comprehensive mixed-methods investigation into how network resources enhance supply chain performance in logistics outsourcing.

Keywords: Extended Resource-Based View Theory, Logistics Outsourcing, Network Resources, Competitive Advantages, Supply Chain Performance, Logistics Service Users